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PREAMBLE

In exercise of the authority granted by Section 36.1 of the Livestock Act of Bhutan 2001, the Ministry of Agriculture hereby formulates and adopts the Livestock Rules and Regulations of Bhutan 2008 to facilitate the implementation of the provisions contained therein.

The Livestock Rules and Regulations of Bhutan 2008 is aimed to protect the environment, health and life of animals and humans from risks of entry, establishment and spread of exotic pests and diseases in the country. It is envisaged to strengthen the control and eradication of pests and diseases of animals already present in the country, ensure the quality and safety of animal health care services and animal genetic resources as well as facilitate conservation and sustainable use of animal genetic resources, protect and promote animal welfare, and ensure the quality and safety of foods of animal origin.

CHAPTER I: PRELIMINARY

TITLE, EXTENT AND COMMENCEMENT

1. This Rules and Regulations shall:
    a. Be called the Livestock Rules and Regulations of Bhutan 2008;
    b. Extend to the whole of the Kingdom of Bhutan; and
    c. Come into force from the date specified in the notification of enforcement issued by the Ministry.

REPEAL

2. It shall supersede all previous regulatory notifications including executive orders issued by the Ministry for the implementation of Livestock Act of Bhutan 2001.

DEFINITIONS

3. Unless the context clearly requires otherwise:

    1) ***"Abattoir"*** means any slaughterhouse approved and registered with the regulatory authority as provided in these Rules.
    2) ***"Act"*** shall mean the Livestock Act of Bhutan 2001.
    3) ***"Animal birth control"*** means any method to prevent the uncontrolled increase in the number of livestock, which may include sterilization of female dogs, castration of male dogs, hormonal injections to female dogs or any other method of euthanasia.
    4) ***"Animal"*** means all ruminants and monogastric animals except man, any kind of mammals except man, any kind of four-footed beast which is not covered above, and birds, fish, reptiles, crustaceans or other cold blooded creatures of any species.
    5) ***"Animal product"*** means any substance derived from or produced by an animal.
    6) ***"Artificial Insemination or AI"*** means unnatural deposition of semen into the uterus using scientifically approved methods.
    7) ***"Birds"*** mean any avian species.
    8) ***"Byproduct"*** means any article neither intended nor capable of being used for human consumption that is derived in whole or in part from animals.

9) ***"Carcass"*** means a part of or the whole body of an animal which has died or has been slaughtered.
10) ***"Cattle"*** means bulls, cows, steers, heifers and calves and includes buffalo, mithun and yaks of any age and sex.
11) ***"Cleansing"*** means the removal of objectionable matter.
12) ***"Container"*** means a crate, box or other rigid container used for the carriage of animals or animal products which are not self propelled and which does not form part of a vehicle or aircraft.
13) ***"Contamination"*** means the introduction or occurrence of objectionable matters in food or food premises.
14) ***"Controlling Authority"*** in relation to an abattoir or establishment means Regulatory Authority defined in this Rules and Regulations.
15) ***"Dairy"*** farm means a place for the production, processing, storage, distribution or selling of milk and its by-products.
16) ***"Diseased"*** means infected or affected with or by disease, or affected with any defect, inferiority, or abnormal condition which in question results in the carcass or offal unfit for human consumption.
17) ***"Disinfectant"*** means any agent chemical or non chemical approved by the Ministry for killing microorganisms.
18) ***"Disinfection"*** means the application of disinfectant on any risk goods, establishments or facilities related to animal and animal products with the intention of eliminating micro-organisms.
19) ***"DLS"*** means District Livestock Sector.
20) ***"Dog shelter"*** means any area or premise where dogs are kept by the Local Authority or those premises where dogs are kept by any individual or agency for commercial purposes or humanitarian reasons.
21) ***"Dressed or dressing"*** in relation to;

a) "Slaughtered ruminants" means the removal of head, hide or skin, viscera including kidneys, genital organs, urinary bladder and feet up to carpal and tarsal joints, and mammary glands of lactating animals that have given birth;
b) "Slaughtered pigs" means the removal of hairs and bristles, claws, eyelids, viscera (including or not including kidneys), genital organs and urinary bladder; and
c) "Slaughtered poultry" means the removal of feather, head, feet at the level of shank and below and viscera (not including kidneys)

22) ***"Edible"*** means suitable for use as human food.
23) ***"Establishment"*** means any premises approved and registered with regulatory authority in which dairy or meat is prepared, processed, handled, packed or stored.
24) ***"Exotic disease"*** means a disease not previously recorded in the kingdom of Bhutan.
25) ***"Feed"*** means any substance with a nutritive value used as a food of animals.
26) ***"Fish"*** means an aquatic, cold blooded creature used mainly for food, which includes reptiles and crustaceans.
27) ***"Food animal"*** mean large and small ruminants (cattle, mithun, yak, buffaloes, sheep, and goats), pigs, poultry, fishes and game animals.
28) ***"Fresh meat"*** means meat which has not yet been treated in any way to ensure its preservation, except that it has been subjected to refrigeration.

29) ***"Gup"*** means the head of the geog elected as per the provisions of the Geog Yargay Tshogchung Chathrim, 2002.
30) ***"Horse"*** includes ass and mule.
31) ***"Identification of animal"*** means identification of animal using neck collar, branding, ear tag, tattooing, electronic chips or any other approved methods of identifying an animal.
32) ***"Inedible"*** means food of animal origin that is adulterated, un-inspected or not intended for use as human food.
33) ***"Infected place"*** means a site declared by an authorized official of the Ministry as contaminated by infectious agent.
34) ***"Ingredient"*** means any substance including food additives used in the manufacture or preparation of a meat product.
35) ***"Inspector"*** means an official of the Regulatory Authority or any other official charged with the responsibility of inspection as specified in this Rules.
36) ***"Livestock"*** means cattle, sheep, goats, pigs, poultry, fish and horses kept for use or profit.
37) ***"Local Authority"*** means municipal administration or a Dzongkhag administration.
38) ***"Manager"*** in relation to an abattoir or establishment includes any person responsible for the management of the abattoir and establishment.
39) ***"Meat"*** means the part of the muscle of any cattle, sheep, swine, goats, yaks, or poultry which is skeletal or which is found in the tongue, diaphragm, heart, or esophagus, with or without the accompanying or overlying fat, and the portions of bone (in bone-in product), skin, sinew, nerve, and blood vessels which normally accompany the muscle tissue and that are not separated from it in the process of dressing. Meat as defined also includes dressed carcasses, half-carcasses, quarters, boneless meat and bone-in cuts. Meat does not include the muscle found in the lips, snout, or ears.
40) ***"Meat product"*** means food prepared from meat or food of which meat is an ingredient.
41) ***"Migration"*** means seasonal herd movement of livestock from one place to another.
42) ***"Ministry"*** means Ministry of Agriculture or any other Ministry that may in future be responsible for this Rules.
43) ***"Occupier"*** means owner, manager, or person for the time being in charge of the premises.
44) ***"Offal"*** means fresh meat other than that of the carcass whether or not naturally connected to the carcass.
45) ***"Official"*** means a person authorized by the Ministry for enforcement of this Rules.
46) ***"Organic material"*** means any material that is or contains material derived from an organism, or an excretion or secretion of an organism whether or not it also contains material derived from a human being or contains the secretions of a human being.
47) ***"Organisms":***
    a) Does not include a human being or a genetic structure derived from a human being;

b) Includes microorganisms, genetic structure (subject to para (a) of this definition) that is capable of replicating itself (whether that structure comprises all or only part of the total genetic structure of an entity);
c) Includes reproductive cell or developmental stage of an organism;
d) Includes any particle that is a prion.

48) ***"Pest"*** means any unwanted organism that may cause injury or harm to animal and human health and life and/or to environment in Bhutan

49) ***"Pet animal"*** means an animal kept for companionship under the ownership of a person.

50) ***"Potable"*** means pure or wholesome at the point of usage in accordance with the WHO requirements contained in the "International Standards for Drinking Water".

51) ***"Poultry"*** means domestic fowls, turkey, geese, ducks, guinea fowls, pheasants and partridges.

52) ***"Premises"*** means lands with or without building used in relation to animal and animal products under this Rules.

53) ***"Processing"*** means any activity that pertains to the preparation of meat or edible offal from a carcass and includes such work as dressing, cutting, cleaning, deboning, packing or any work as may be required of it in the slaughterhouse.

54) ***"Quarantine"*** means confinement of animals or animal products that may be harbouring pests or diseases for a specified period under observation by the Regulatory Authority.

55) ***"Quarantine Station"*** means a site or premises approved and licensed by the Regulatory Authority for quarantining and examination of animals or animal products intended for import or export.

56) ***"Regulatory Authority"*** means Bhutan Agriculture and Food Regulatory Authority.

57) ***"Restraint"*** in relation to an animal means application of any procedure designed to restrict its movements in order to facilitate effective stunning or slaughtering.

58) ***"Risk goods"*** means any organism, organic material, or other thing, or substance, that (by reason of its nature, origin, or other relevant factors) is reasonable to suspect, constitutes, harbors, or contains an organism that may cause unwanted harm to animal and human health and life as well as to the environment or interfere with diagnosis, management, or treatment of pests in Bhutan.

59) ***"Rules"*** shall mean the Livestock Rules and Regulations of Bhutan 2008.

60) ***"Stray dog"*** means any dog wandering at large and not being under the control or charge of any person.

61) ***"Suspected animal"*** means any animal, which has been bitten by any rabid or suspected rabid animal or which has been otherwise exposed to the infection of rabies or any animal suspected of harboring a zoonotic disease.

62) ***"Technical Department"*** means the Department of Livestock of the Ministry of Agriculture.

63) ***"Tshogpa"*** means a representative of a village or a cluster of villages as defined in the Geog Yargay Tsogchung Chhathrim 2002.

64) ***"Unfit for human consumption"*** refers to carcass and parts thereof which are unsafe, unwholesome by reason of disease, defect, inferiority, abnormal condition, putrefaction, decomposition, emaciation or of exposure to contamination by dust, flies, insects, vermin, insecticides or by any other means.

65) ***"Vehicle"*** means in relation to the carriage of animals or animal products on land, a vehicle including a trailer of any description and the detachable body of vehicle, which is constructed or adapted for use on land.
66) ***"Village"*** Animal Health Worker means any individual identified by the community and certified by the Department of Livestock as the animal health worker.
67) ***"Waste food"*** means food containing meat or any part of a carcass of any livestock or poultry or any product derived there from or hatchery waste such unhatched eggs or eggshells.
68) ***"Wholesome"*** means safe, hygienic and nutritious food of animal origin meant for human consumption.
69) ***"Wild carnivores"*** mean wild dog, jackal, wolves and foxes which are potential reservoir of rabies.
70) ***"Zoonosis"*** means any disease that is transmissible between animal and man.

CHAPTER II: BREEDING, ARTIFICIAL INSEMINATION AND EMBRYO TRANSFER

Demand, supply and placement of breeding stock

4. Pursuant to section 4.3 of the Act, demand and supply of breeding stock for the community shall be subject to proposal approved by the GYT/DYT. Any breeding stock supplied free of cost by the Government shall be a government property.

5. The location and the community where the breeding stock will be placed shall respect the "guidelines for GYT in making breeding stock (bull, stallion) demand and placement" as specified in **Appendix–II** of **Annexure I.**

6. The members of the community and the Gup shall draw-up an internal agreement following "the framework for community breeding stock management" mentioned in **Appendix – I** of **Annexure I.**

7. The community in consultation with Gup/Tshogpa shall identify the potential breeding stock caretaker and they shall ensure the proper management of the breeding stock supplied as per the "Contract agreement for maintenance of Breeding Stock" mentioned in **Appendix – III** of **Annexure I.**

Use of breeding stock

8. All livestock to be used for breeding purposes shall be certified by an authorized government veterinarian as to their fitness for breeding and freedom from diseases prior to its distribution to the field.

9. Government supplied breeding stock to farmers shall be used only for breeding purposes and the breeding of livestock shall be subject to the "Livestock Breeding Policy" prescribed by the Ministry.

10. In addition to compliance of section 9 of this Rules the breeding stock caretaker shall:
    a. Ensure that proper management, health, feeding, housing of breeding stock (bull) is met as prescribed in the "management guidelines for breeding bulls" in **Appendix IV** of **Annexure I;** and
    b. Report monthly breeding progress to the Livestock Extension Agent (LEA).

11. The LEA shall be responsible to monitor and ensure that the breeding stock is maintained in accordance with section 10 of this Rules.

12. The beneficiaries/ local community to whom the breeding stock is supplied shall be responsible to report to the LEA concerned on the misuse of the government supplied breeding stock.

13. The beneficiaries shall ensure that the breeding of animals in the community is carried out only with the breeding stock approved by District Livestock Sector (DLS) in consultation with National Livestock Breeding Programme (NLBP).

14. Approval of a breeding stock shall be based on relevant "Breeding Fitness Certificate" issued by the breeding authority based on the pedigree history, health status and breeding soundness.

15. Supply of breeding stock for a community will be subject to an agreement effected with them to sterilize all unsuitable male breedable stock in the area.

16. Any breeding animal in the area found suitable/fit for breeding shall not be castrated and subjected to breeding fitness certification in accordance with section 14 of this Rules and Regulations.

17. The approved breeding stock shall be subject to health inspection / sampling for disease screening at least once in every six months which shall be the responsibility of LEC/DLS.

Contract breeding

18. The contract breeding for livestock production shall be subject to compliance with the Livestock Breeding Policy prescribed by the Ministry and strict adherence to the "terms and conditions for contracted breeder" mentioned in **Appendix VI** of **Annexure I.**

Establishment of artificial insemination centre, semen/embryo production, storage and transfer units.

19. Pursuant to sections 5.1, 5.2, 5.3, 5.4 and 5.6 of the Act, establishment of AI centre, laboratory for semen/embryo production, and storage of semen/embryo shall be subject to prior approval from the Technical Department.

20. The Technical Department shall accord approval for establishment of AI centre, laboratory for semen/embryo production, storage of semen/embryo only after assessing the feasibility and standards as prescribed by the Ministry under **Annexure-II.**

21. Based on approval accorded by the Technical Department under section 20 the applicant shall apply to the Department of Trade for a license to operate.

22. Once a license to operate is obtained and the applicant is in a position to comply with the requirement specified in section 25 and 26 of this Rules, the applicant shall apply for registration to the Regulatory Authority. The Regulatory Authority shall upon being satisfied of compliance to the requirements register the establishment for operation and regularly monitor.

23. Establishments specified under section 19 of this Rules shall comply with the standards laid down in **Annexure – II.**

24. All breeding livestock used for semen/embryo production shall be kept only on licensed premises.

Certification and screening of livestock for embryo/semen production and AI

25. All livestock used for semen and embryo production shall be certified by the authorized government veterinarian for breeding fitness as per section 14 of this Rules.

26. Import of livestock for breeding and/or semen and embryo production shall comply with import standard with complete pedigree history of up to three generations along with detailed health record.

Inspection of premises

27. The inspectors and a duly authorized government veterinarian shall have the authority to enter the premises at any reasonable time and as may be required for the purpose of inspection and certification, verify and ensure that all such units comply with the standards and requirements provided in this Chapter.

28. The inspectors shall monitor and carry out auditing and verification of all such premises for compliance with the standards and requirements provided in this Chapter at least once in six months.

Seizure of semen and embryos

29. The inspector shall confiscate and dispose off semen and embryos not fulfilling the requirements as per this Rules without payment of compensation.

Establishment of designated farms

30. Pursuant to Sections 6.1 and 7.1 of the Act, the Technical Department or any private individual or agency may establish farms for the genetic improvement, conservation of livestock or for commercial purpose such as dairy farming. Such farms shall be known as designated farms under this Rules and Regulations. The applicant shall submit its proposal to the Department of Livestock.

31. The Technical Department shall conduct the feasibility of any request for establishment of livestock farm(s)/ firms in collaboration with other technical departments concerned. The feasibility study shall include for instance the location, production potential of the area, market access, and future physical expansion along with social and cultural factors. The NEC and Department of Forest shall issue clearance for infrastructure following vulnerability assessment of the particular location like land stability, environmental degradation and pollution.

32. Based on the above findings the applicant shall apply for a license to operate it from the Department of Trade. Following the issuance of license, the entrepreneurs concerned shall register their livestock farms with the Regulatory Authority. The license shall be issued upon fulfillment of the standards prescribed by the Ministry in **Annexure III**.

33. The Regulatory Authority shall ensure that such farms comply with the standards and requirements as laid down in **Annexure – III**.

Operation of designated farms

34. Pursuant to sections 6.2, 6.3 and 7.3 of the Act, operation of designated farms shall comply with the following:
    a) Strict bio-security measures as specified in **Annexure – III.**
    b) The general disease control measures in these farms shall be in accordance with the requirements of control of notifiable diseases provided under Chapter IV of this Rules;

c) Facilitate Regulatory Authority officials to inspect and monitor compliance with bio-security measures and other prescribed standards.
d) Adhere to the improvement notices or suspend the operation of the farm based on the severity of breach in bio-security measures as notified by the inspectors.
e) Abide by the standards set by the technical departments concerned in operating the farm(s)/firms including the infrastructure design.

Penalties

35. Pursuant to sections 25 and 26 of the Act, the following acts shall constitute an offence and any individual or agency responsible shall be liable to the following penalty and fines:
    a) Any individual or agency establishing and running breeding farm, semen and embryo production unit without a valid license and registration with the Regulatory Authority commits an offence and is liable to a fine of Nu. 5000/- (Ngultrum five thousand) along with suspension of the operation of establishment until all requirements are met;

    b) Any individual or agency involved in illegal commercial sale of breeding stock, semen and embryo and other biological products commits an offence and shall be liable to a fine equivalent to double the market value of the commodity sold or brought for sale. Live animals shall be quarantined and if found to be free of diseases shall be auctioned and proceeding from this shall be deposited in the government revenue. Animals if infected with dangerous diseases presenting significant public health or animal health risks shall be disposed off in a humane manner. Semen and embryos brought for sale illegally shall be disposed off by autoclaving followed by deep burial or incineration. No compensation shall be paid for the seized consignment.

    c) Any licensed establishment failing to meet the prescribed standards shall be suspended of its operation until all requirements are met; and/or

    d) Any licensed establishment repeatedly violating and failing to comply with the prescribed standards shall be permanently closed and license revoked.

36. If the breeding stock caretaker fails to comply with the rules laid down under use of breeding stock including sections 9 and 10 of this Rules, upon repeated notification by the LEA concerned, he/she commits an offence and shall be charged the full cost of the breeding stock at current market value.

Fees

37. A registration fee of Nu. 500/- shall be charged for designated commercial farms. An annual renewal fee of Nu. 100/- shall be charged.

CHAPTER III: IMPORT OF ANIMALS, SEMEN AND EMBRYO

Import of animals

38. Pursuant to sections 4.1, 4.2, 5.5 and 8.2 of the Act, import of animals, semen and embryo shall be regulated as provided hereunder.

39. Importation of all animals including animal semen, embryos, fertilized fish eggs, fingerlings, honey bees, animal feed stuff and fertilized poultry eggs for any purpose shall be subject to prior import permits issued by the Regulatory Authority.

40. Any individual, group, organization or entity shall not import animals of any kind for the purpose of *Tshethar* (*setting animals free to accumulate merit*)

41. Pursuant to Section 4 of the Act, import of livestock, and semen & embryo of livestock for research shall not be permitted if the research activity is prohibited by the Ministry.

42. Import of semen and embryo of livestock, and livestock for research activities not prohibited by the Ministry shall be subject to prior approval of the Department of Livestock**.**

Import of semen, embryo and livestock for research

43. The applicant shall seek approval to import semen and embryo of livestock and livestock for research in the form prescribed by the Ministry. The application shall among other things state the:
    a. Purpose and specific research to be conducted;
    b. Particular species and exact number of livestock to be imported;
    c. Original area from where to be imported; and
    d. Place of research to be conducted.

44. The applicant shall prior to importation obtain approval from the Department of Livestock and import permit from Regulatory Authority.

Prohibition of research on livestock and genetic materials

45. Any research activity on livestock and genetic materials determined as prohibited pursuant to section 41 of this Rules shall not be permissible within the country.

46. Import of livestock for prohibited research activity shall not be permitted.

Import of mithun, frozen semen and embryo

47. Pursuant to Section 5.5 of the Act, import of frozen semen and embryo for livestock breeding and mithun shall be permitted subject to the prior approval of the Technical Department.

48. The Department of Livestock shall assess and upon reasonable justification ensure that such an import if approved shall increase the productivity and profitability of livestock production.

49. In the event approval is accorded the applicant shall prior to importation obtain import permit from Regulatory Authority**.**

50. The import of mithun from India shall be subject to fulfillment of the requirements specified in **Appendix -VII** of **Annexure I.**

Import of day-old chick (DOC)

51. Import of day-old chicks shall be only from the hatcheries recognized and approved by the Regulatory Authority in consultation with the Technical Department.

Procedure on issuance of import permits

52. The importation procedures shall be as follows:

a) An application requesting for import permit shall be submitted to Regulatory Authority at least one month prior to importation of animal including animal semen, embryos, fertilized fish eggs, fingerlings, honey bees, fertilized poultry eggs and animal feed stuff.

b) Regulatory Authority shall issue import permit with the requirement to comply with import health standards and conditions to be met for particular risk goods.

c) Without prejudice to requirements under section 52 (b)**,** the Regulatory Authority while issuing import permit shall ensure that:
   I. Import of livestock for breeding, research or semen and embryo production shall meet the import health standards prescribed in **Annexure I** and shall have obtained prior approval from the Technical Department.

   II. Import of dogs, cats and other pet animals shall meet the import health standards and requirements prescribed in **Annexure IV**.

d) The Regulatory Authority in consultation with the Technical Department or committee established for the purpose shall amend the import health standards and other conditions for particular risk goods based on import risk analysis (IRA) following OIE guidelines and recommendations from time to time depending on the type of risk goods, volume of imports and the disease status of the exporting countries to protect from risks of entry, establishment and spread of pests and diseases to protect life and health of animal, plant and humans and associated environmental risks. The health standards and requirements for import prescribed in **Annexure – I and IV** shall accordingly be amended as and when required.

e) The imported commodities shall be accompanied by a health and other relevant certificates in compliance with the import requirements that are duly signed by an authorized official of the exporting country.

f) Failure on the part of the importer to meet the prescribed conditions in the import permit shall result in the returning of the consignment to exporting country at the importer's expense or destruction/disposal without payment of compensation.

Certification by the exporting country

53. The requirements for certification shall be as follows:

a) Certificates issued for the particular risk goods by authorized official of the exporting country shall be consistent with national requirements if not the relevant OIE Terrestrial Animal Health Code or Aquatic Animal Health Code in effect;

b) Only certificate written in English, Dzongkha or translated in either of the two languages shall be accepted;

c) All animals imported shall be clearly identified with approved methods of identification mark; and

d) Only original certificates shall be accepted.

Penalty

54. Pursuant to sections 24, 25 and 26 of the Act, any individual or agency importing livestock into the country without import permit is illegal and commits an offence and is liable for a fine double the value of consignment based on the proforma invoice/market value of the consignment. Live animal shall be quarantined and if found to be free of diseases shall be auctioned and proceeding from this shall be deposited in the government revenue. However, illegal semen and embryos shall be disposed by autoclaving followed by deep burial or incineration. No compensation shall be paid for the seized consignment.

Fees

55. An import permit fee of Nu.100/- per permit shall be levied for animals imported for commercial purpose whose farms and processing units are registered as commercial entities.

56. An import permit fee of Nu.10/- per permit shall be levied for animals imported for personal purposes.

CHAPTER IV: QUARANTINE, NOTIFIABLE DISEASES AND CONTROLLED DISEASES

Quarantine facilities

57. Pursuant to Sections 8.3 and 36.5 of the Act, the Regulatory Authority shall be responsible for designation of official entry points to check the incursion of diseases into the country, establishment of quarantine stations and institutions for conducting laboratory tests, and operate them as provided hereunder.

58. The Regulatory Authority shall establish appropriate quarantine facilities for different species of animals at official entry points and at any other locations deemed necessary for animal disease control within the country.

59. The quarantine facilities shall be constructed and managed according to the standards provided in **Annexure V** which shall be amended as and when required.

60. For the purpose of this rules, the official entry points for animals are identified as follows:

    a. Entry by land:
        1. Phuentsholing;
        2. Gelephu;
        3. Samdrupjongkhar; and
        4. Samtse

    b. Entry by air:
        1. Paro International Airport.

61. The Regulatory Authority may designate additional entry points as and when deemed necessary through public notification.

Cleansing and disinfection

62. a) Under the supervision of the Inspector, it shall be the duty of the person in-charge of the vehicle, container or air craft, after unloading the imported animal and before any other cargo is loaded, to ensure that:

    i. Every part of the vehicle, container or aircraft in which the animals or their droppings or other excreta have been in contact, and every apparatus, equipment or material used in connection with the carriage or unloading of the animals is effectively cleansed and disinfected using appropriate cleansing and disinfecting agents as prescribed; and

    ii. Such cleansing and disinfection shall be carried out in a manner and to such an extent as may be specified by the supervising Inspector as prescribed in the quarantine manual.

b) In the event of an outbreak of a significant notifiable disease presenting high risk to animals and public health in the neighbouring countries, all those vehicles, risk goods

and potential vectors originating from that country shall be disinfected at the entry points by Inspectors in consultation with the Technical Department concerned to prevent incursion of the disease causing agent into the country.

Quarantine measures

63. The officials of the Regulatory Authority shall have the authority to quarantine animals for animal disease control within the country. Only persons authorized by the Regulatory Authority shall be permitted to come in contact with the quarantined animals.

64. No person employed in the quarantine premises shall keep animals in his custody or care for animals other than those held in the quarantine facilities.

65. The officials of the Regulatory Authority may at any reasonable time collect samples, administer prophylactic or therapeutic treatment to the quarantined animals within the quarantine facilities.

66. It shall be the responsibility of the owner or his representative to provide feed, care and management of animals while under quarantine which shall be provided under close supervision of the official of the Regulatory Authority.

67. The following requirements shall apply for the implementation of quarantine measures:

a) Only those premises established as a quarantine facility pursuant to section 58 of this Rules shall be used for quarantining animals or other risk goods;

b) All imported animals with the exception of pet dogs and cats shall undergo mandatory quarantine at the designated quarantine station for duration of twenty (20) days in general, which may be extended based on the disease status of the exporting country and the species of animals imported. In case of import of day-old chick (DOC) of poultry and other bird, it shall be quarantined at the farm of the destination provided all import requirements are fulfilled. In case of a non-compliance of any import requirement, the DOCs shall be quarantined for duration of twenty (20) days at the designated quarantine station at entry points.

c) In case of import of pet dog and cats, if all import requirements are fulfilled they shall be released without requiring to be quarantined at the designated quarantine station. However, if any of the import requirements are not fulfilled, they shall be quarantined for a period of twenty (20) days at the designated quarantine station.

d) All animals quarantined shall be released only after completion of the specified quarantine period and fulfilling all other quarantine requirements as prescribed in the quarantine manual;

e) No person shall remove from the designated quarantine premises any carcass, fodder, litter, milk, manure or any other risk goods used in connection with or coming from animals under quarantine except with the written permission from the Inspector concerned;

f) If an outbreak of an exotic or notifiable disease occurs during the quarantine period, all the susceptible animals shall be either treated or destroyed humanely as deemed necessary without the payment of compensation;

g) If there is an outbreak of disease which is already endemic in the country, animals shall be subjected to necessary vaccination or therapeutic treatment. The quarantine period for such batch of animals shall be extended by an Inspector as provided in the quarantine manual and/or as deemed necessary; and

h) Carcasses of animals that die during the quarantine period or destroyed under section 67 (f) shall be properly disposed off by deep burial or incineration to prevent spread of the disease to other animals or to prevent environmental contamination.

Restriction on movement of animal product beyond the frontier zone

68. Pursuant to sections 8.4 and 8.5 of the Act, restrictions prescribed hereunder shall apply to the movement of animals and animal products beyond the frontier zone. No animal and high risk animal products like meat, eggs, fresh milk, fresh butter and cheese, fish, canned meat, other animal products or animal feeds shall be moved from an entry point into the country unless it is accompanied by an In-country Movement Permit obtained from the Regulatory Authority office concerned.

69. The Ministry shall institute an emergency committee to impose ban on import of animals, animal products and risk goods to prevent entry of pests and diseases.

70. The ban on import shall be done only upon public notification issued by Ministry stating the ban on import of particular animals, animal products and/or risk goods, and specifying the need to control the spread of disease within the country.

71. The import of risk goods mentioned in section 68 of this Rules shall be subject to inspection and certification procedure of the Ministry developed by the Regulatory Authority to prevent entry of infectious agents into the country.

72. In the event of non-compliance or not fulfilling any of the import requirements, the risk goods mentioned under section 68 of this Rules shall be either rejected or seized and destroyed without any compensation.

Revocation or amendment of import permit

73. According to the changes in animal health and disease status in the exporting country and in Bhutan, the import permit issued may be revoked or amended appropriately at any time by the Regulatory Authority.

74. The Regulatory Authority in consultation with the Technical Department shall amend the import health standards and import requirements as and when deemed necessary.

Inspection

75. Pursuant to section 8.8 of the Act, the Inspectors are authorized to enter any premises, vehicle, container or aircraft in which animals, animal products and risk goods are carried and examine them.

76. The Inspectors are authorized to examine and verify any document required as per the import requirements that is to be accompanied with imported animals, animal products and risk goods.

77. The officials of the Regulatory Authority are authorized to implement inspection and other quarantine measures as required.

Penalties

78. (a) In case of import of animal without obtaining prior import permit from the Regulatory Authority but accompanied by health certificate and/or vaccination card from official veterinary authority of the exporting country, and if all other import conditions such as health of animal upon arrival, absence of ectoparasite etc are found satisfactory upon examination by inspectors at the entry points, the animal shall be allowed entry subject to the payment of non-compliance fine of Nu.200/- (ngultrum two hundred) per animal by the owner or the importer. For DOCs a non-compliance fee of Nu.500/- (ngultrum five hundred) up to 1000 birds and Nu. 50/- (ngultrum fifty) for every additional 100 birds there from shall be charged.

    (b) In case of import of animal with import permit but without fulfilling any of the import requirements specified in the import permit, the animal or DOC shall be allowed entry subject to payment of non-compliance fine of Nu. 1000/- (ngultrum one thousand) per consignment by the owner or importer. In addition, all animals and DOCs shall be quarantined in the designated quarantine station for a specified duration and all quarantine measures specified under sections 67 and 72 shall be applied.

    (c) Any illegally imported live animals (including DOCs) without being declared to the Inspectors shall be seized and quarantine. If animal is found free from diseases, it shall be auctioned and proceeding from this shall be deposited in the government revenue. In case the animal is found to be diseased, it shall be humanely destroyed and disposed off safely.

    (d) Any illegally imported animal products and other risk goods (excluding live animals) shall be seized and disposed off safely. No compensation shall be paid for all the seized consignment.

79. In addition to penalties imposed under section 78 (c) and (d) the illegal importer shall be liable for a fine equivalent to the double the market value of the illegal goods seized.

    In the event no one claims ownership of the goods it shall be dealt as per section 80 of this Rules.

80. The person owning the vehicle that provided transport of illegally imported animal, animal products or risk goods shall also be detained along with the consignment and the owner of the vehicle shall be fined double the market value of the illegal goods seized.

The vehicle shall be appropriately disinfected at the cost of the importer or vehicle owner before it is released.

Fees

81. Quarantine accommodation fees shall be levied per animal as follows except for poultry and other birds:
    a) Large ruminants = Nu. 100/-;
    b) Small ruminants = Nu. 50/-;
    c) Equines = Nu. 100/-;
    d) Swines = Nu. 50/-;
    e) Dogs and cats = Nu. 300/-;
    f) Pet birds = Nu. 300/-; and
    g) Others = Nu. 100/-.

82. For poultry and other birds, a total of Nu. 10/- up to 100 numbers and an additional fee of Nu.10/- for every 100 birds thereon.

Designation and control of notifiable diseases

83. Pursuant to Section 9.1 of the Act, certain diseases are designated as notifiable diseases in **Annexure VI** of this rules which may be amended as and when required by the Ministry. Such notifiable diseases shall be subject to official control measures. The categorization of diseases into notifiable group shall be based on diseases which have significant economic importance and/or those which spread rapidly in epidemic proportions and/or pose potential hazards to both animal and human health.

84. As provided by section 9.2 and 20 of the Act, in the event of outbreak or suspected outbreak of notifiable and/or zoonotic disease, the authorities concerned shall take action according to the broad outline provided below:

a) Any person including owner of the farm or animal shall report immediately any outbreak or suspected outbreak of notifiable and/or zoonotic disease to the nearest livestock office or the Regulatory Authority office concerned.

b) The Livestock Officer-in-Charge of the nearest Livestock Office or the Regulatory Authority office shall send FLASH REPORT of the suspected outbreak of notifiable and/or zoonotic disease to the District Livestock Office (DLO) and RVL/NCAH concerned for investigation. At the same time, where the notifiable and/or zoonotic disease is likely to be contained within a Gewog, the Gup concerned shall upon the recommendation of Livestock Extension Center issue a provisional ban order restricting the movement of livestock and if not the Dzongdag shall upon the recommendation of DLO issue a provisional ban order restricting the livestock movement. If the investigation confirms the absence of notifiable disease the provisional ban shall be lifted.

c) If the investigation confirms the existence of notifiable disease, the DLO and RVL/ National Centre for Animal Health (NCAH) shall further investigate and submit a report including necessary control measures including identification of infected farms or households and area to be declared as infected zone, area of restriction, and the

buffer zone surrounding the infected farms or households to the Officer Incharge of Livestock Office concerned, the Regulatory Authority office, DYT Chairman, and the relevant GYT Chairman.

d) The Dzongkhag Administration concerned shall on the basis of report submitted in section 84 (c) of this Rules issue a ban order with a copy to all the relevant stakeholders restricting movement of animals, animal products and/or other risk goods from the infected and quarantine areas(s);

e) The Regulatory Authority shall implement ban order and all related regulatory measures with support from the Livestock offices concerned, DLO, GYT, DYT and their *Tshogpa* members, and the police;

f) All necessary treatment, vaccination and other technical requirements shall be carried out by the Officer Incharge of Livestock Office with support from DLO and RVL/NCAH;

g) Continuous monitoring and follow up of the disease shall be carried out by the Officer Incharge of the Livestock Office concerned in collaboration with the Regulatory Authority Inspectors;

h) When the disease outbreak is fully controlled and subsided, the Officer Incharge of the Livestock Office concerned shall request RVL/NCAH for investigation to confirm the subsidence of the disease. Upon its confirmation, the RVL/NCAH shall submit the report to the Officer Incharge of the concerned Livestock Office, DLO, DYT and GYT Chairman and the Regulatory Authority;

i) The Dzongkhag Administration shall issue the order of lifting the ban with a copy to all the relevant stakeholders.

j) In case of outbreak in quarantine station or abattoirs, the Regulatory Authority and RVL/NCAH shall jointly confirm the disease and take necessary control measures.

85. Pursuant to section 9.7 of the Act, the Livestock Offices concerned and the Regulatory Authority shall in addition to section 84 of this Rules carry out following measures where appropriate:

a) Confine, separate or move away animals from the locality either for treatment, collection of samples or just for observation;
b) Carry out safe burial or incinerate dead animal and associated risk goods as deemed appropriate;
c) Order for cleansing and disinfection of farm, land, building, vehicles or fomite and other risk goods using appropriate methods;
d) Declare emergency quarantine stations and quarantine the diseased or animals suspected of being diseased; and
e) Impose restrictions on the movement of animals or carcasses or other risk goods from the area declared as quarantined area.

86. Any individual or owner of animal or farm shall report any incidence of unusual sickness, unusual death of animal or death of animals in large numbers to the nearest livestock office or Regulatory Authority office for proper veterinary examination and diagnosis.

87. The vaccination or treatment of notifiable and/or zoonotic diseases shall be done in accordance with the disease control manual developed by Technical Department.

Destruction of animals, animal products and feed posing risk

88. Pursuant to section 9.3 of the Act:
    a) The Regulatory Authority shall compulsorily destroy animals in a humane way if they pose considerable risk to the health and life of animals and human beings subject to payment of compensation or without compensation as deemed appropriate by the Ministry;

    b) In the event the Regulatory Authority official has sufficient evidence to suspect any animal product originating from diseased or dead animals and to his/her judgment poses considerable risk to the health and life of the animals and human beings, the product shall be confiscated and destroyed without payment of compensation; and

    c) Any animal feed that does not meet the national quality and safety standards shall be either rejected (if imported) or not be allowed to sale and shall be withdrawn from the market. Any animal feed suspected to be contaminated by any infectious agents shall be confiscated and destroyed without payment of compensation.

Ban on shows and sale of livestock, poultry, fish and their products under certain circumstances

89. Pursuant to section 9.4 of the Act, once a ban order is issued pursuant to Section 84 (b) and (d) of this Rules, the Regulatory Authority may within the locality, area or region ban shows and sales of livestock, poultry, fish and their products as measures for prevention and control of diseases.

90. All exhibitions like cattle marts, cattle shows, auction and sale of animal and their products shall be immediately stopped within that locality, area or region until further notice from the Regulatory Authority.

Restriction on animal migration routes

91. Pursuant to section 9.5 of the Act;
    a) Any individual who migrate their animal herd(s) from one Dzongkhag to another Dzongkhag shall obtain in-country movement permit from the Regulatory Authority office concerned.

    b) All animals migrating from one Dzongkhag to another shall be compulsorily vaccinated or treated against notifiable diseases in sufficient time before the date of migration and the relevant health and vaccination certificates should be provided to Regulatory Authority while applying for in-country movement permit.

    c) The Regulatory Authority shall restrict issuance of in-country movement permit or revoke the permit if issued earlier for migration of animal herds in the event of outbreak

of notifiable disease in any area along the migratory routes. However, the Regulatory Authority shall in consultation with the Dzongkhag Livestock Office concerned endeavor to find alternative migratory routes for the migratory herds, if possible.

d) The Regulatory Authority shall impose any other additional measures as deemed necessary for issuance of in-country movement permit for prevention and control of notifiable diseases.

Restriction of certain food waste as feed

92. Pursuant to section 9.9 of the Act, no individual is allowed to feed food waste notified by the Department of Livestock or Regulatory Authority or Department of Public Health of the Ministry of Health as risky in terms of potential for spreading or causing disease in animals and humans.

Penalties

93. Any one who migrates or transports a live animal from entry point to interior of the country or from one Dzongkhag to another without the in-country movement permit commits an offence, and is liable for a fine of Nu. 100/- (ngultrum one hundred) per animal, and in case of birds Nu.100/- (ngultrum one hundred) for up to every 50 live birds. The animal shall be let free if found healthy and if there is no outbreak of notifiable disease at the place of origin upon verification. The animal shall be subjected to quarantine if found ill and/or if the place of origin is under quarantine due to disease outbreak.

94. Any person or agency violating ban order on movement of live animal, and their products including other risk goods from the quarantine areas commits an offence and is liable for a fine of double the market value of the animal, the animal products or risk goods moved. The live animal shall be detained and subjected to quarantine for a minimum period of 15 days at the expense of the owner and if found free of disease or treatable, it shall be returned to the owner upon successful treatment. All animal products and other risk goods shall be seized and disposed off safely without compensation.

95. Any person or agency violating the ban order on the animal exhibition, cattle mart, livestock shows, holding of livestock auction, etc as specified in section 90 of this Rules commits an offence and shall be liable for a fine of Nu. 10,000/- (ngultrum ten thousand).

96. If any person owning or under whose custody animals are kept fails to comply with section 92 of this Rules, such a person shall be liable to a fine of Nu.100/- per animal and shall be made to comply with the order of the court if necessary. In addition, if his non-compliance causes economic loss either by death or production loss to any other farmers the owner of the infected animals shall compensate other farmers based on the market value for each livestock that died or the production loss incurred.

Fees

97. A fee of Nu.5/- per permit shall be charged as “In-country Movement Permit” for movement of livestock and livestock products.

CHAPTER V: INSPECTION AND CERTIFICATION

98. Pursuant to section 10.1 of the Act, all establishments related to production, storage, and marketing of livestock and livestock products and animal feeds including those establishments operating under a valid trade license, designated farms and any other commercial farms shall be subject to inspection by the inspectors assigned by the Regulatory Authority.

99. All such establishments shall follow the relevant standards and requirements prescribed by the Ministry in **Annexure II, III, XII, XIII and XIV**.

100. The Regulatory Authority and the Technical Department shall from time to time amend the standards and requirements specified by section 98 of this Rules as and when necessary for the protection of health and life of humans and animals.

101. Inspector of the Regulatory Authority may at any reasonable time monitor and inspect these establishments or parts thereof and examine all necessary documents and records as deemed necessary in order to verify and check for compliance with prescribed standards and other requirements of this Rules.

102. The official of the Regulatory Authority are authorized to examine livestock, livestock products and animal feeds in these establishments and to collect necessary samples for physical or chemical analysis to check whether or not they meet the prescribed standards for quality and safety. The samples shall be collected as per the Sampling Manual of the National Quality Control Laboratory given in **Annexure IX** which may be amended as and when required by the Regulatory Authority.

Substandard animal products and feeds

103. Pursuant to section 10.2 of the Act, any food of animal origin and animal feeds irrespective of their origin shall meet the prescribed standards for quality and safety including labeling requirements and standards of the Food Act of Bhutan 2005, Food Rules and Regulations of Bhutan 2007 or any other relevant laws. The standards for animal feeds are provided in **Annexure VIII** which may be changed as and when required.

104. Sale of foods of animal origin or animal feeds that does not comply with set standards of quality, safety, and labeling requirements is prohibited and shall be withdrawn from the market by the Regulatory Authority.

105. Foods of animal origin and animal feeds that do not meet the prescribed import or export standards and requirements shall not be allowed to be imported or exported.

106. For the purposes of and without prejudice to the generality of section 105 of this Rules, any foods of animal origin or animal feed shall be deemed to be adulterated if:

a) It contains or is mixed or diluted with any substance which diminishes in any manner its nutritive value or other beneficial properties as compared with such food or feed in a normal, pure or specified state;

b) Any substance or ingredient has been extracted wholly or in part or omitted there from and by reason of such extraction or omission, the nutritive value or other beneficial properties of the food or feed are less than its original;
c) It contains or is mixed or diluted with any substance of lower commercial value than food or feed in a normal, pure or specified state;
d) It contains any substance which is not permitted under this Rules;
e) It contains a greater proportion of any substance than is permitted under this Rules;
f) It does not comply with the standard or specification prescribed by any regulation made under the Act;
g) It is mixed, colored, powdered, coated, stained, prepared or otherwise treated in a manner whereby its damage or inferior quality may be concealed;
h) It consists wholly or in part of a filthy, decomposed or putrefied animal, plant products, mineral or any other substances or of any portion of an animal product unfit for consumption;
i) It is contaminated or deteriorated or diseased;
j) It is in a sealed package form and the package is damaged and can no longer ensure protection to its contents from contamination or deterioration; and
k) It is in any package and the contents of the package as originally packed have been removed in whole or in part and other contents have been placed in the package.

Suspension of operation of premises

107. Pursuant to section 10.4 of the Act, Regulatory Authority shall suspend temporarily or permanently the operation of establishments related to production, storage, and marketing of livestock and livestock products, and animal feeds, including designated farms and any other commercial farms if this Rules or the Act is contravened until the necessary requirements are met.

108. The Regulatory Authority shall not permit sale, storage, exchange and supply of livestock if they do not meet the prescribed standards.

Certification agency and grant of certificates

109. The Ministry, pursuant to the authority granted by section 11.1 of the Act, establishes the Regulatory Authority (Bhutan Agriculture and Food Regulatory Authority) as the national certification agency for sale, production and supply of livestock and their products.

110. Any individual, agency, or organization that sells, produces or supplies livestock and their products may apply to Regulatory Authority for certification.

111. The Regulatory Authority official shall inspect and if deemed necessary, collect samples for laboratory analysis and only upon obtaining a satisfactory laboratory test results, the certificates will be issued.

Revocation of certificates

112. Pursuant to section 13.1 of the Act, the Regulatory Authority shall revoke the certificate where it is found that the:
    a) certificate granted was based on the false information submitted; and/or

b) certificate holder has failed to comply with the conditions under which the certificate was granted.

Recognition of foreign livestock certification agencies

113. Pursuant to section 14.1 of the Livestock Act, the Regulatory Authority shall subject to the approval of the Ministry recognize foreign livestock certification agencies.

114. The Regulatory Authority shall be responsible to maintain a list of the duly approved foreign livestock certification agencies which shall be updated from time to time as and when deemed necessary.

115. Import of livestock and livestock products certified by a recognized foreign livestock certification agency shall be considered so long as they are consistent with the requirements under this Rules.

Penalties

116. Pursuant to sections 25 and 26 of the Act the following acts shall constitute an offence and any individual or agency responsible shall be liable to the following penalty and fines:

a) If an individual or agency imports animal feeds without import permit he shall be liable for a fine equivalent to double the value of the consignment imported based on the proforma invoice/market value. All the consignment shall be confiscated and disposed off safely without payment of compensation.

b) If a person or agency who manufactures, prepares or sells livestock product or animal feed that:
   i. Has any substance which is poisonous, harmful or injurious to animal and human health and life;
   ii. Consists in whole or in part, any diseased substance or foreign matter or is otherwise unfit for human or animal consumption;
   iii. Is the product of a diseased animal or animal which has died of other than by intentional slaughter; and
   iv. Is adulterated;

   such a person or agency shall be liable for a fine equivalent to 10 times (ten) the market value of the incriminating commodity. All such foods and feeds shall be seized and destroyed without compensation.

CHAPTER VI: EXPORT OF ANIMALS, GENETIC MATERIALS AND ANIMAL PRODUCTS

117. Pursuant to sections 15.1 and 36.6 of the Act, export of animals and genetic materials from animals may be permitted subject to the following provisions.

a) The Regulatory Authority shall regulate export of all protected or restricted species of animals, biological and genetic material including their products originating from these animals as per the Livestock Act of Bhutan, 2001, Forest and Nature Conservation Act of Bhutan, 1995 and the Biodiversity Act of Bhutan, 2003.

b) No one shall export protected or restricted species of animals, genetic materials and restricted products originating from these animals from Bhutan without obtaining prior export permit from Regulatory Authority or material transfer agreement under the Biodiversity Act of Bhutan 2003.

c) The special export of endangered and protected species of wild fauna and their products if any (for research, exhibition and conservation purposes, etc.) permitted through Ministry's approval shall be consistent with the relevant articles under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and International Treaty on Plant Genetic Resources on Food and Agriculture (ITPGRFA).

Examination, testing and fees for sanitary certificate

118. Pursuant to Section 15.2 of the Act, the Regulatory Authority shall examine and test export consignments of animals and genetic materials. The Regulatory Authority shall levy a nominal fee for a sanitary certificate.

Certification of export consignments

119. In accordance with section 15.3 of the Act, in the event a certification is required by an importing agency or country, the Regulatory Authority shall examine the import certification requirements of the importing agency or country and accordingly certify the export consignments.

Penalties

120. Pursuant to sections 25 and 26 of the Act the following acts shall constitute an offence and any individual or agency responsible shall be liable to the following penalty and fines.

a) Any individual or agency exporting protected or restricted animals, genetic materials or restricted products originating from these animals without prior permit from the Regulatory Authority or without fulfillment of Material Transfer Agreement requirements shall be liable for a fine of Nu.50,000/- (ngultrum fifty thousand) or double the market value of the commodity whichever is higher. The Regulatory Authority shall seize all commodities without payment of compensation.

b) In the event a person or company or agency who received export permit violates conditions specified in his export certificate or Material Transfer Agreement, the

Regulatory Authority shall revoke the export permit and seize the consignment which shall be auctioned and proceeds from it shall be deposited in the government revenue.

Fees

121. An export certification or health certificate fee of Nu.50/- per certificate for commercial and Nu.10/- per certificate for non-commercial purposes shall be charged.

CHAPTER VII: FRESH MEAT HYGIENE AND INSPECTION

122. Pursuant to section 16.1 of the Act, slaughter of food animals shall adhere to the requirements under this chapter.

Ante-mortem and post mortem of food animal for slaughter

123. Pursuant to Section 16.4 of the Act, every food animal brought for slaughter shall be appropriately identified with identification tag, branding or tattoo and shall be accompanied by necessary documents such as import permit or in-country movement permit and health certificate complying with the requirements in **Annexure VII**.

124. Any person bringing yaks for slaughter or sale shall correctly identify his or her animals and shall obtain a letter of authentication from the Gup stating that animals belong to him/her.

125. Inspector conducting ante-mortem and postmortem examination and according approval for slaughter shall ensure that requirements mentioned under section 122 are met.

126. Any person arranging, bringing or responsible for slaughter of food animals for sale shall inform the nearest Regulatory Authority office for ante-mortem and postmortem inspection.

127. Slaughter for commercial purposes in the country shall be done only in the licensed and approved abattoir and shall undergo ante-mortem and postmortem inspection, unless delay in carrying out ante-mortem inspection would cause undue suffering to animals requiring emergency slaughter. However, such incidence shall be notified to Inspector later for postmortem examination.

128. Where animals are slaughtered beyond the reach of the Inspectors of the Regulatory Authority in remote villages, the concerned official veterinarian or para-veterinarian working in that area is authorized to conduct ante-mortem and postmortem inspection and shall issue fit for human consumption certificate.

129. The standards and requirements for the ante-mortem and postmortem inspection for various species of food animals shall be carried out as outlined in **Annexure – X** which shall be amended as and when required.

Humane treatment, management and inspection of slaughter animals

130. All food animals slaughtered throughout the country for human consumption shall be slaughtered in a prescribed humane way, which is by first stunning using approved methods such as electrical or captive bolt stunning and then bleeding to death with the animal hung by its hind legs. The whole process of slaughtering shall be done without causing unnecessary pain or suffering and that the bleeding shall be complete.

131. The humane conditions shall prevail right from the time of loading of animals from the place of origin to the period leading up to the restraint and slaughter. The design of slaughter area shall be such that an animal awaiting slaughter shall not be able to view

the slaughtering process. In addition, it shall also meet other relevant animal welfare standard requirements laid down under Chapter X of this Rules.

132. If an inspector observes inhumane practices at the establishment that results in unnecessary suffering or injury to an animal, the management of the abattoir should be informed, and forthwith the abattoir management should carry out corrective measures to the satisfaction of the examining Inspector.

133. Upon arrival of food animals at the place of slaughter, the Inspector shall;
    a. examine documents which accompanies the animals,
    b. carry out an ante-mortem inspection as outlined in **Annexure - X**.

134. Animals showing any signs of disease and where its place of origin could not be ascertained shall be kept outside the slaughterhouse with no contact with other stock. The Inspector shall be informed as soon as possible so that action shall be taken as per the recommended guidelines.

135. All retail meat sold in the country shall be inspected by the Regulatory Authority Inspector to determine whether or not it is fit for human consumption. Only meat found fit for human consumption shall be certified for sale. However, the meat from a food animal belonging to a household and slaughtered for one's family consumption may be permissible without inspection and certification provided it shall not be sold or gifted to others.

136. All meat shops or meat sale counters in the country must be registered with the Regulatory Authority office concerned and shall meet all the requirements as laid down in **Annexure – XI** which shall be amended as and when required.

137. Condemned carcass, meat and/or inedible other parts of slaughtered animal shall be disposed off safely in an especially constructed biological pit, incinerated or buried appropriately.

138. No person shall be allowed to sell meat in an open street or market area, at open places including national highways or any other unhygienic places.

139. All fresh meat sellers shall clearly communicate to customers the type of meat being sold as to whether it is beef, buffalo meat, yak meat, *zho* meat, mutton, chevon, chicken, duck meat, or pork, etc.

Category of slaughter facility and licensing

140. Pursuant to Section 16.2 of the Act, abattoirs in the country shall be categorized based on standard, the type of business and industry structure as follows:

    (a) Class 'A' – Those abattoirs approved by the Regulatory Authority for commercial purpose with a relatively high capacity of over 300 heads of animals per week or over 15,000 birds per week and shall meet the requirements as outlined in **Annexure – XII**. These requirements shall be amended as and when required.

(b) Class 'B' – Those abattoirs approved by the Regulatory Authority for commercial purpose with relatively less capacity of 50-300 heads of animals per week and less than 15,000 birds per week and shall meet the requirements as outlined in **Annexure – XIII.** These requirements shall be amended as and when required.

(c) Class 'C"- Those abattoirs approved by the Regulatory Authority for slaughter of food animals with capacity of less than 50 heads in villages and shall meet the requirements as outlined in **Annexure – XIV.** These requirements shall be amended as and when required.

141. Any animal meat that was not subjected to ante-mortem and post-mortem examination by an Inspector or his representatives shall not be allowed for sale. Such meat shall be seized and safely disposed off in the designated disposal pit without payment of any compensation.

Prohibition on slaughter of animals and sale of meat

142. Pursuant to section 16.5 of the Act, the Regulatory Authority shall prohibit the slaughter of animals and sale of meat on the auspicious days of 8^{th}, 15^{th} and 30^{th}; on the 4^{th} day of the 6^{th} month (first sermon of Lord Buddha), 22^{nd} day of the 9^{th} month (on the descending day of the Lord Buddha) and during the whole of 1^{st} and 4^{th} months of the Bhutanese calendar.

143. All meat shops throughout the country shall remain closed on all the auspicious days and months specified in the section 142 of this Rules.

144. No individual or farmer shall be allowed to slaughter and sell meat throughout the country on the auspicious days or months specified in the section 142 of this Rules.

145. No hotel or restaurant/canteen shall be allowed to sell fresh meat from their establishments.

146. Animal hides processed either fully or partially shall be allowed for export, while hides meant for human consumption shall not be allowed for sale during these auspicious days and months specified in section 142 of this Rules.

Medical certificates

147. All employees who handle meat in the abattoir and retail meat shops in the course of their work shall undergo a medical examination in accordance with the requirement prescribed in this rules prior to their employment and thereafter every 6 months during the course of their employment to ensure that he/she is not suffering from, or is not a carrier of any contagious disease or condition which may contaminate or cross-contaminate meat. The medical certificate stating the fitness of the individual to work in abattoirs and retail outlets issued by the government medical doctor shall then be submitted to the Regulatory Authority office concerned.

148. Notwithstanding section 147 of this Rules, medical examination of every employee shall be repeated as and when required by the Regulatory Authority.

149. The management or owner of the establishment should take care to ensure that any person, while known or suspected to be suffering from any of the following conditions:

    a. Hepatitis A (jaundice),
    b. Diarrhoea,
    c. Vomiting,
    d. Fever,
    e. Sore throat with fever,
    f. Visibly infected skin lesions (boils, cuts, etc.),
    g. Other skin lesions (boils, cuts, etc., however small),
    h. Discharge from ear, eye, and nose,

    shall not be permitted to work in any meat handling area in any capacity in which there is likelihood of such person directly or indirectly contaminating meat with pathogenic micro-organisms.

150. Any employee so affected as outlined in the section149 shall immediately report to the management or the owner that he/she is ill and subsequently notify the concerned Regulatory Authority official. He/she shall resume regular duties only after he/she is certified free from that particular disease by the government medical doctor.

151. Any employee who has a minor cut or wound should not continue to handle meat or meat contact surfaces until the injury is completely protected by a water proof covering which is firmly secured, and which is conspicuous in color. Adequate first-aid facilities should be provided for this purpose by the employer.

Penalties

152. Any individual involved in falsification of meat commits an offence and shall be liable for a fine double the market value of meat sold or brought for sale. The whole quantity of meat shall be seized without compensation and disposed off safely.

153. Any meat shop violating section 136 shall be liable for a fine of Nu. 5,000/- (ngultrum five thousand) and operation of meat shop shall be suspended till such time all necessary requirements laid down in **Annexure – XI** are met.

154. Any abattoir of category-A not complying with the requirements laid down under **Annexure – XII** commits an offence and shall be liable for fine of Nu. 15,000/- (ngultrum fifteen thousand) and operation of the establishment shall be suspended till the necessary requirements are met.

155. Any abattoir of category-B not complying with the requirements laid down under **Annexure - XIII** commits an offence and shall be liable for fine of Nu. 5000/- (ngultrum five thousand) and operation shall be suspended for the duration till the necessary requirements are met.

156. Any abattoir of category-C not complying with the requirements laid down in **Annexure - XIV** commits an offence and the concerned individual shall be liable for fine of Nu. 1000/- (ngultrum one thousand) and operation shall be suspended for the duration till the necessary requirements are met.

157. Any individual or agency violating any of the provision under Sections 142 to 144 and 146 of this Rules commits an offence and shall be liable to a fine double the market value of the animal slaughtered, meat imported or brought for sale or sold, animal imported or transported for immediate slaughter within the ban period. The live animals shall be seized, quarantined and if found free from diseases shall be auctioned without compensation. The proceeds from this shall be deposited in the government revenue. The meat shall be seized without payment of compensation and disposed off safely.

158. Any individual who sells or sold meat not inspected and certified by the Inspector commits an offence and shall be liable for a fine equivalent to double the market value of meat brought for sale or sold. All meat shall be seized and disposed off safely without payment of any compensation.

159. A hotel or restaurant owner violating the provision under Section 145 commits an offence and shall be liable for a fine double the market value of meat sold and all meat in the establishment shall be seized without compensation and disposed off safely.

160. A manager or owner of abattoir or processing plant violating the provisions outlined under sections 147 to 151 of this Rules commits an offence and shall be liable for a fine of Nu. 1000/- (ngultrum one thousand) per individual.

161. A manager or owner of retail outlet violating the provision under sections 147 to 151 of this Rules commits an offence and shall be liable for a fine of Nu. 500/- (ngultrum five hundred) per person.

162. Any meat handler violating the provision under Section 147 to 151 of this Rules commits an offence and shall be liable for fine of Nu. 500/- (ngultrum five hundred).

163. In all cases of infraction, the Inspector shall serve a reasonable notice for rectification before imposition of fines unless circumstances demand for direct imposition of fines and penalty.

Fees

164. A fee of Nu. 10/- per animal shall be charged for ante-mortem and/or postmortem examination in all categories of abattoirs.

165. A fee of Nu. 1/- per bird shall be charged for ante-mortem and/or postmortem examination in all categories of abattoirs.

166. An annual registration renewable fee for various categories of abattoirs shall be charged as follows:
    (a) Category A = Nu. 1000/-
    (b) Category B = Nu. 500/-
    (c) Category C = Nu. 250/-

167. An import permit fee of Nu. 100/- per permit shall be levied for livestock products imported for commercial purpose.

168. An import permit fee of Nu. 10/- per permit shall be levied for livestock products imported for personal consumption.

CHAPTER VIII: VETERINARY DRUGS

169. All the provisions under the Act pertaining to veterinary drugs and biological and therapeutic substances shall be dealt in accordance with the Medicines Act of the Kingdom of Bhutan 2003 and its rules.

CHAPTER IX: ZOONOSES MANAGEMENT

Designation and control of zoonotic diseases

170. Pursuant to section 20.1 of the Act, any person having suspicion that an animal or carcass is infected with rabies or any other zoonotic disease shall report to the nearest office of the Technical Department or the Regulatory Authority. As per the section 20 of the Act, any outbreak or suspected outbreak of zoonotic diseases shall be subject to official control measures following the relevant procedures outlined in section 84 of this rules.

171. In accordance with sections 20.2 and 20.4 of the Act, for the purpose of vaccination of livestock and pet animals, the Ministry herein designates diseases specified in **Annexure XV** as zoonotic disease which may be amended from time to time by the Ministry.

Registration and vaccination of pet animals

Pursuant to section 20.2 of the Act, the following rules shall apply for the management of pet animals to control the spread or outbreak of zoonotic diseases.

172. The Local Authority shall maintain a registry called “Register for Pet Animals” in which the local authority shall register pet animals and the owners shall provide all the information as required in the registry. The registration shall ensure that adequate record of pets are maintained and are properly identified using appropriate identification device.

173. All owners of pet animals shall be responsible to register their pet animals with the Local Authority concerned.

174. The Local Authority shall ensure to register all pet animals kept within the limits of its administrative jurisdiction.

175. The Local Authority shall issue an annual registration certificate for every pet animal, valid for a period of 12 months from the date of registration. The owners of the pet animals shall renew their registration within one month of the expiry of the current registration certificate.

176. Every pet animal shall be registered by the age of three months or within one month of owning the pet animal. The determination of age by the government veterinary doctor shall prevail in the event of any disagreements with regard to determination of age of the pet animal.

177. Owners of the pet animals shall ensure timely vaccination and deworming of their pets against relevant zoonotic diseases specified in **Annexure XV**.

178. All pet owners shall keep their pets within their compounds and if taken to public places they shall be properly secured to avoid any harm to the public and environment at all times. If pet dogs are taken to a public place for any reason the dog must be muzzled or leashed. All pets not meant for breeding purpose shall be neutered and those meant for breeding purpose shall be registered accordingly. The owner shall be liable to take care of all progenies produced through breeding. It shall be illegal for the owner to let loose their pets into streets.

179. The occupant/owner of any house or private premises where any dog(s) is/are kept or permitted to dwell shall be liable to pay the registration fee for such dog(s), and shall assume the responsibility as the owner of the dog as a pet animal. In situations whereby occupants do not claim ownership, dogs shall be removed by the Local Authority.

180. All pet animals not registered as per the provisions of this Rules shall be considered as stray animals and will be subjected to official control measures prescribed by the Ministry.

Registration of dog shelters

181. All dog shelters shall be registered with the Local Authority. The Local Authority shall issue an annual registration certificate. Certificate of registration shall be issued after ensuring the compliance of technical requirements for a dog pound as prescribed by the Local Authority.

182. Translocation of dogs from a dog shelter to another area shall be prohibited without valid authorization from the Local Authority concerned.

Fees

183. The Local Authority concerned may charge a reasonable annual registration fee for each pet animal. The Local Authority concerned in consultation with Ministry of Agriculture may determine the registration fee, taking into consideration the costs incurred in implementing it.

184. Neutered male or female pet dogs brought for registration shall avail 50% discount on registration fee.

Rabies vaccination

185. It shall be mandatory to vaccinate all dogs against rabies as stipulated in rabies control manual framed by the Technical Department. It shall be the responsibility of the pet dog owners or managers of dog shelters to ensure timely vaccination of their dogs and present to the Local Authority the certificate of vaccination as and when required.

186. Every Local Authority shall ensure that all stray and pet dogs, and dogs in a dog shelter within its administrative jurisdiction are vaccinated against rabies.

187. The local authority may obtain the assistance of governmental agency or civil society organization, or trained and certified village animal health workers in vaccinating all dogs in its area against rabies.

188. It shall be the responsibility of the respective veterinary hospital/livestock extension centre to provide a Certificate of Vaccination.

189. If the dog has been vaccinated through a registered private veterinary facility, the owner of the dog should produce a valid certificate or proof from such source when requested to do so.

190. The Local Authority shall monitor the status and timely vaccination of dogs in their area, and facilitate the Technical Department in implementing the rabies vaccination programme.

191. All vaccinated dogs shall be identified by special collars tied in the neck at the time of vaccination. Pet dogs accompanying visitors from other countries shall be vaccinated against rabies with approved vaccine and shall be accordingly identified.

192. It is the responsibility of dog owner to take care of dog collar. If it is lost or torn, a replacement shall be obtained from the Local Authority upon presentation of the dog vaccination certificate.

193. High-risk occupational groups such as veterinarians and technicians, dog handlers/catchers, and animal attendants shall be immunized regularly against rabies.

194. If a person is bitten by a pet dog, the dog owner shall produce registration and vaccination records of the dog to the human health facility.

195. If unvaccinated pet dog bites anybody, then dog owner shall bear the cost of rabies vaccination and treatment of the victim. Dog owner shall be liable for penalty for non-compliance and/or requirements of mandatory vaccination against rabies.

196. Any person or organisation who knowingly allows a dog to make his or its house or premise dogs ordinary place of dwelling, the person or management of the organization shall be deemed to be the owner of such dog for the purpose of this regulations and shall be liable civilly and criminally for all mischief or all acts of nuisance committed by such dog.

Destruction of animals with proven threat to human health

197. Pursuant to section 20.3 of the Act any animal with a proven threat to public health shall be contained according to the following provisions. Prohibition on slaughter of animals specified by section 142 of this Rules shall not apply in case of destruction of animals with proven threat to human health.

198. If an animal is suffering from or habouring zoonotic diseases like rabies and bird flu and posing imminent threat to public health, such animals shall be euthanized or destroyed humanely using appropriate methods by the Local Authority. The carcasses of animals shall be disposed off safely. Where necessary the Local Authority may destroy reservoir animals in the infected areas in the interest of public health. The owners of the animals that have been euthanized or destroyed after being considered as risk animals may be compensated as deemed appropriate by the Ministry.

199. Any pet which has been bitten by an animal suspected to be affected with rabies shall immediately be detained for observation and necessary treatment in the nearest veterinary centre.

Control of zoonotic diseases

200. The Livestock Office concerned shall ensure that all owners of livestock including farm managers and those have the custody of livestock to carry out regular vaccination of livestock against zoonotic diseases that are endemic in the area, while in low risk areas vaccination may be done as and when deemed necessary only.

201. Active or passive surveillance using appropriate screening tests shall be carried for brucellosis, tuberculosis, salmonellosis, hydatidosis, cysticercosis and any other significant zoonotic diseases in the government, private commercial farms, and also in selected areas where the disease prevalence is high.

202. Pursuant to Section 21.1 of the Act, no carcass or a part thereof of animals died of suspected or confirmed zoonotic diseases shall be passed for human consumption unless certified by the authorized veterinarian or Inspector concerned as fit for human consumption. Such carcasses shall be disposed off appropriately under the direct supervision of the Inspector so that it is not accessible to scavenging animals or for humans.

203. Owners of livestock shall report all cases of sudden deaths or deaths due to suspected zoonotic diseases of animals to the nearest veterinary centre or the office of the Regulatory Authority for investigation. The local veterinary official shall submit periodic reports to the Technical Department.

204. No individual or agency shall either sell or give free of cost to other persons the meat from animals which have died of suspected or confirmed zoonotic and/or notifiable diseases.

205. The Local Authority concerned shall dispose off the dead animals found in any public place as prescribed in the manual on disposal of dead animals.

206. It shall be an offence;

a) To possess a dog without a valid registration certificate.

b) To maintain a centre for keeping dogs/dog shelter for commercial or humanitarian purposes without a valid certificate of registration.

c) For owner or person in charge of animals not to notify the Local Authority concerned or its authorized officer for the presence of a dog or animal that is either diseased or suspected for rabies or other dangerous zoonotic diseases

d) To release a diseased or suspected dog willfully so as to cause threat to the health of the public.

e) For the Local Authority not to take necessary action on receipt of notifications of a diseased or suspected dog or animal.

f) For the Local Authority not to fulfill its responsibility of dispatching the relevant samples of the diseased or suspected dog which has been destroyed for laboratory analysis.

g) To obstruct an authorized officer or his/her representatives in carrying out his duties under this Rules.

Penalties

207. If the authorized officer detects that an owner or a custodian of a pet dog or dog shelter does not possess a valid registration certificate, he shall issue a formal notice requiring the owner or custodian to register the dog within one month. If the owner or custodian of pet dog does not comply, the authorized officer shall impose a fine of Nu.1000/- and where necessary take steps to institute legal action in the Dzongkhag or Drungkhag court.

208. If an authorized officer detects that an owner of the pet dog or a custodian of a dog pound does not possess a valid vaccination certificate for the dog, a formal notice shall be issued giving a period of fourteen days for production of a valid vaccination certificate. If this is not complied with, steps shall be taken by the authorized officer to institute legal action in the Dzongkhag/Drungkhag court. If convicted, he shall be liable for a fine up to Ngultrum one thousand, and the court shall order such person to get the dog vaccinated within a specified period.

209. Any person or organization maintaining a centre for keeping dogs either for breeding or humanitarian purposes fails to produce the certificate of registration issued by the local authority, it shall be liable for a fine up to Nu.20,000/-(Ngultrum twenty thousand). In the event of non-compliance the authorities concerned may institute legal action.

210. If an owner or a custodian of a dog willfully releases the dog suspected of having contracted or having contracted a zoonotic diseases to the community, thereby resulting in a threat to the public, the authorized officer shall impose a fine up to Nu.5000/- (Ngultrums five thousand).

211. Any person who knowingly translocates dogs from one area to another shall be liable for a fine up to Ngultrum 10,000/- (ten thousand Ngultrums) or upon conviction liable to simple imprisonment for a period not exceeding three months.

212. If an owner of a pet fails or refuses to register the pet with the Local Authority within one month from the date of birth, purchase or importation date, he or she shall be liable for a fine of Nu.100/- (ngultrum one hundred) per animal per day.

213. If an owner of livestock fails or refuses to vaccinate against relevant zoonotic and notifiable diseases at required time intervals, he or she is liable for a fine of Nu. 250/- (ngultrum two hundred and fifty) per animal, and in case of birds Nu.250/- (ngultrum two hundred and fifty) for up to every 50 birds.

214. If an owner of a pet animal fails or refuses to vaccinate his or her pet animal and as a result leads to transmission of the disease to other livestock or animals resulting in sickness or death, the owner shall be liable to pay either the whole treatment cost and money equivalent to production losses suffered or the market value of the livestock or animal lost through deaths.

215. If an owner of a pet animal fails or refuses to vaccinate against rabies and as a result leads to the transmission of disease to humans resulting in injury or sickness, the owner shall be liable for payment of full treatment cost related to the injury or sickness and a monetary value equivalent to the number of labor days lost due to absence from work (which shall be calculated on the basis of his/her daily wage). If it results in death of a person, the owner shall be liable for compensation in accordance with the Bhutan Penal Code determined through court process.

216. If an owner of the pet animal fails or refuses to restrain the pet within their private compound or dog shelter and let loose animal in public places, the owner shall be liable for a fine of Nu.100/- (ngultrum one hundred) per animal per day.

217. If an owner fails to put the pet on a lead while being taken to public places, he/she shall be liable for a fine of Nu. 500/- (ngultrum five hundred) per animal. If the noncompliance results in injury or death of a person, he shall be liable for a penalty in accordance with the Bhutan Penal Code determined through court process.

Dog and cat population management

218. It shall be the responsibility of the Local Authority to ensure that effective measures are taken to prevent the uncontrolled increase in the dog population within its area.

219. The local authority may obtain the assistance of governmental agency or civil society organization or trained community animal health workers in providing facilities for neutering of all dogs and cats.

220. Every dog owner shall present their dogs particularly the females which are not kept for breeding purpose to the nearest veterinary centers for early age neutering at 2 to 4 months of age.

221. If a dog owner has unwanted puppies, it shall be handed over to the Local Authority and should not release in the street.

222. The Local Authority may collect reasonable fee for the services rendered.

223. The Local Authority shall take adequate measures to seize and detain all stray dogs in a humane manner through the authorized officers or by persons authorized in writing to do so.

224. It shall be the responsibility of the Local Authority to ensure the provision of facilities for the detention of seized stray dogs. A seized dog may be impounded in the designated dog shelter in the locality.

225. The local authority shall decide on the charge to be levied for cost of seizure and detention of the dog.

226. In the event an owned dog is impounded by the Local Authority, the dog owner shall claim the dog from the Local Authority within a week. The dog shall be released to the owner or duly authorised claimant on payment of charges for the seizure and detention of the dog. Proof of registration and vaccination certificate of the dog shall be produced. If the dog is not registered it shall be registered on payment of the stipulated fee before being release. If the owner does not claim the dog within one week it shall become the property of the Local Authority.

227. All female dogs shall be subject to complete spaying (ovario-hysterectomy) and castration for male dogs prior to relocation of the dogs by the Local Authority. Where possible chemical sterilization technique shall also be used as temporary means of birth control under supervision of authorized and qualified veterinarian.

228. All neutered or spayed dogs shall be properly identified using either neck collar or ear notching. Every pet dog shall carry a registration number on its collar that can be used to trace its owner in the event it is lost.

Wild life rabies control

229. It is the duty of every citizen to report dead wild carnivores in the locality to the Local Authority or veterinary centre.

230. The Local Authority or veterinary centre shall take proper samples to investigate for rabies.

231. Oral rabies vaccine may be introduced for wildlife immunization on the basis of risk assessment and evidence-based information on rabies outbreak.

CHAPTER X: WELFARE OF ANIMALS

Minimum standard for animal welfare

232. Pursuant to section 22 of the Act, a minimum standard for animal welfare is prescribed under **Annexure XVI** of this Rules which may be amended from time to time. Management and care provided for animals shall be consistent with the standards prescribed in **Annexure XVI**.

233. Any individual, entity or a person shall, during the movement, transport, loading and unloading of animals follow the procedure prescribed in **Annexure XVI** and ensure that:
   a) they are handled in such a manner as to avoid stress and exhaustion;
   b) they are provided with adequate food, water and rest;
   c) the vehicle used shall provide sufficient accommodation and space for them and be constructed in such a way as to prevent injury;
   d) the ventilation in the vehicle must be adequate;
   e) animals of different species must be physically separated;
   f) animals of the same species likely to cause injury to one another shall be physically separated;
   g) where vehicle has more than one deck, animals conveyed on the lower deck must be protected by an impervious floor to the deck above;
   h) they shall be loaded and unloaded carefully to avoid injury and stress; and
   i) vehicles used for the transport shall be cleansed and disinfected before loading and after unloading of animals.

234. Pursuant to section 22.3 of the Act, livestock shall not be subjected to any unnecessary suffering or injury through any means such as bestiality, deliberate poisoning, inflicting undue pain and suffering by overloading the beast of burden or causing physical injury or using sick animals for ploughing.

235. Pursuant to section 22.4 of the Act, owners of animals shall provide adequate shelter to their animals to ensure that they do not stray in public places. Any animal straying in public places may be taken over by the Local Authority and kept till the lawful owner claims the animal. The Local Authority may charge a fee for keeping such animals.

Inspection and treatment of animals

236. In accordance with section 23.1 of the Act, the Regulatory Authority shall ensure that general health condition and welfare of animals are taken care of by the owner or the management at required intervals to avoid unnecessary suffering.

237. In accordance with section 22.2 of the Act, any individual/farm manager shall observe the prescribed animal welfare standards in handling and care of animals before, during and after transport, and while feeding and watering as specified in **Annexure - XVI.**

238. As provided in section 23.2 of the Act, the Inspectors may stop, detain and inspect any vehicle carrying animal to ensure that animal welfare standards specified under **Annexure – XVI** are complied with.

239. The Inspectors shall enter any farm, house or premises to inspect livestock and pet animals at reasonable time to ensure that the animal welfare standards specified under **Annexure – XVI** are being complied with.

Penalties

240. Pursuant to section 23.3 of the Act, any individual, owner or the farm manager or agency concerned failing to comply with the prescribed animal welfare standards specified in **Annexure - XVI** for rearing, handling and care of livestock and other animals during and after transport, and while feeding, watering and sheltering commits an offence and is liable for a fine of Nu.100/- (ngultrum one hundred) per animal or for up to every 50 birds.

241. The owner or the custodian of an animal that strays in public place shall be liable to a fine of Nu.100/- (ngultrum one hundred) per animal.

242. Any person subjecting an animal to unnecessary pain and suffering as specified in section 234 of this Rules shall be prosecuted through the court of law.

CHAPTER XI: ENFORCEMENT AND PENALTIES

Inspectors

243. Pursuant to section 24 of the Act all inspectors and officials responsible for implementation of the Act and this Rules shall be subordinate to the Regulatory Authority, Technical Department or any other agencies of the Ministry of Agriculture and the Local Authority as may be notified from time to time.

Authority of inspectors

244. Pursuant to section 25 of the Act, an Inspector may require a person to:

a) answer any question and provide any information relating to the Act and these rules;
b) produce for inspection any license, permit or other documents required to be kept under the Act and this Rules;
c) produce for inspection any animal and their products, food or feed stuff in his possession or under his control;
d) Permit entry by the inspector to any location where animals are kept;
e) Search and detain any vehicle, tools, weapons, animal, which the official believes is used to commit an offence under this Act, and shall give a receipt for anything seized or detained;
f) Enter and search any premise, without a search warrant, only if he believes that the evidence of an offence committed would be destroyed in the process of obtaining a search warrant;
g) Stop, search and detain any person whom he suspects of committing an offence under this Rules;
h) Having detained a person or seized illegal goods notify the Head of the Regulatory Authority and alternatively report the case to the nearest police station.

Power to compound the offence

245. Pursuant to section 26.1 of the Act, an inspector may fine a person who commits an offence under the Act and this Rules, as prescribed, in addition to either;

a) Confiscation of anything illegally taken or the proceeds thereof, or
b) Payment of compensation for any item illegally taken, damaged or destroyed.

On payment of such money, the offender, if in custody, shall be discharged and given a receipt, and the seized property, if any, may be confiscated.

Obstruction of justice

246. Pursuant to section 27 of the Act, any person:

a) Who resists an inspector, assaults, obstructs or falsely accuses an Inspector of wrongdoing while in the course of his duty shall be referred to the court for prosecution;
b) Who knowingly makes a false or incorrect statement to an Inspector, or refuses to give the Inspector any information which he is required to do so under the Act and this Rules shall be fined Nu.5000/- (Ngultrum five thousand) and non-compliance shall result in the prosecution; and

c) Who refuses to produce for inspection any animal, poultry, fish, animal product, poultry product, food, feed, veterinary product or other thing for which any permit or license is required under the Act and this Rules commits an offence and shall be liable for a fine of Nu.1000/- (Ngultrum one thousand).

Liability of inspectors

247. Pursuant to section 28 of the Act the liability of the Inspectors shall be as follows.

a) An Inspector when exercising any power under the Act and this Rule shall, if not in uniform, declare his office and shall on demand produce official identification card as prescribed.

b) It shall not be an offence for a person to refuse the Inspector who fails to declare his office and refuses to produce his official identification card.

c) An Inspector shall not be liable for anything done by him in good faith for the purpose of enforcing the Act and this Rules.

d) An Inspector who wrongfully and without good cause seizes any property or detains any person is punishable in accordance with the Royal Civil Service Rules in effect.

Subsequent offences

248. Pursuant to section 29 of the Act, anyone who commits an offence under the Act or this Rules is liable for fine or punishable with imprisonment through a court process, which may extend from six months to one year. The penalty for repeated offences shall be proportionately increased in accordance with the Bhutan Penal Code.

Confiscation

249. As provided under section 30 of the Act, if a person is convicted of an offence under the Act or this Rules through a court process, the subject of the offence or proceeds from the sale, along with any vehicle, tools, or weapon that were used to commit the offence shall be confiscated.

Cancellation or suspension of permits/license

250. Pursuant to section 31 of the Act, if a license holder is charged with an offence under the Act or this Rules, the license may be suspended for the appeal period. The final decision on the appeal shall result into either cancellation or dropping the suspension.

251. In the event of repeated offences and based on the gravity of the offence, the Regulatory Authority may cause to revoke the permit or license to operate.

252. Pursuant to section 35 of the Act, the appellate authority for final decision shall be the head of the Regulatory Authority or any other competent official appointed by the Minister.

CHAPETR XII: MISCELLANEOUS

GENERAL POWERS OF THE ROYAL GOVERNMENT

253. Pursuant to section 36.1 of the Act, the Ministry may amend this Rules as and when deemed necessary.

254. Pursuant to section 36.2 of the Act, the Ministry hereby empowers the Regulatory Authority in particular and any other agency designated in this Rules to exercise the functions and authority specified under this Rules for effective implementation of the Act.

255. Pursuant to section 36.3 of the Act, the Ministry shall through its agencies ensure to enforce the requirements and conditions in any certificate, permits and license referred to in the Act and this Rules.

256. Pursuant to section 36.4 of the Act, the Ministry through the Regulatory Authority or any other designated agency shall collect the fees due to the Royal Government under the provisions of the Act and this Rules subject to issuance of official money receipt. All fees so collected shall be deposited in the government revenue.

257. The Regulatory Authority shall subject to the Ministry's approval revise various fees and fines charged under this Rules as and when deemed necessary.

258. Pursuant to section 36.7 of the Act, the Regulatory Authority of the Ministry shall examine all export consignments and levy fees for the service provided.

259. In accordance with section 36.8 of the Act, the Ministry shall as prescribed under this Rules examine requests for certification by importers and may issue certificates if the standards and procedures prescribed are fulfilled or complied with.

Rule of construction

260. In this Rules, unless the context indicates otherwise, the singular shall include the plural and the masculine shall include feminine.

ANNEXURE – I: STANDARDS FOR PEDIGREE AND BREEDING PARAMETERS OF LIVESTOCK MEANT FOR BREEDING, SEMEN AND EMBRYO PRODUCTION

Appendix – I: Framework for the Community Breeding Stock Management

The following guidelines shall serve as a broad framework for the implementation of community breeding stock management. Each village and Geog should adapt them to location specific needs and priorities as deem appropriate.

1. Objective

- To promote better and effective participation of farmers in the livestock development activities, namely, breed improvement;
- To ensure better and equal sharing of cost and benefits by the community members;
- To ensure future sustainability of the breeding bull procurement and distribution scheme;
- To increase the sense of ownership of the scheme thereby facilitating better and effective services.

2. Community mobilization

2.1. Membership

Though the entire community of a particular locality is expected to benefit from the breeding stock supplied, all of them may not have the means to take care of it. A list should be prepared of people willing to take care of the breeding stock supplied who will benefit certain advantages described here under. These people will be known as members.

Other people from the community may join the membership in the future when they feel they can manage the breeding stock. In the long term, members should form into a farmer group or breeders' association.

2.2. Eligibility Criteria

Membership eligibility criteria will be established jointly with the community, LEAs and other relevant agencies. Those, which fulfil the eligibility criteria, become members after signing agreement or memorandum of understanding. Eligibility criteria should include among others the capacity in terms of fodder availability and manpower to manage the breeding stock as well as a willingness to be part of the scheme.

2.3. Management Committee

A management committee consisting of two or three members is to be selected/ elected by the Gup/ Tshogpa and the community. The main responsibility of such a committee is to ensure that the community breeding stock is managed in line with the contract agreement laid down by the Department of Livestock and those agreed upon by the community (*Appendix III*).

2.4. Roles and Responsibility of Members and Management Committee

After discussing with the concerned community members, it is important to clearly spell out the expected roles and responsibility of members and that of the management committee. Each and every member is responsible for the well-being and proper management of the supplied breeding stock. Appropriate check and balance mechanism like imposition of penalty, fine etc on defaulters should be given due importance.

2.5. Benefits and Returns from the Scheme

The members must decide the amount of the fee which should be paid by the beneficiaries for each service and when a progeny is born. Distinction should be made between members and non-members. The non members are expected to pay more for the services availed as they do not take care of the breeding stock.

2.6. Generation of Common Fund

The concept of creating a common fund for the benefit of the members should be given due importance. This gains importance especially in view of facilitating the community to be able to sustain such scheme in future on their own. This is also to instil and introduce the concept of self-help among the members.

The common fund is basically the money paid by the members and/or non-members for the services of the breeding stock and/ the progeny born. The members should decide on the ways and means to put the money into effective use and avoid misuse. For example, the money could be used to purchase replacement stock, for maintenance breeding stock etc.

3. Breeding Stock Management Mechanism

3.1. Breeding stock Management

An appropriate system or mechanism to manage the supplied breeding stock properly is a prerequisite. While the community should be given complete liberty to decide on any method as deemed appropriate to their situation, the following may serve as some useful guidelines:

- Appointment of a breeding stock custodian/ attendant. The community should arrange for the payment of the attendant and other necessary support;
- A member volunteers to take care of the breeding stock who shall charge for the services rendered as per the agreement or consensus reached between the community members.
- Members to take care of the supplied breeding stock on a rotational basis for specified duration (1 month/ 3 months/ 6 months/ 1 year etc.) ensuring proper care and feeding.

The community should be well aware of the advantages and drawbacks of the different systems.

3.2. Record Keeping

This is a compulsory aspect of the scheme. An effective record keeping will not only be useful to the Dzongkhag or the Department to effect necessary policy and implemention strategies but also it will help in keeping dispute and disagreement among the members to the

minimum. It is stressed that uniform and standard record keeping system should be followed through out the country for ease of management and analysis. A register will be given to the community along with the breeding stock. Information concerning reproductive parameters, health status, attendance (the data to be recorded must be defined by the concerned authority) should compulsorily be recorded. This register will accompany the breeding stock throughout its life. The community is free to organise the record keeping.

3.3. Breeding stock Exchange Programme

This basically applies to exchange of community breeding bull, stallion and rams. Such breeding stock exchange programme must be pursued rigorously in order to avoid in-breeding in a population. The exchange programme could either be intra or inter Geog or even intra or inter Dzongkhag. This exchange programme should be worked out in detail at the beginning of each year or each plan period either by Central Farm and/ in consultation with the concerned Dzongkhags. This should be in turn supported by appropriate policies, legislation and legal framework.

3.4. During the Death of the community breeding stock

3.4.1 The write off procedure

In case of death of a community breeding stock, the following measures should be taken. A time frame of **1 month** is given between the death of the animal and the write off.

- The community should inform the LEA and the Dzongkhag as soon as possible after the death of the community breeding stock.
- When technical verification of the death by a veterinarian is possible (the bull is kept at less than half days walk from the nearest veterinary centre), he should conduct the post-mortem, if not the LEA shall perform the post-mortem.
- All the relevant samples including HP samples should be submitted by the LEA to the NCAH/ RVL along with the death certificate and the PM report.
- The NCAH/ RVL should then certify the death and send all the relevant documents to the DLO.
- The DLO fowards these documents to the Dzongda who signs the final write off and sends a copy of the write off to the NLBP/ concerned Farm.
- The Dzongkhags shall compile quarterly the deaths of Community Breeding Stocks (bulls/ stallions/ rams) with full explanation of the causes of death and send the compiled report to NLBP who is responsible for the monitoring of the breeding stock.

3.4.2 Disposal of the carcass

The LEA/ RVO/ BAFRA inspector is responsible for certifying whether the meat is fit for human consumption or not.

- If the meat is **not** fit for consumption, the carcass must be disposed off in the most hygienic/ acceptable way.
- If the meat is fit for consumption, it should be sold by the community's management committee and the money should deposited to the government revenue account of the particular Dzongkhag.

3.4.3 Case of death due to lack of proper management

A breeding stock / ram) to the community is given for a period of three years (bull/ stallion) and two years (rams), after which it will be exchanged. If the breeding stock dies within this period, the cause(s) of death will be analysed case by case to decide whether or not another breeding stock should be supplied or not. In case of death due to lack of proper management, the RGOB will not supply a new breeding stock immediately to the community or they should pay for the replacement stock.

3.5. Culling procedure

1. The community requests the Dzongkhag to have their community breeding stock culled with proper justification.
2. The Dzongkhag forwards the culling proposal to the NLBP.
3. The NLBP and RVL jointly conduct the status evaluation of the breeding stock with a score card developed to this effect. They award their technical sanction for the culling to the Dzongkhag.
4. The Dzongkhag gives the final approval for the culling of the breeding stock and is responsible for its disposal (the breeding stock shall not be distributed to anyone/ anywhere as it has been judged unfit for breeding).
5. The breeding stock other than stallion shall be sold at the current meat rate for 60% of the live body weight and the money collected goes to the government revenue account. In case of Stallion it should be sold on auction after fixing a base price as per the prevailing market price.

3.6. Monitoring and Evaluation

For this, the community members or beneficiaries of the community as a whole must be actively involved in monitoring of the community breeding stock on the aspects like its management and utility by themselves. This is mainly to create peer and societal pressure on the concerned custodian/ caretaker of the breeding stock so that an effective management of the breeding stock becomes a reality.

However, monitoring and evaluation of technical nature will be conducted by the external agencies like the LEAs, Dzongkhags, RVLs/ NCAH and NLBP.

Appendix-II: Guidelines for GYT in making Breeding Stock Demand and Placement

The following should serve as broad guidelines for the GYT in making demand and placement of a breeding stock (bull/ stallion) in a community.

- There has to be a breedable female population of not less than 30 animals and is within the 3hrs walking distance for animals from the location of the community breeding stock.
- The community should have agreed to keep the community breeding stock preferably at a central location so that all the breeding females could have easy access to the breeding stock.
- The particular place/ locality where the placement of a community breeding stock is proposed should be beyond the accessibility to AI facilities in case of cattle.
- Breeding stock management strategy should be in place prior to its placement.
- The community should identify the community breeding stock custodian in advance and the custodian should have received proper management training organized by the Dzongkhag Livestock office/ concerned breeding farm.
- The community breeding stock custodian should sign an undertaking / contract agreement (*appendix-III*) with the Dzongkhag Livestock office and the Breeding Programme in presence of the Gup/ Tshogpa that the community breeding stock will be managed as per the management guidelines provided.
- It should be possible to establish some acreage of improved pasture in the community land for the community breeding stock or the community should assure that adequate qty. of fodder could be available for the breeding stock all year round.
- The GYT should put up the demand in the DYT for the Dzongkhag Livestock Office to conduct the feasibility of placement of a breeding stock and rationalize the demand.
- The community breeding stock custodian and members should also agree to participate in relevant trainings if conducted by Dzongkhag or Central Units under DoL in future.
- The above guidelines shall apply to all community breeding stock.

Appendix – III: Contract Agreement for Maintenance of a Breeding Stock

We/ I, …… son /daughter of …… resident of ……... House No. ……. Thram no. ……. of geog ……under …… Dzongkhag, have fulfilled the selection criteria as a Contract Breeding Stock Custodian and do hereby agree to the terms and conditions given below concerning the attendance of the community breeding stock given to us/me as custodian under the Contract Breeder Scheme:

1. I shall take proper care of the community breeding stock and provide necessary feed and shelter for it in the village, in accordance with the guidelines/instructions given by the Department of Livestock.

2. As per the Department's needs I shall accurately record all the detail of the services/matings performed by the bull in the provided register. The records will be made available on a monthly/quarterly basis to the staff concerned of the nearest Livestock Extension Centre who responsible for the supervision of the community breeding stock.

3. With the community breeding stock I shall provide unrestricted services to the breedable healthy females of the nearby households/village. The number of the services however, shall not exceed 2 per day or a week on an average. I will be allowed to charge a mating fee of Nu. 10/- per first service either in cash or kind. (1^{st} & 2^{nd} repeated heat services are free of cost).

4. I shall immediately inform the nearest Livestock Extension Centre in the event of any accident, illness, disease or death of the breeding stock. In case of death, the whole body will be surrendered without any loss of time to the LEC for Post-mortem in order to take further necessary action

5. In case that the community breeding stock under my custody dies due to my negligence or due to failure on my part in reporting immediately to the LEC, I shall pay the full cost of the breeding stock fixed by the Dzongkhag Authority.

6. Should I be found negligent in the opinion of the Dzongkhag/ concerned Authority in maintaining the community breeding stock in-spite of warnings, I shall be declared disqualified and forfeit any claim to any progeny production allowances for the year under consideration. My breeding stock keeper contract will be cancelled.

7. I am not authorized to misuse/ dispose of the community owned breeding stock or to slaughter it.

8. I agree that the community breeding stock under my custody will be protected from various contagious or infectious diseases through prophylactic measures as per the routine animal health programme of the Department of Livestock.

9. Scrub males in the locality/ surrounding villages will be castrated/ vasectomized to a feasible extent as per the decision taken by the public and the authority concerned while selecting the breeding pocket.

10. I shall be compensated as follows to maintain the breeding stock in proper condition, providing services and keeping records thereof :

    a) Breeding stock maintenance allowance of Nu. 100/- and 50/- per month per large animal and small animal respectively, which may be in form of concentrate and salt for supplementing the winter feeding from December to March if need be and so decided upon by the Department.

    b) Progeny Production Allowance of Nu. 30/- per progeny born reported, registered and ear-tagged by the LEC staff at the age between 1 and 2 months.

11. In case the supplied community breeding stock has not produced a minimum of 25 progenies during the period of a year, the Department reserves the right to remove the bull from the location for placing it in another more deserving area. Such changes will have to be done by the Dzongkhag Livestock Officer and in consultation with the NLBP/ ageny/ unit supplying the breeding stock who is being responsible for the breeding and planning work.

12. The Contract Breeding Custodian shall be exempted from ***" Shaptolemi "***

13. I agree that the breeding stock will be replaced/ exchanged after a period of 3 to 4 years in accordance with the breeding plan in order to avoid in-breeding. The NLBP/ concerned Breeding Centre will be responsible for the planning and the Dzongkhag for the implementation of exchange/transfer.

14. This agreement was signed on …….and is valid with effect from this day up to termination of the contract under normal conditions. A notice period of three months is binding for both parties.

Signature: …….	……..	……
Name: ……	……..	……
Contracted Breeder	***VO/ LO for Breeding Programme***	***DLO for Dzongkhag Livestock Office***

Witnessed by: Signature: …….
Name: ……
Gup/Tshogpa of the geog/ village

The particulars of the breeding stock placed are:

Ear tag No.: ……

Date of birth: ……

% of exotic inheritance: ……

Description: ……

Pedigree sire: ……

Dam: ……

Sire's Sire: ……..…….

Dam's Sire: ……..

Appendix – IV: Management Guidelines for Breeding Stock

It is essential that the govt. supplied breeding stock for the benefit of the community is maintained as per the management guidelines enlisted hereunder;

Feeding:

1. The keepers/ community (beneficiary) should ensure enough pasture and fodder production for adequate feeding of the community breeding Stock. For this, the community should make internal arrangement for continuous provision of fodder to the breeding stock.
2. The breeding stock should be fed @ 2.5 kg Dry Matter (DM) for 100 kg live body weight (bulls, stallions and rams). The concentrates should be fed daily as maintenance ration at the minimum level of 1.5 kg for a breeding bull/ boar, 2 kg for a Stallion, 500 gm for Rams.
3. The vitamins (e.g. Amnovit) and minerals (e.g minmix, agrivet, Tonophosphan etc) should be given to breeding stock as and when required.
4. Free forest grazing should be discouraged in order to avoid accidental fall and predation (bulls, stallions, rams)

Housing:

The community breeding stock should be provided with good shelter to protect from inclement weather. The housing for the breeding stock should have following provisions.

1. The shed/ stable for the breeding stock may be built with any materials locally available.
2. The type of the housing may vary from place to place. Although it is sufficient to have good quality roofing with simple wall or no wall in hot places, the housing in cold places should have good wall to protect from cold.
3. The floor should be concrete or stone slabs may be provided to enable easy cleaning of the shed/ stable. A simple drainage with gentle degree of gradient in the floor may be kept to facilitate easy cleaning.
4. The standard measurement for the breeding stock should be 8'X6' for a bull/ stallion and 4'X 4' for Ram.
5. There should be separate manger (2'x1') or wooden troughs for feeding purpose and to avoid un-necessary spoilage of the feeds.

Health:

1. The community breeding Stock should receive prophylactic vaccination against important diseases such as FMD, BQ, HS, Anthrax, IBR for bulls and FMD for Rams.
2. Deworming against endoparasites should be carried out on regular deworming schedule. However, it is the responsibility of the breeding stock custodian and the LEA to send the fecal sample routinely to the nearest veterinary laboratory for analysis.
3. It is the responsibility of the LEAs to vaccinate and deworm the animals routinely.The health card or register should be maintained separately for each

breeding stock and all the vaccination, de-worming and treatment carried out should be entered in this register.

4. The routine screening of the breeding bulls against the important diseases should be done in the field by the nearest concerned veterinary laboratory.
5. The community breeding stock custodian should immediately report to the nearest LEC if the animal falls sick for immediate intervention.

Others:

1. It is also important to provide exercise for the breeding stock to avoid obesity.
2. The breeding stock may be given libido inducer when required in consultation with the concerned breeding unit.
3. In case of death of the community breeding stock, the custodian should report promptly to the nearest LEC. The detail postmortem examination should be conducted by the RVO/VO. If this is not possible then concerned LEA should conduct the PM and all the relevant laboratory samples including HP samples along with the PM report should be submitted to the RVL.

Appendix – V: Pedigree & Health Status Certification prior to selection of breeding stock

Certification of Pedigree & Health status of an animals/ bird for breeding should be done by the authorized Veterinarian of the Department

Ref. Letter No---------- *Date*----------

1. **Owner (*name and address*):**
2. **Description & performance of animals (*record relevant information for the species*)**
   a) Name/ Identification no.:
   b) Date of birth:
   c) Breed & blood level:
   d) Name/ Identification no of Sire:
   e) Name/ Identification no of Dam:
   f) Breed characteristics (body colour/ :
   g) Body confirmation:
   h) Milk production capacity of Dam for bovine only (lts/ day):
   i) Avg. growth rate monthly up to one year:

3. **Herd/ flock status (*record relevant information for the species*)**
   a) Number of animals/poultry *(by species, sex and age group*):
   b) Clinical examination:
      i) All apparently healthy: ***Yes/ No.***
      ii) Disease suspected. : ***Yes/ No***.
      iii) Animal/ poultry treated: ***Yes/ No***
      If Yes;
      Date of treatment:
      Date of follow-up examination following the earlier treatment:
      Results:
      Further treatment given: ***Yes/ No***
   c) Vaccines used in the herd/flock***: Yes/ No***
      Type of vaccine used:
      Date of vaccination:
   d) Tubercululin Test (for bovine species):
      Tests date:
      Results:
   e) Brucella tests.
      Tests dates
      Results

   f) Others diagnostic tests.
      Type
      Dates
      Results
   g) Fecal Sample examination
      Date:
      Parasitological findings:

4. **Health status of the animal/ poultry to be selected for breeding** (*record relevant information according to species*)
   a) Number of animals/ Poultry by species, sex and age:
   b) Result of clinical examination.
      i) Apparently healthy: ***yes/no***.
      ii) Details of treatment given:
      iii) Vaccination status of the animal/ bird: ***vaccinated/ not vaccinated as required***.
   c) Status of genital organs: ***Normal/ Abnormal***
   d) Examination of prepucial washings
      i) Microscopical (microbes)
      ii) Cultural (microbial load):
   f) Evaluation of Semen.
      i) Microscopical (mass activity & initial motility)
      ii) Cultural (bacterial load):
   g) Results of tuberculin test.
   h) Results of brucellosis test.
   i) Results of other diagnostic tests, if any.
   j) Suspicion of external or internal parasitism.
   l) Health evaluation of the animal/ bird.

5. **Selection/ Rejection of an animal/ bird (Justify in each case)**
   The animal/ bird was in good health and selected for breeding ( )
   Or
   The animal/ bird was not selested for breeding ( )

Certified by:

Signature: ……
Name: ……
Designation ……

Appendix – VI: Terms and Conditions for Contracted Breeders

The Contract Breeder here after referred to as "the farmer" has agreed with the concerned breeding farm, here after referred as "the breeding programme" for the production of breeding stock with technical support from NLBP as per the terms and conditions laid down below :

A. For Contract Bull Production

The following terms and conditions should be fully understood and agreed upon by the Contract Bull Producer (CBP), the concerned farm, Dzongkhag Livestock Officer (DLO), the CBPP in charge and the *Gup* for its effective implementation.

1. Pre- selection of breedable animals (Cows/Heifers)

1. The CBPP In-Charge/ concerned LEA is responsible for the identification of potential animals to be parts of the CBPP and also responsible for the identification of animals which have become unfit to be part of the CBPP. Once he/she has identified these animals, they should give a full account as per the capacities (or incapacity) of the given animals and transfer this account/data to the Breeding Programme.
2. The animal should have a phenotype matching one of a Jersey cross with more than 50% Jersey inheritance.

2. Final selection & Identification of the selected animals

1. The final selection of pre-selected animals will be done based on;
   a) its production for cows or dam's production for breed-able heifers. The animal/ dam should have an estimated production of at least 1800L per lactation.
   b) The health status of the animal. The animal should not exhibit any signs of a contagious disease. A known repeat breeder or an animal having in the past aborted more than twice should not be selected.
   c) The pedigree of the animal. The animal should show ascendants with only Jersey and Nublang genes. The animal should not be a result of inbreeding.
2. NLBP is responsible for the final selection and/or removal of animals from the CBPP.
3. Once the animals are selected by NLBP and representative of the concerned Dzongkhag they will be identified with ear tags according to the national cattle identification system, and allotted an individual Bovine Register.
4. All progeny born under the CBPP shall be ear tagged in their first month with plastic ear tag and with metallic after 1 year.
5. A female progeny under the CBPP is also part of the Programme given the necessary condition that its Sire is the Progeny Tested Pure Jersey semen distributed by NLBP.

3. Removal of animal from the CBP programme

The following criteria will be taken into account to remove an animal from the CBPP when;

1. The animal dies.
2. The animal is sold to a farmer living out of the CBPP area.
3. The milk production recorded amounts to less than 1800L per lactation.
4. The cbp does not respect the terms and conditions of the contract (if the animal has been served by a breeding bull for example).

4. Artificial Insemination and its outcome

1. NLBP is responsible for the timely distribution of Progeny Tested Pure Jersey Semen.
2. The CBP farmer is responsible for:
   a) Heat detection of animals.
   b) Bringing the female to the LEC/ designated area on time for insemination.
   c) Keeping away any breeding bull from the dam at the time she is in heat.
3. The CBPP In-Charge is responsible for:
   a) Performing the insemination free of cost, only with the Progeny Tested Pure Jersey Semen distributed by NLBP.
   b) Making the follow up of the ai. If an unusual number of repeat and/or abortion cases are detected, the in charge should report the matter to DLO, NLBP RVLs/ NCAH.
   c) Progeny tested semen should not be used in animals other than animals included in the programme (ear tagged animals of the CBPP)

5. Recording of performances

1. Until the farmers are capable of recording the performances; which can be achieved through training, the CBPP in-charge/ concerned LEA will do the performance recording of the CBP animals personally.
2. The recording shall be done once a month for ten months.
3. The in charge and the CBPP will fix a day of the month (always the same day) when the recording will be done.
4. Morning and evening milk should be recorded with a proper measuring scale in litres.
5. Whether the calf is suckling or not should be mentioned
6. If fat testing equipment is available then a milk sample shall be tested for milk fat percentage and recorded by the concerned LEA.
7. The following measurements of the calf should be done once a month (in centimetres) with a measuring tape:
   a) Girth
   b) Body length
   c) Height at withers
8. The data (performance records) kept at farmers level, should also match the centralized data at the Dzongkhag and National level.

6. Animal health and preventive measures

1. The CBPP in charge has the responsibility to vaccinate and deworm all the animals under the programme regularly.
2. In case of diseases or death of animals under the CBPP the farmer must report the case to the CBPP in charge for timely follow up.

7. Procurement of male offspring (Bulls)

1. The progeny born is from Dam under the CBPP and the Sire is progeny tested pure jersey semen sent from NLBP.
2. The progeny is of the age group between18-36 months.
3. Semen evaluation (spermeogram) is done and found out that the bull is fit for breeding.
4. Phenotypic look should conform the characteristics of the breed
5. Free from contagious diseases

8. Fixing of the procurement cost

1. The procurement cost for the CBPP progeny shall be fixed by the procurement committee. The max cost would be Nu. 7000.00 for Jersey cross bulls & Nu.10000.00 for Pure jersey bull depending on the following.
   a) dam's milk yield
   b) growth rate of the calf and its age
   c) phenotypic characters of the calf
   d) health status

9. Training

1. CBPP in-charge of NLBP, DLO and LEC in charge will conduct regular training for the CBPP farmers on the following aspects;
   a) Feeding management
   b) Breeding activities
   c) Management of dairy cattle
   d) And any other relevant subjects
2. The CBPP farmer has to send one person from his / her household to attend the training. He should implement the advice given during the training.

Cows/Heifers selected for the Programme:

Sl.	ID No.	Age	Breed	Blood level	ID no of Dam	ID no of Sire
1						
2						
3						

I, ……. bearing ID Card No. ……. from Village…… House No……..Thram No. ……

Geog……. Dzongkhag…….. enter into the contract with the Breeding Program for the production of pure/ cross-bred bulls as per the above terms and conditions mentioned therein.

Dated Signature of the farmer…… (Affix Legal Stamp)

Name & Signature of the CBPP in charge ……

Dated Signatures of;

……	……..	……..
NLBP Representative	**Gup**	**DLO**

B. For Contract Horse Production

The following terms and conditions should be fully understood and agreed upon by the different agency involved in its implementation, namely the Contract Horse Breeder (CHB),

the National Horse Breeding Programme (NHBP), the Dzongkhag Livestock Officer (DLO), the CHB in-charge and the *Gup*.

1. Selection of Farmers for Contract Horse Production Programme (CHPP) & Support

1. The CHB Manager is responsible for the identification of potential pockets and animals to be parts of the CHPP and also responsible for the identification of animals which are fit to be part of the programme. Once the breeders are identified s/he should be given a full account of the programme as per his/ her capacities (or incapacity).
2. NHBP is responsible for the final selection and/or removal of animals from the CHBP.

2. Supply & use of breeding materials (Stallions)

1. The NHBP shall in consultation with the NLBP supply the Stallions
2. The govt. supplied breeding materials shall not be sterilized until the advice or the concerned Dzongkhag/ the Breeding Programme.
3. The CHB (CHBP FARMER) is responsible for:
    a. The detection of the mares in heat.
    b. Bringing the mare to the stallion on time for natural service.
    c. Keeping away any scrub stallion from the mare at the time when she is in heat.

3. Record keeping

1. The Contract Stallion keeper shall keep all the records of mating and progeny born out of the services and disseminate the information to the concerned LEA on monthly basis.
2. The following measurements of the foal should be made (in centimetres) with a measuring tape:
    a. Girth
    b. Body length
    c. Height at withers
3. The concerned LEA shall record the progenies born out of supplied Stallion of his area with proper identification.

4. Procurement & distribution of the Programme born stallion

1. The programme born horse stallion shall be procured by the breeding programme/ NHBP for further distribution to other farmers or district as per demand.
2. The procurement of stallion shall base upon the following;
    a. If the progeny is born of government supplied stallion.
    b. If Stallion fulfils the standard body measurement and certified fit for breeding.
    c. If phenotypic character match the criteria of a spiti horse.
    d. If free from contagious diseases
3. The procurement age of the male progenies will be between of 18 – 36 months.
4. The procurement cost shall be fixed by the Department.

5. Animal Health, Preventive Measures

1. The govt. supplied rams shall be regularly dewormed by the authorized staff,
2. In case of death or disease outbreak, the breeding programme has to be informed.

6. Agreement

The contract Horse Breeder shall have a formal agreement indicating his/ her roles and responsibilities (Appendix III)

I, ……. bearing ID Card No. ……. from Village…… House No……..Thram No. ……

Geog…….. Dzongkhag…….. enters into the contract with the Breeding Program and NHBP for Stallion production as per the above terms and conditions mentioned therein.

Dated Signature of the farmer…… (Affix Legal Stamp)

Name & Signature of the CHPP in charge ……

Dated Signatures of;

……	**……..**	**……..**
NLBP/ NHBP Representative	**Gup**	**DLO**

C. For Contract Ram Production

The following terms and conditions should be fully understood and agreed upon by the Contract Ram Producer (CRP), the concerned Dzongkhag Livestock Officer (DLO), the CRPP In-charge and the *Gup* for its effective implementation.
The interested farmers wishing to enter in the contract production with the govt. should seek the breeding materials through concerned Dzongkhag Officials.

1. Selection of Farmers for Contract Ram Production Programme (CRPP) & Support

1. The Dzongkhag Livestock extension staffs are responsible for the identification of the interested farmers having fluent capacity to be part of CRPP and also responsible for

the identification of farm site, the market outlet for piglets and prepare production plan according to the Dzongkhag demand.

2. NLBP/ National Sheep Breeding Centre (NSBC) and Dzongkhag extension staffs will provide regular technical backstopping and follow-up.

2. Supply & use of breeding materials (Rams)

1. The breeding programme shall in consultation with the NSBC supply the Rams
2. The govt. supplied breeding materials shall not be sterilized until the advise or the concerned Dzongkhag/ the Breeding Programme.

3. Record keeping

1. The contract Ram keeper shall keep all the records of mating and progeny born out of the services and disseminate the information to the concerned LEA on monthly basis.
2. The concerned LEA shall record the sheep population of his area with identification tag.

4. Procurement & distribution of the Programme born Rams

1. The programme born rams shall be procured by the breeding programme/ NSBC for further distribution to other farmers or district as per demand.
2. The procurement age shall be between 15 – 24 months
3. The procurement cost shall be fixed by the Department.

5. Animal Health, Preventive Measures

1. The govt. supplied rams shall be regularly dewormed and vaccinated by the authorized staff,
2. In case of death or disease outbreak, the breeding programme has to be informed.

6. Agreement

The contract Ram Breeder shall have a formal agreement indicating his/ her roles and responsibilities (Appendix III)

I, ……. bearing ID Card No. ……. from Village…… House No……..Thram No. ……

Geog…….. Dzongkhag…….. enter into the contract with the Breeding Program and NSBC for ram production as per the above terms and conditions mentioned therein.

Dated Signature of the farmer……(Affix Legal Stamp)

Name & Signature of the CRPP in charge ……

Dated Signatures of;

……	……..	……..
NLBP/ NSBC Representative	**Gup**	**DLO**

D. For Contract Piglet Production

The following terms and conditions should be fully understood and agreed upon by the Contract Piglet Producer (CPP), the concerned Dzongkhag Livestock Officer (DLO), the CPPP In-charge and the *Gup* for its effective implementation.
The interested farmers wishing to enter in the contract production with the govt. should seek the breeding materials through concerned Dzongkhag Officials.

7. Selection of Farmers for Contract Piglet Production Programme (CPPP) & Support

1. The Dzongkhag Livestock extension staffs are responsible for the identification of the interested farmers having fluent capacity to be part of CPPP and also responsible for the identification of farm site, the market outlet for piglets and prepare production plan according to the Dzongkhag demand.
2. NLBP and Dzongkhag extension staffs will provide regular technical backstopping and follow-up.

8. Supply & use of breeding materials (Gilts/Young Boars)

1. The breeding programme shall in consultation with the concerned central Farm supply the quality gilts and young boars on payment of subsidized cost fixed by the Government.
2. All the gilts and young boars supplied will be taken into herd book of the farmer.
3. the govt. supplied breeding materials shall not be sterilized and fattened until the advise or the concerned Dzongkhag/ the Breeding Programme.

9. Record keeping on Daily Gain (DG) and Feed Conversion Ratio (FCR)

1. The quantity of feed fed has to be recorded daily by the farmer.
2. Once farrowed the weighing of the piglets will be done till they are supplied to other interested farmers. The weighing of piglets are to be carried out weekly or monthly through entrusted staff and their records maintained.
3. The DG and FCR are to be calculated monthly by the breeding programme based on above record

10. Distribution of the programme born piglets

1. The quality piglets shall be distributed to other interested buyers/farmers on payment at par with Government Farm rate.
2. The piglets shall be distributed at 56 days- 63 days weighing about 10 kg body weight.
3. The piglets with phenotypical defects will not be allowed to distribute but rather they should be culled.

11. Animal Health, Preventive Measures

1. All the piglets/pigs shall be regularly dewormed and vaccinated by the authorized staff,
2. In case of death or disease outbreak, the breeding programme has to be informed.

12. Training

1. All farmers participating in the programme shall receive regular training provided by the breeding programme and the Dzongkhag in order to gradually improve their knowledge in pig breeding aspects.

I, ……. bearing ID Card No. ……. from
Village…… House No……..Thram No. ……

Geog……. Dzongkhag…….. enter into the contract with the Breeding Program for piglet production as per the above terms and conditions mentioned therein.

Dated Signature of the farmer……(Affix Legal Stamp)

Name & Signature of the CPPP in charge ……

Dated Signatures of;

……	**……..**	**……..**
NLBP Representative	**Gup**	**DLO**

E. For Contract Chick/ Pullet Production

The following terms and conditions should be fully understood and agreed upon by the Contract Chick/ Pullet producer (CCPP), the concerned Dzongkhag Livestock Officer (DLO), the CCPP Programme In-charge and the *Gup* for its effective implementation.
The interested farmers wishing to enter in the contract production with the govt. should seek the breeding materials (DOC) through concerned Dzongkhag Officials.

1. **Selection of Contract Chick/ Pullet Production Programme (CCPPP) Farmers & Support**
    1. The Dzongkhag Livestock extension staffs are responsible for the identification of the interested farmers having potential to be part of CCPPP and also responsible for the identification of farm site, its market outlet and prepare production plan according to the Dzongkhag demand.
    2. NLBP and Dzongkhag extension staffs will provide regular technical backstopping and follow-up.

2. **Distribution Criteria of Pullets to contracted farmers: -**
    1. The distribution age of the Pullets is between 8 to 9 weeks of age on payment of subsidized cost fixed by the government..
    2. Pullet for distribution should be free of Poultry diseases.
    3. Pullets cost shall be fixed by the government.
    4. The Day Old Chicks (DOC) will be supplied

3. **Rearing of the Chicks**: -

    1. The Chicks should be of RIR or commercial strain (coloured eggs) supplied by the department.
    2. Rearing of the Chicks should be as per the Poultry production guide book provided to the extension agents and farmers.
    3. The Shed should be away from residential area.
    4. Maintain proper sanitary and bio-security.
    5. Keep the predator away from the shed.
    6. The housing should be simple and affordable by the CCPPP farmer.

4. **Record keeping:**
    The CCPP farmers should keep the following record on daily basis: -
    1. Feed & Feeding regime.
    2. Vaccine used & Vaccination schedule
    3. Mortality record.
    4. If possible lighting provision as well.

5. **Health & preventive measure:-**
    1. It is the responsibility of the CCPPP in-charge to vaccinate and deworm all the chicks until the age of distribution.
    2. In case of diseases outbreak or death of Chicks/Pullets under the CCPPP, the concerned farmers must report the case to the CCPP in-charge for timely follow up.

6. **Sale of Chicks from the contracted farmers**
    1. The sale of chicks from the CCPPP is possible either directly to the other interested farmers or through the Department on full cost payment. However, the procurement by the department shall depend on farmers' demand and advance deposit by the interested farmers.
    2. The chicks for sale should be free from contagious and infectious diseases.

7. **Fixing the Price of Pullets: -**
    1. The fixing of price for the Pullets will be done by the Department

.

8. **Training: -**

    1. The Selected Farmers shall be given training on Pullet management before the start of the programme
    2. NLBP representative, DLO and concerned lec In-charge will impart training as and when required to the CCPPP farmers on;.
        a) Recording keeping.
        b) Feeding & housing
        c) Poultry disease prevention and control measures.
        d) And any other relevant subjects

I, ……. bearing ID Card No. ……. from Village…… House No……...Thram No. ……

Geog…….. Dzongkhag…….. enter into the contract with the Breeding Program for Chick & Pullet production as per the above terms and conditions mentioned therein.

Dated Signature of the farmer……(Affix Legal Stamp)

Name & Signature of the CCPPP in charge ……

Dated Signatures of;

……	**……..**	**……..**
NLBP Representative	**Gup**	**DLO**

Appendix – VII: Requirements for the Import of Mithun from India

1. A health certificate in English signed by a full-time authorized veterinarian of the government of the exporting country should accompany the animals stating:-

    1.1) Number, age and color of the animals
    1.2) Animal identification
    1.3) Name and address of the owner/exporter and identification of the premises of origin
    1.4) Certification of conditions mentioned under the sl. no (3) to (9).

2. The additional conditions to be met on quality of Mithun imported for breeding purpose are as follows
    2.1 No physical abnormalities should be present.
    2.2 Should conform to Mithun characteristics such as thicker quarter with white stocking, break-up dewlap, broad forehead, stumpy horn shape.
    2.3 Should have proper shape, size and functioning reproductive organs.
    2.4 Should have proper growth as per age.
    2.5 Should not have close ancestral relationship.
    2.6 Must be examined for breed-ability.

3. The animals must come from an area in which animal diseases are under control. They must be healthy, free from signs of any infectious and contagious diseases including ectoparasitism on the day of exporting and are fit for transportation.

4. The state/region of origin is free or provisionally declared freedom from Rinderpest

5. The region/zone of origin has been free from Foot-and-mouth disease for at least 3 (three) months prior to export of animals *and animals must be vaccinated against Foot and Mouth disease at least 21 days prior to export.*

6. The animals must originate from an area where no clinical signs or evidence of Bovine Malignant Catarrh and Johne's disease has been found during the past 3 (three) years prior to export.

7. The animals must originate from an area where no clinical signs or other evidence of Bovine Ephemeral Fever, Visicular Stomatitis, Bluetongue, Enzootic Bovine Leukosis, Infectious Bovine Rhinotracheitis/ Infectious Pastular Vulvovaginitis (IBR/ IPV), Bovine Viral Diarrhoea/ Mucosal Disease (BVD/ MD), Tuberculosis, Brucellosis, Leptospirosis was found during the past 12 (twelve) months prior to export.

8. The animals must originate from premises where no clinical signs, or other evidence of Anaplamosis, Babesiosis, Theileriosis, Trypanosomiasis Mycoplasmosis, Campylobacter fetus and Trichomonas foetus infection was found during 12 (twelve) months prior to export.

9. The animals must be treated with approved broad-spectrum anthelmintic and external parasites shortly prior to export.

10 The vehicle and containers used for transporting the animals must be thoroughly cleaned and disinfected just prior to loading and must comply with the OIE standards applicable to transport for live animals as laid down in the relevant articles.

11 No ruminants or other animals with not similar health status, animal feed or fodder is allowed to be taken on board of the vehicle after they leave the country of origin

12 Failure to follow the import procedures or failure of the animals to meet all the conditions may result in returning the animals to the country of origin or being destroyed without compensation.

ANNEXURE – II: STANDARDS OF LABORATORY FOR COLLECTION AND PROCESSING OF SEMEN

General consideration

The purposes of official sanitary control of semen production are to:

1. Maintain the health of animals on semen production center or unit at a level which permits the international distribution of semen with a negligible risk of infecting other animals or humans with specific pathogenic organisms that can be transmitted through semen;
2. Ensure that semen is hygienically collected, processed and stored.

Part A . Bovine semen

1. Conditions applicable to semen production centre or unit

1.1. The semen production centre or unit shall comprise of:
   a) Accommodation areas for bulls used for semen production (including one isolation facility for sick animals), bull waiting yard and a semen collection room. These two premises are hereon designated pre-requisite for semen production.
   b) Semen processing laboratory and semen storage and dispensing room.
   c) Administration offices.

A *quarantine station* may also be attached to the centre provided that it is on a different location from that of part (a) and (b) of section 1.1.

2. Conditions applicable to semen processing area

2.1. The semen production unit should include separate and distinct areas for accommodating complete health tested resident bulls, bull waiting yard, semen collection yard, feed store, silage pit and isolation of disease suspected bulls.

2.2. Only animals associated with semen production should be permitted to enter the semen production area. All animals meant for semen production must meet the minimum health requirements for donor animals as prescribed by the Ministry.

2.3. Animals should be adequately isolated to prevent the transmission of disease from farm livestock and other animals. Measures should be in place to prevent the entry of wild animals.

2.4. Personnel at the unit/ centre should wear special protective clothing and footwear at all times while in the semen processing unit to preclude introduction of pathogenic organisms.

2.5. Visitors to the semen collection facilities should be kept to a minimum and visits should be subject to formal authorization and control. Equipment for use with the livestock in the semen processing area should be disinfected prior to entry.

2.6. Vehicles used for transport of animals to and from the semen production unit should not be allowed to enter the premises.

2.7. The housing for animals and semen collection areas should be cleaned and disinfected at regular interval.

2.8. Fodder introduction and manure removal should be done in a manner which posses not significant animal health risks.

3. Conditions applicable to semen processing laboratories

3.1. A proper bio-security must be maintained at the semen processing laboratory for semen evaluation and processing, semen pre-storage and storage with separate areas for artificial vagina cleaning and preparation. Entry to the laboratory should be prohibited to unauthorized personnel.

3.2. The laboratory personnel should be technically competent and observe high standards of personal hygiene to preclude the introduction of pathogenic organisms during semen evaluation, processing and storage.

3.3. Visitors to the laboratory should be kept to a minimum and visits should be subject to formal authorization and control.

3.4. A laboratory should be constructed with materials that permit effective cleaning and disinfection.

3.5. A laboratory should be regularly cleaned. Work surfaces for semen evaluation and processing should be cleaned and disinfected at the end of each working day.

3.6. The laboratory should be rodents and insects proof as needed to control pests.

3.7. A storage rooms and individual semen containers should be easy to clean and disinfect.

3.8. Only semen collected from donors bulls having a certified pedigree and health status should be processed in the laboratory.

4. Conditions applicable to donor bulls and teasers animals

4.1. Bulls and teaser animals can enter semen production center only if they fulfill following requirements:

4.1.1 Pre-quarantine testing

Bovine must appear healthy and normal and must comply with the following requirements prior to entry into isolation at the quarantine station or isolation unit prior to entering the semen collection areas.

a) Bovine brucellosis

Bovine kept in a country or zone free from bovine brucellosis, or from a herd officially free from bovine brucellosis and subjected to a serological test for bovine brucellosis with negative results during the 30 days prior to shipment; or

Bovine kept in a herd free from bovine brucellosis and subjected to buffered brucella antigen and complement fixation tests with negative results during the 30 days prior to shipment.

b) Bovine tuberculosis

Bovine subjected to the tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment and come from a herd officially free from bovine tuberculosis; or

Bovine subjected to the tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment and come from a country or zone officially free from Bovine Tuberlcosis

c) Bovine viral diarrhoea-mucosal disease (BVD-MD)

The animal should be subjected to the following test:

A virus isolation test or a test for virus antigen, with negative results;

A serological test to determine the serological status of every animal.

d) Infectious bovine rhinotracheitis-infectious pastular vulvovaginitis(IBR-IPV)

If the artificial insemination center is to be considered as IBR/IPV free, the animals should either:

- Come from an IBR/IPV free herd, or
- Be subjected to a serological test for IBR/IPV on a blood sample with negative results,

4.1.2. Test in the quarantine station prior to entering the semen processing unit

Prior to entering the semen processing unit, bovines must be kept in a quarantine station for at least 28 days. The animals should be subjected to diagnostic tests as described below a minimum of 21 days after entering the quarantine station, except for Campylobacter fetus and Trichomonas foetus, for which testing may commence after at least 7 days in quarantine station, and the result should be negative except in the case of BVD-MD antibody serological testing.

a) Bovine brucellosis

The animals should be subjected to a serological test with negative results.

b) BVD-MD

1. All animals should be tested for viraemia as described in point 4.1.1 c) above.
2. After 21 days in quarantine, all animals should be subjected to a serological test to determine the presence or absence of BVD-MD antibodies.
3. Only if no sero-conversion occurs in the animals that tested sero-negative before entry into the quarantine station, may any animal (seronegative or seropositive) be allowed entry into the semen collection unit.
4. If sero-conversion occurs, all the animals that remain sero-negative should be kept in quarantine station over a prolonged time until there is no more sero-conversion in the group for a period of 3 weeks.

c) *Compylobacter fetus* subsp. venerealis

1. Animals less than 6 months old or kept since that age only in a single sex group prior to quarantine should be tested once on a preputial specimen with a negative result.
2. Animals aged 6 months or older that could have had contact with females prior to quarantine should be tested three times at weekly intervals on a preputial specimen, with a negative result in each case.

d) Trichomonas foetus

1. Animals less than 6 months old or kept since that age only in a single sex group prior to quarantine should be tested once on a preputial specimen with a negative result.
2. Animals aged 6 months or older that could have had contact with females prior to quarantine should be tested three times at weekly intervals on a preputial specimen, with a negative result in each case.

e) IBR- IPV

If the Semen collection center or unit is to be considered as IBR/IPV free, the animals should be subjected to a diagnostic test with negative result on a blood sample. If any animal test positive, these animals should be removed immediately from the quarantine station and other animals of the same group should remain in quarantine and be tested with negative result, not less than 21 days after removal of the positive animals.

4.1.3. Testing for BVD-MD prior to the initial dispatch of semen from each serologically positive bull

Prior to dispatch of semen from BVD-MD serologically positive bulls, semen sample from each animal should be subject to a virus isolation or virus antigen ELISA test for BVD- MD. In the event of a positive result, the bull should be removed from the centre and all of its semen destroyed.

4.1.4. Testing of frozen semen for IBR/IPV in Semen collection center or unit not considered as IBR/IPV free.

Each aliquot of frozen semen should be subjected to a virus isolation test, with negative result.

4.1.5. Testing program for bovines resident in the semen collection facilities

All bovines resident in the semen collection facilities should be tested at least annually for the following diseases, with negative results:

a) Bovine brucellosis
b) Bovine tuberculosis
c) BVD-MD

Animals negative to previous serological tests should be retested to confirm absence of antibodies.

Should an animal become serologically positive, every ejaculate of that animal collected since the last negative test should be either discarded or tested for virus with negative results.

d) *Camplylobacter fetus* **(**subsp. *Venerealis)*

1. A preputial specimen should be cultured.
2. Only bulls on semen production or having contact with bulls on semen production need to be tested. Bulls returning to collection after a lay off of more than 6 months should be tested not more than 30 days prior to resuming production.

e) Trichomonas foetus:

1. A preputial specimen should be cultured.
2. Only bulls on semen production or having contact with bulls on semen production need to be tested. Bulls returning to collection after a lay off of more than 6 months should be tested not more than 30 days prior to resuming production.

f) IBR/IPV

If the Semen collection center is to be considered as IBR/IPV free, diagnostic tests on blood samples for IBR/IPV of all breeding bulls repeated at maximum intervals of 12 months, with a negative result.

5. Conditions applicable to the management of bulls

The objective is to keep bulls in a satisfactory state of cleanliness, particularly of the lower thorax & abdomen.

5.1. Whether on pasture or housed, the bull should be kept under hygienic conditions. If housed, the litter must be kept clean and renewed as often as necessary.

5.2. The Coat of the bull should be kept clean and generally short.

5.3. The Length of the tuft of hairs at the preputial orifice, which is invariably soiled, should be cut to about 2 cm. The hair should not be removed altogether because of its protective role. If cut too short, irritation of the preputial mucus may result.

5.4. The animal should be brushed regularly and where necessary on the day before semen collection paying special attention to the underside of the abdomen.

5.5. In the event of obvious soiling, there should be careful cleaning with soap or a detergent of the preputial orifice and the adjoining areas followed by thorough rinsing and drying.

5.6. When the bull is brought to the collection area, the technician must make sure that the bull is clean and that it is not carrying any excessive litter or particles of feed on its body or its hooves for such materials are always heavily contaminated.

6. Conditions applicable to the collection of semen

6.1. The floor of the mounting area should be easy to clean and to disinfect. A dusty floor should be avoided.

6.2. The hindquarters of the teaser, whether a dummy or a live teaser animal must be kept clean.

6.3. Before actual collection, bull should be allowed one or two false mount for sexual stimulation.

6.4. The hand of the person collecting the semen must not come in contact with the bull's penis. Disposable gloves should be worn by the collector and changed for each collection.

6.5. The Artificial Vagina must be cleaned completely after each collection; it should be dismantled, its various parts washed, rinsed and dried and kept protected from dust; the inside of the body of the device and the cone should be disinfected before reassembly using approved chemical or method such as the use of 70% ethyl /or 98-99% isopropyl, ethylene oxide or steam. Once reassembled, it should be kept in a cupboard, which is regularly cleaned and disinfected.

6.6. The lubricant used should be clean. The rod used to spread the lubricant must be clean and should not be exposed to dust between successive collections.

6.7. The Artificial Vagina should not be shaken after ejaculation, otherwise lubricant and debris may pass down the cone to join the contents of the collecting tube.

6.8. When successive ejaculates are being collected, a new artificial vagina should be used for each mounting. The A.V. should also be changed when the bull has inserted its penis without ejaculation.

6.9. The Collecting tubes should be sterile and either disposable or sterilized by autoclaving or heating in an oven at 180o c for at least 30 minutes. They should be kept sealed to prevent exposure to the environment while awaiting use.

6.10. After Semen collection, the tube should be left attached to the cone and within its sleeve until it has been removed from the collection room for transfer to the laboratory.

7. Conditions applicable to frozen semen production in the laboratory

7.1. Diluents preparation

7.1.1. All receptacles used should be sterilized.

7.1.2. Buffer solution employed in diluents preparation on the premises should be sterilized by filtration or by autoclaving (121^{o}c for 30 minutes) or be prepared using sterile water before adding egg yolk and antibiotics.

7.1.3. If the constituents of diluents are supplied in commercially available powder form, the water used must be distilled or dimeneralised, sterilized (121^{o} c for 30 minutes or equivalent) stored correctly and allowed to cool before use.

7.1.4. When egg yolk is used, it should be separated from egg albumen using aseptic techniques. Alternatively, commercial egg yolk prepared for human consumption or egg yolk treated by for example pasteurization or irradiation to reduce bacterial contamination may be used.

7.1.5. Diluents should not be stored for more than 72 hours at +5° c before use. A longer storage period is permissible for storage at -20°c. Storage vessels should be stoppered.

7.1.6. A mixture of antibiotic should be included with a bactericidal activity at least equivalent to that of the following mixtures in each ml of frozen semen produced: either gentamicin (250 μg), tylosin (50 μg), lincomycin-spectinomycin (150/300 μg), or penicillin (500 IU), streptomycin (500 IU). The names of the antibiotic added and their concentration should be stated in the international veterinary certificate.

7.2. Semen evaluation, processing and packaging

7.2.1. The tube containing freshly collected semen should be sealed and kept in the water bath of temperature ranging from 37 + 1°C until evaluation, dilution and processed. The evaluation of semen (visual & microscopical) should not take more than 5 minutes;

a) Visual examination; reading the volume, colour and presence of foreign bodies is done immediately after the collection.

b) Microscopical examination; mass activity, initial motility, concentration.

7.2.2 Dead percentage of freshly collected semen during evaluation should not exceed 30%. Similarly major and minor abnormalities should not exceed more than 20 and 30 % respectively.

7.2.3. The mass activity should be minimum scale of 2 (1-good, 2 – very good, 3- excellent) and initial motility of minimum 60% shall be accepted for processing.

7.2.4. After the evaluation add equal volume of extender to the fresh semen until the final concentration is worked out using standard procedure. The final dilution should be worked out at minimum of 20 x 106 spermatozoa per straw.

7.2.5. After dilution and during refrigeration the semen should also be kept in a stoppered container.

7.2.6. During the course of filling, receptacles such as semen straws and other dispatch items should be used immediately after being unpacked. Materials for repeated use should be sterilized with alcohol, ethylene oxide, steam or other approved sterilization techniques.

7.2.7. If sealing powder (pvc) is used care should be taken to avoid its contamination.

7.2.8. The filled and sealed straws, after equilibration of the straws at 4°C, should be LN2 vapour freezed at -80 to -90 °C for 10 minutes before plunging in liquid nitrogen.

7.2.9. The minimum post thaw motility (PTM) fit for storage and distribution should be 40%.

7.3. Storage, quarantine and distribution of frozen semen

7.3.1. Only semen having minimum of 40% PTM should be stored.

7.3.2. Before distribution the frozen semen should undergo a quarantine period of 1 month during which microbial load is studied in the batch of semen using standard procedure. During the quarantine period all semen which do not fulfill the required standard should be discarded.

7.3.3. Semen for distribution should be stored in liquid nitrogen in LN2 containers. Semen straws in the goblet should be code marked for records and identification.

Part B. Small ruminant semen

1. Conditions applicable to semen processing centre

1.1. The centre should be under the direct supervision of a veterinarian approved by the Department of Livestock.

1.2. The centre should be built so as to ensure total isolation, thus preventing any contact with animals on the outside, and so as to facilitate cleaning and disinfection of the various installations. Each centre should comprise at least the following distinct installations;

a) Housing and isolation of animals

b) Semen collection room or mounting area
c) Room for cleaning, disinfection and storage of artificial vaginas
d) Laboratory where the semen is prepared, which should contain separate facilities for cleaning and sterilization (glassware, etc);
e) Storage room
f) Room for the distribution of semen.

1.3. Only personnel at the centre and the veterinary authority are permitted to enter installations were animals are housed or the laboratory area; no other person may do so unless authorized and supervised by the centre veterinarian. The personnel shall not enter the animal section or the laboratory section without first removing outdoor clothing and putting on clothing which is specific to each section. Only animals having attained a health status equivalent to that of the population of the centre (see below) shall be allowed to enter the centre. Any vehicles used for their transport must remain outside. No vehicle or material from outside the centre shall be allowed within the closed area of the animal section, other then new materials to be used exclusively within the centre.

1.4. Semen processing centre situated in areas where viral vector-borne diseases occur should be constructed and managed in such a way that the animals are protected from vectors, or semen collection should take place only during seasons when the vectors are at low level of activity.

1.5. The semen processing centre must be subjected to regular inspection at least once a year by the official BAFRA.

1.6. They must be supervised so as to ensure that only sheep and goat with the required health status are housed therein and that only authorized personnel may enter, after passing through a suitable cloakroom area.

1.7. A register shall be maintained containing the information of each animal's identification, its date of birth, date of entry, date of departure or death, breed and all the diagnostic test results, vaccination and treatment carried out.

1.8. The good condition of the animals and the mounting area including hygiene of the premises must be maintained well.

2. Conditions applicable to the introduction of donor animals.

2.1. Only duly identified animals from an approved quarantine station are authorized to enter the centre. These animals should have spent a minimum of 30 days in the quarantine station where they should not be in contact with any animal.

2.2. The animals should originate from flocks which are not subjected to any movement restrictions on health grounds. The flocks must have been free from disease that are notifiable, free or officially free from caprine and ovine brucellosis and free from clinical signs of the following diseases:
a) Contagious agalactia (Mycoplasma agalactiae), for at least 6 months;

b) Peste des petits ruminants, Contagious caprine pleuropneumonia, Caseous lymphadenitis and Ovine epididymitis, for at least 12 months;
c) Paratuberculosis, for at least 2 years;
d) Scrapie, Pulmonary adenomatosis and Maedi-visna or Caprine arthritis/encephalitis (CAE), for at least 3 years.

2.3. During quarantine, the animals must be subjected to clinical examination, in particular to check the integrity of their reproductive organs and their good health status. The results of the microscopic examination of their semen must be compatible with artificial insemination usage. Authorization should not be given for the dissemination of semen collected in the quarantine station.

2.4. The animals must be subjected to following diagnostic tests with negative results in countries considered affected;
a) for tuberculosis (for goat only), single for comparative tuberculin test;
b) for caprine and ovine brucellosis, buffered antigen test coupled with complement fixation test;
c) for ovine epididymitis, a complement fixation test coupled with culture of a semen sample;
d) for maedi-visna or CAE, a serological test;
e) for Border disease, a virus isolation test;
f) for contagious caprine pleuropneumonia (for goats only), a serological test;
g) for blue tongue, a serological test.

2.5. Animals leaving a quarantine station for a semen processing centre must be free from any clinical signs of disease and must originate from quarantine station which meets the following condition on the day of departure:
a) be situated in the centre of a 10 km zone in which there has been no case of foot and mouth disease and Peste des petits ruminants for at least 30 days;
b) be free form notifiable disease of the species concerned.

3. Testing programme for donor animals

All animals housed in Semen processing centre shall undergo, with favorable results, the following examinations and controls at least twice a year:

3.1. Clinical examination, with particular attention given to the reproductive organs (testicular and epididymal palpation);

3.2. Microscopic examination of semen and examination of any somatic cells present; in the event of any anomalies, a microbe count with qualitative detection of specific micro-organisms should be carried out;

3.3. Diagnostic tests in countries infected:
a) for caprine and ovine brucellosis;
b) for ovine epididymitis, serological tests coupled with culture of semen sample;
c) for maedi-visna or CAE;

d) for tuberculosis (for goat only), single or comparative tuberculin test;
e) for blue tongue.

Should any of the above tests or examinations give unfavorable results, the accreditation of the centre should be suspended and the animal concerned must be isolated and eliminated as quickly as possible and its semen collected since the date of last negative examination discarded. This semen may be sent to the official veterinary laboratories for further investigation if necessary.

The health status of the remaining animals in the centre should be reviewed and, if relevant, appropriate procedures for restoration of its accreditation should be carried out.

4. Conditions applicable to the collection, processing, packing and storage of semen

4.1. Only semen collected in the centre may be processed therein.

4.2. The collection, handling, packing and storage of semen should be carried out exclusively in the areas set aside for this purpose.

4.3. Any equipment coming into contact with semen or the donor animal during collection, processing or packing must be suitably cleansed, disinfected and sterilized immediately after use.

4.4. Any products of animal origin used in the treatment of semen, including diluents and additives, shall originate from a source free from any health risks, or be treated prior to use to render the products safe.

4.5. Receptacles used for storage and transport must be suitably disinfected and sterilized before the start of any filling operation.

4.6. Where a cryogenic agent is used, this should not have been used previously for other products of animal origin.

4.7. Each individual dose of semen should be clearly marked to enable the date of collection of semen, the identity of the donor animal, and the name of the centre to be easily ascertained, if necessary by means of code.

5. Conditions applicable to trading of semen

Semen intended for trade must fulfill following conditions:

5.1. Semen straws shall be code marked in line with national standards.

5.2. Containers must be sealed before export and accompanied by an international veterinary certificate listing the following contents.

5.2.1. Semen collected in an accredited centre duly supervised as described above, and in which there were no case of foot and mouth disease, peste des petits ruminants within the radius of 10 km during the three months prior to and 30 days following collection;

5.2.2. Semen come from animals which:

a. Spent an uninterrupted period of at least 30 days prior to and 30 days after collection in the centre.

b. Showed no clinical signs of disease during that period;

c. Were not used for natural service during the 30 days prior to collection;

5.3. Have been securely stored, for at least 30 days before shipment, in receptacles which were cleansed, disinfected and sterilized before use and which left the storage place duly sealed.

An international veterinary certificate attesting compliance with the above conditions must accompany the semen, suitably identified, during transport. The names and concentration of antibiotics included in the semen diluent should be stated in the certificate.

Part C: Porcine semen

1. Conditions applicable to semen processing centre

1.1. The centre should be officially approved by the Department of Livestock.

1.2. The centre should be under the sanitary control of BAFRA including the checking of health and welfare of animals at the centre at least every 6 months.

1.3. The centre should be under the overall supervision of the Department of Livestock

1.4. Only swine associated with semen production should be permitted to enter the centre. Other species of livestock may exceptionally be resident on the centre, provided that they are kept physically apart from the swine.

1.5. Swine on the centre should be adequately isolated from farm livestock on adjacent land or buildings for instance by natural or artificial means.

1.6. The entry of visitors should be strictly controlled. Personnel at a centre should be technically competent and observe high standards of personal hygiene to preclude the introduction of pathogenic organisms. Protective clothing and footwear for use only on the centre should be provided.

1.7. Individual semen containers and storage rooms should be capable of being disinfected.

2. Conditions applicable to the introduction of boars

2.1. Boars should enter a semen processing centre if they fulfill the requirements laid down by the BAFRA.

2.2. The semen from boars with genetic defects or associated with genetic defects in near relatives may not be eligible for export.

2.3. Boars must be clinically healthy and physiologically normal and must pass pre-entry tests within the 30 days prior to entry into isolation at a semen processing centre. The prescribed diseases and tests are listed under point 3-testing programme for boars.

2.4. Boars must remain in isolation at the semen processing centre for a period of at least 30 days before being retested to meet the standards listed under the point 3-testing programme for Boars. Boars may enter the stud on the successful completion of these tests and must be clinically healthy.

3. Testing programme for boars

3.1. Definitions

Prescribed tests cover a minimal range of diseases from which all boars on semen processing centre must be free.

Routine tests are tests applied at regular intervals to confirm the continued freedom from disease of the stud.

3.2. Prescribed tests

a) Brucellosis (B. abortus, B. suis)

Boars to give negative results to serological tests.

3.3. Routine tests

Routine tests to be applied at least every 6 months for a & b and every 12 months for c & d.

a) Swine vesicular disease
Boars to give negative results to a serum-neutralization test.

b) Swine fever
Boars to give negative results to enzyme-linked immunosorbent assay and indirect immunofluorescent tests.

c). Enterovirus encephalomyelitis (ex Teschen disease)
Boars to meet certification standards.

d) Vesicular stomatitis

Boars to give negative results to a complement fixation test.

Claims of country freedom from some viral and bacterial infections of swine may be given consideration providing such claims are backed by serological survey data and epidemiological investigation.

4. Optional tests and requirements

Semen processing centre may be required by the BAFRA to include in their veterinary prophylactic programme a number of other diseases, either through vaccination or by requiring negative results to serological tests.

Additionally, some importing countries may require assurances of freedom from a disease (for example: classical swine fever, Aujeszky's disease) based on negative serology or other biological tests. The range of infections to be covered is extensive and beyond the capacity of semen processing centres to support totally. Thus, only optional tests remain to be applied and interpreted by bilateral agreement when importation of semen is being considered.

Records of the progeny of a donor boar should be maintained as far as possible to determine that he is not associated with any genetic defect. The records of the boar should indicate his fertility. The semen must be obtained from a boar with a normal libido.

5. Conditions applicable to diluents

Whenever milk, egg yolk or any other animal protein is used in preparing the semen diluents, the product must be free of pathogens or sterilized; milk heat-treated at 92°C for 3-5 minutes, eggs from disease free flocks when available. The inclusion of penicillin, streptomycin, polymixin etc. is permitted, provided that this is declared in the international veterinary certificate.

6. Conditions applicable to the packing of semen

6.1. The examination of ejaculates, and the dilution and freezing of semen must be carried out in a laboratory maintaining the hygienic standards set by the BAFRA.

6.2. Only semen of a health standard equivalent to that produced in a semen processing centre should be handled.

6.3. The tube containing freshly collected semen should be sealed and kept in the water bath of temperature ranging from 37 $\pm$ 1°C until evaluation, dilution and processed. The evaluation of semen (visual & microscopical) should not take more than 5 minutes;

a) Visual examination; reading the volume, colour and presence of foreign bodies is done immediately after the collection.

b) Microscopical examination; mass activity, initial motility, concentration.

6.4. Dead percentage of freshly collected semen during evaluation should not exceed 30%. Similarly major and minor abnormalities should not exceed more than 20 and 30 % respectively.

6.5. The mass activity should be minimum scale of 2 (1-good, 2 – very good, 3- excellent) and initial motility of minimum 60% shall be accepted for processing.

7. Conditions applicable to trading of semen

Semen intended for trade must fulfill following conditions:

7.1. Semen straws shall be code marked in line with national standards.

7.2. Containers must be sealed before export and accompanied by an international veterinary certificate listing the following contents.

7.2.1. Semen collected in an accredited centre duly supervised as described above, and in which there were no case of foot and mouth disease, peste des petits ruminants within the radius of 10 km during the three months prior to and 30 days following collection;

7.2.2. Semen comes from animals which:

a. Spent an uninterrupted period of at least 30 days prior to and 30 days after collection in the centre.

b. Showed no clinical signs of disease during that period;

c. Were not used for natural service during the 30 days prior to collection;

7.3. Have been securely stored, for at least 30 days before shipment, in receptacles which were cleansed, disinfected and sterilized before use and which left the storage place duly sealed.

An international veterinary certificate attesting compliance with the above conditions must accompany the semen, suitably identified, during transport. The names and concentration of antibiotics included in the semen diluent should be stated in the certificate.

ANNEXURE – III: STANDARDS OF CONSTRUCTION AND OPERATION OF DESGINATED FARM

1. Location of the farm

Livestock farms should be constructed in a way that permits perfect isolation of animals and birds and shall operate under a regime of strict quarantine, including the following:

1.1. Due to potential bio-hazard risks, the farm shall be located on the outskirts of the town avoiding congested residential areas.

1.2. The farm location must be at least 100 meters away from national high way and public access feeder road along with a boundary wall to prevent transmission of diseases.

1.3. It must have an easy access to a high way by having a motorable road round the year, for easy transport of farm inputs and outputs.

1.4. The farm areas shall not be low lying, water logging and there shall be quick drainage of rainwater from the premises.

1.5. The farm areas shall be such that drainage water or effluent from village, town, factory and other farms doesn't enter the farm premises.

1.6. Farm shall be preferably established in a virgin soil where other farms were not there before.

1.7. Adequate drinking water of acceptable quality shall be made available in the premises.

1.8. Reliable electricity facilities shall be available.

2. Farm buildings and design

2.1. The design of the livestock/poultry sheds, their dimensions and floor space requirement shall be as specified under Annexure –V as prescribed by the Ministry of Agriculture.

2.2. Farm building shall be located in a carefully selected site, preferably in elevated areas where land is available around the perimeter for future expansion.

2.3. The farm areas shall be fenced properly to avoid trespassing with only one entry and exit gate; the gate shall be normally closed and permanently watched.

2.4. A main gate of 12-15 feet width for vehicles and a side gate of 3-4 feet for persons shall be provided.

2.5. At the entry of main and side gates, wheel dip (12'X12') and foot bath (3'X3') have to be provided which has to be filled with disinfectant lotions like 2% phenyl to sanitize wheel and feet.

2.6. For large size farm, workers and owners quarters may be constructed in the farm premises for efficient farm operation.

2.7. The residential quarters and watchman's cabin shall be nearer to the entrance of the farm; while the farm shall be located interiorly preferably with separate entrance for each.

2.8. There shall be disinfectant basin placed at entry of all buildings or areas where animals are kept or where feed and equipment are stored.

2.9. If more than one animal sheds or pens are constructed, distance between the animal/ poultry houses constructed shall be a minimum of 15 metres.

2.10. For poultry houses the minimum distance between any two poultry houses shall be three times the height of poultry house at ridge.

2.11. The orientation of houses shall take advantage of locally prevailing wind, airflow pattern and solar heat transfer.

2.12. There shall be effective and safe means to control vermin, insect and frequent cleaning and disinfecting of animal houses.

2.13. Floor shall be smooth and have a continuous joint with walls to facilitate disinfection and cleaning.

2.14. At the entry and outside walls of livestock farms there shall be noticeable poster/ signboard stating that entry is prohibited, mentioning penalties due for unauthorized entry.

3. Feed storeroom

3.1. The storeroom shall be rodent proof, leak proof and seepage proof.

3.2. If feed is prepared in the farm, sufficient space shall be provided to store the feed ingredients, composite feeds and to accommodate feed grinder or mixer etc.

4. Manure pit

4.1. A manure pit of about one meter depth shall be located at the corner of the farm and at least 30 metres away from the nearest farm house and drinking water sources.

4.2. The manure pit must be in an area lower than that of rest of the farm building so that contaminated rainwater will not flow from the manure pit towards livestock/ poultry sheds or pens.

4.3. The size of manure pit shall depend on the farm size and frequency of disposal of manure.

5. Drainage and septic tank

5.1. The animal sheds shall have open drainage system and appropriate size septic tank for collecting wastewater and sewage.

6. Incinerator and biological pit

6.1. All medium and large farms shall have an incinerator (electrical or wood/litter fired) or biological pit preferably the former for safe disposal of carcass of dead animals/birds.

6.2. Smaller farms where incinerator and biological pit are not available biological waste and carcass of dead animals/birds shall be buried deep or burnt.

6.3. The biological pit wall shall depend on the volume of material expected to be put in it. But it must be circular in cross section with diameter of 2–3 metres and a depth of 4–6 metres.

6.4. Only biological material shall be added and not chemicals such as disinfectant or antibacterial to the biological pit as this will delay biological breakdown.

6.5. Fencing shall be constructed around waste disposable area to reduce risk.

7. Other safety facilities

7.1. There shall be a veterinary dispensary for use only inside the livestock farm.

7.2. For safety in farm, every farm shall have first aid kit for worker consisting of eye bath, antiseptic cream/ liquid, assortment bandage and plasters.

8. Visitors to the farm

8.1. Person other than the regularly employed staff shall normally not be allowed entry to the livestock farms.

8.2. If for technical or other valid reasons a visitor must be received, such visitor shall be subject to the same precaution measures as the staff, and shall not enter more animal house than necessary for the purpose of the visit.

8.3. The visitors shall dip their feet in the footbath provided before entering farm and animal/bird sheds.

8.4. Visitors immediately upon entry shall change their shoes against high rubber boots/slippers, which are the property of the establishment and may be used only within the livestock farms.

8.5. The visitors further shall be obliged to dress in protective garments which may not be used outside the establishment.

8.6. Veterinary Officers visiting the livestock farm on official duty shall not enter any other farms or establishment before such visit. In case of such visit the veterinarian shall change his/her shoes, clothing and thoroughly wash and disinfect his/her hands prior to entry into animal sheds/pen.

8.7. Under all circumstances during periods of disease outbreaks in the vicinity, visitors shall be restricted from entering the farm except for the official purpose and under special circumstances.

9. Stray animals/birds

9.1. No animals/birds other than those kept in the farm shall be permitted to enter the farm.

10. Management and disease control at the farm

10.1. Feed, bedding, litter, equipment and other materials used in the livestock farms shall be subject to suitable treatment as and when required.

10.2. The livestock and poultry houses shall have proper ventilation to prevent disease associated with it.

10.3. Farm shall practice proper sanitation and remove faeces as often as practicable.

10.4. The animals and birds shall receive regular vaccination and other prophylactic treatment according to the farm management schedule. Whenever necessary, the animals and birds shall also receive immediate therapeutic treatments.

10.5. There shall be facilities for isolation of diseased and calving animals.

10.6. Cattle should be regularly tested for Tuberculosis, Brucellosis, Infectious Bovine Rhinotracheitis (IBR) and poultry for Infectious Bursal Disease (IBD), New Castle Disease and Pullorum disease, and pigs for tapeworm and swine fever.

11. Welfare aspects

11.1. Housing, feeding, castration etc shall be carried out taking into consideration the animal welfare standards.

11.2. Farm shall provide adequate housing space; feed and water.

11.3. Farm shall provide rapid diagnosis and treatment facilities for treatment of sick and injured animals.

11.4. Animals shall not be subjected to inhuman treatment.

12. Environment pollution

12.1. The livestock farm shall take all precautions to prevent environmental pollution.

12.2. Biological waste shall be disposed off carefully to prevent pollution of local water supply.

12.3. Manure slurry must not drain into open ponds for digestion as it yields methane gas incriminated for green house effect.

ANNEXURE – IV: PROTOCOL FOR IMPORTATION OF DOGS AND CATS INTO BHUTAN

I. Any individual, agency or company wishing to import dogs and cats into the Kingdom of Bhutan should apply for import permit to the Bhutan Agriculture and Food Regulatory Authority (BAFRA), Ministry of Agriculture. The application for import permit should reached the office of BAFRA at least one month before the scheduled date of entry of dogs and cats into Bhutan.

II. The application for import permit must provide full details of the animal such as date of birth, sex, breed, color, type of coat and identification marks and the animal must be correctly identified with electronic microchip or tag at the time of entry.

III. The animal must be accompanied by the zoosanitary certificate signed by the official veterinarian certifying that:

1. The animal is free from clinical signs or symptoms of infectious or contagious disease and fit to travel within 48 hours.
2. The animal has been vaccinated against rabies, canine distemper, parvovirus, infectious canine hepatitis and *Leptospira interrogans* Canicola and *Leptospira interrogans* Icterohaemorrhagiae. The vaccinations should be done at least one month before the date of entry except for rabies.
3. In the case of primary rabies vaccination, the animal has been vaccinated with inactivated rabies vaccine not less than 6 months and not more than 1 year prior to the date of entry. In the case of booster vaccination, the animal should have been vaccinated not more than 1 year prior to its entry.
4. The animal has been subjected to neutralizing antibody titration test for rabies virus and the serum must contain at least 0.5 International Units (IU)/ ml. The test must have been carried out not less than 3 months and not more than 24 months prior to the date of entry.
5. The animal has been treated with broad-spectrum endo-parasiticidal and ectoparasiticidal drugs at least one week before the date of entry and must be free of ectoparasites upon entry.
6. The animal must not be more than 42 days pregnant at the date of departure.
7. The animal must be weaned. In the case of any animals accompanied by their mother, the animals must be at least 6 weeks old at the date of departure.
8. The zoosanitary ceritificate should be written in English.

IV. The following requirements must be met while transporting the animal to Bhutan:

1. If transported by air, the animal must be carried in an approved container that meets the International Air Transport Association (IATA) standards.
2. The container must be nose and paw proof with ventilation openings of such size that it is impossible for the animal to protrude its nose or paws outside the container.
3. Only soft board and new or cleaned cloths may be used. The use of straw or hay as bedding is not permitted.
4. The container must be new or thoroughly cleaned prior to use and must be free of dirt and ticks.

V. Upon entry in Bhutan, the animal must be declared and presented to the Quarantine Inspectors for examination along with necessary documents.

VI. The following biosecurity clearance procedures shall be followed:

1. The Quarantine Inspector will examine the consignment and accompanied documents on arrival. If animal is free from clinical signs or symptoms of infectious disease and if animal, bedding, containers used for carrying animal are free of ectoparasites, a biosecurity clearance will be issued without the need for quarantining in the quarantine station.
2. If the documentation is not in order or import requirements are not met or animal is suspected to be diseased or ectoparasites are found either on the body coat, in the bedding or container, the animal shall be placed under observation in the appropriately designed quarantine station for a minimum period of 20 days during which all necessary treatment and sample collection will be carried out at the expenses of the owner.
3. Tourists, expatriates and foreigners visiting Bhutan along with their pets for a limited number of days must keep their pet within the compound of their residence or hotel and must be restrained with a lead while visiting places and should not be allowed to come in contact with local dogs and cats.
4. The owner on their return must take the dogs back. However, if the animal is gifted to anyone residing in Bhutan, it should be notified to nearest office of BAFRA under which circumstances, they will be placed under observation for certain a period.

VII. In all cases, any illness or suspicion of exotic diseases in the imported animal must be reported to the nearest BAFRA office.

VIII. BAFRA official may visit the premises to examine the imported animal at any reasonable time if deemed necessary.

IX. BAFRA may amend these requirements as and when deemed necessary depending on the risk associated with the animal and the disease status of the exporting countries.

ANNEXURE – V: ANIMAL QANRANTINE MANUAL

A. Location and Premises

1. The premises shall be designed and constructed in a manner appropriate to the species of livestock for which the premises are intended.

2. For cattle, sheep, goat, other ruminants and swine they shall as far as possible be located in an adequately isolated area where the likelihood of contact with other animals is minimized.
3. The premises shall be established close to a frontier crossing point, with easy access and in a location where adequate resources are available for supervision of the premises and the quarantined livestock.
4. The premises shall have a double perimeter fence to keep away other domesticated, stray or wild animals with only one entry and exit; the gate shall normally be kept closed and permanently kept under surveillance.
5. The premises should be constructed in such a manner so that they can be easily cleansed and disinfected.
6. The pens or cages shall be of a suitable size as per the animal welfare standards to accommodate each consignment of imported animals separately.
7. Adequate shade, clean water and feedstuffs shall be provided at all times for the animals in quarantine.
8. All necessary measures shall be taken to prevent the introduction of disease by persons, feedstuff, vehicles, equipment or any other thing by the provision of protective clothing and facilities for cleansing and disinfection.
9. Facilities shall be provided to ensure that no waste water, carcasses, fodder, litter milk, dung, manure or other things used in connection with or coming from the animals in quarantine shall be disposed of in such a way as to contaminate the environment or spread disease to other animals.

B. Purpose of Quarantine

1. The primary purpose of quarantine of imported animals is to prevent the introduction and spread of exotic animal diseases by these animals into the country. This is necessary to safeguard the animal population in the country. Although all animals imported into the country have to be certified as healthy and free from infectious and contagious diseases by the Veterinary Authority in the exporting country at the time of export, quarantine measures are still necessary. This is to ensure that any animal incubating a disease, and therefore not showing any signs of the disease, is examined further during the quarantine period.
2. The second purpose of quarantine is to treat newly acquired animals that are infected with diseases or potential disease vectors such as mites.
3. The third purpose of the quarantine is to provide a period of acclimatization to the animals. During this period the animals will be allowed to adapt to the routines of feeding, watering and cleaning.

C. Quarantine Requirements

Quarantine requirements and period of confinement in the quarantine stations differ according to the species of animals, purpose of import and from one country to another. Generally, all animals imported into the kingdom of Bhutan must undergo 15 days of quarantine period except for the pet dogs and cats which has been specifically dealt with.

D. Materials Accompanying Imported Animal

All materials (hay, feed, plastic, bone etc) accompanying an animal shall be disposed in the biological pit after proper disinfection or incinerated as deemed necessary.

E. General Requirements

1. Any individual, agency or company wishing to import animals into the Kingdom of Bhutan for breeding or rearing to be sold to farmers of the specific Dzongkhag must be recommended by the Dzongkhag Livestock Officer/ Department of Livestock. Those wishing to import animals for breeding or rearing to be sold to farmers of different Dzongkhag must be recommended by the Department of Livestock. This is to make sure that the particular breed of animal intended for import is in conformity to the livestock breeding policy of Bhutan.
2. After the recommendation by the Dzongkhag Livestock Officer or the Department of Livestock, the applicant can apply for import permit directly to the BAFRA Head Office or through the Dzongkhag BAFRA Office. The application for import permit should reach the BAFRA Head Office at least 3 weeks before the scheduled date of entry of animals into Bhutan.
3. The application for import permit must provide full details of the animal such as date of birth, sex, breed, colour, coat type or identification marks and the animal must be appropriately identified at the time of entry. The application should also contain the name of the farm owner along with complete address and the contact number.
4. The animal must be accompanied by the zoosanitary certificate signed by the official veterinarian as stated in the import permit.
5. Owner of such animal should inform the respective quarantine station, either in writing, by telephone or fax at least a month (minimum of 7 days) before the animal is expected to arrive in the quarantine station. It is also advisable to book for the quarantine facilities prior to making transport for the arrangement in order to ensure the availability of quarantine space. This can be done while applying for an import permit.
6. Upon arrival of the animals at the entry points, the importer shall declare it to the BAFRA Officials of the concerned Plant and Livestock Quarantine Office of BAFRA who shall inspect the animals and accompanied documents. If any of the conditions prescribed in the import permit is not fulfilled, the animals will not be allowed to enter the country.
7. If the importer has fulfilled all the conditions prescribed in the import permit, the animals shall be allowed to enter the country and admitted to the quarantine station following which the Quarantine Inspector shall flash report to the BAFRA Head Office mentioning the details of the animals and accompanied documents.

8. Owner of such animal may visit their animal during quarantine provided they abide to rules and regulations of the quarantine station. This is important to prevent spread of infectious organism to or from the animal in quarantine.
9. The animal in quarantine may be subjected to such measures as blood test or other clinical tests, vaccination, and therapeutic treatments as deemed necessary by the Quarantine Inspector.
10. The Quarantine Inspector may order an immediate destruction of any animal found or reasonably believed to be infected with exotic disease.
11. The Quarantine Inspector may resort to vaccination and or therapeutic treatment, if the animals are reasonably believed to be infected with or suspected to have been in contact with animals affected with disease which are prevalent in the country. The quarantine period for such batch of animals shall be extended by an Inspector as deemed necessary.
12. After quarantining the animals for a required number of days, analyzing the samples collected from the animals, and if found free of diseases the Quarantine Inspector shall certify them free from diseases and released them.
13. Owner of such animal should continue to observe the health of the animal after quarantine and should report to the nearest office of the Department of Livestock if any infectious disease or any abnormal condition is noticed.
14. All animals imported for immediate slaughter shall be exempted from quarantine provided the animals come with the sanitary certificate as prescribed in the import permit. Such animals must be slaughtered within one week from the date of importation.

ANNEXURE – VI: NOTIFIABLE DISEASES

Disease	Species of animal susceptible
1. Foot and Mouth disease:	Cattle, Buffalo, Yak, Sheep, Goat, Pig and other cloven-hoofed wild animals
2. Rinderpest	Cattle, Sheep, Goat
3. Classical Swine Fever	Domestic and wild pigs
4. Rabies	Cattle, Sheep, Goat, Horse, Pig, Dog, Cat, Others
5. Newcastle disease	Poultry and other birds
6. Infectious Bursal Disease	Poultry and other birds
7. Mareks Disease	Poultry and other birds
8. Anthrax	Cattle, Sheep, Goat, Horse, Pig, and others
9. Black Quarter	Cattle, Others
10. Haemorrhagic Septicaemia	Cattle, Others
11. Glanders	Horses and donkeys
12. Dourine	Horses and donkeys
13. Sheep pox	Sheep and goat
14. Contagious Bovine Pleuropneumonia	Cattle
15. Highly Pathogenic Avian Influenza	Birds and carnivores

ANNEXURE –VII: IDENTIFICATION AND CERTIFICATION OF FOOD ANIMALS

I. Animals imported for immediate slaughter must meet the following requirements

1. All Animals are permanently identified by the brand or tamper-proof ear tag.
2. The animals are accompanied by an approved certificate completed by the Government Veterinarian In-charge of the origin of the animals attesting that:
3. All animals have been clinically examined at least three days before the transport and were found to be in a state of good health, free from obvious signs of infectious and contagious diseases and fit for slaughter.
4. The farm of origin and the area within the radius of ten kilometers there from, is free from outbreak of Rinderpest, Foot and Mouth Disease, Contagious Bovine Pleuro Pneumonia, Haemorrhagic Septicaemia, Black Quarter, Peste des Petits Ruminants, Blue Tongue, Swine Fever, and have been so free during the three months prior to the date of certification.
5. The certificate should provide result of TB and Brucellosis test conducted within a month of shipment.
6. The certificate should also contain the name of the farm owner along with complete address and the contact number.
7. During their movement to the Bhutanese border the animals do not pass through an area in which there is active outbreak of Rinderpest, Food and Mouth Disease, Peste des Petits Ruminents, Blue Tongue, Swine Fever or any other notifiable diseases.
8. The Law of the exporting country permits export of such animals originating from that country.
9. The animals must be slaughtered within one week of arrival at the place of destination.

II. Local animals brought for slaughter must meet the following requirements

1. Any person bringing animals for slaughter shall correctly identify his or her animals by branding or tamper-proof ear tag and shall obtain a letter of authentication from the Gup stating that animals belong to him/her.
2. The authentication letter of the Gup must contain the name of the farm owner along with complete address and the contact number.
3. The person wishing to take his/her animals to abattoir must obtain ***in-country movement permit*** from the nearest BAFRA Office.
4. During the transport of animals to the abattoir, they do not pass through an area in which there is active outbreak of Food and Mouth Disease and other notifiable diseases.

ANNEXURE – VIII: STANDARDS FOR ANIMAL FEEDS AND ESTABLISHMENTS RELATED TO PRODUCTION, STORAGE, AND MARKETING.

1. Requirements of Feed Business at the level of Primary Production

1.1. Feed business operators responsible for primary production shall ensure that operations are managed and carried out in such a way as to prevent, eliminate or minimize hazards with the potential to compromise feed safety, wherever possible taking account, where appropriate, of subsequent processing.

1.2. Feed business operators shall ensure, as far as possible, that primary products produced, prepared, cleaned, packed, stored and transported under their responsibility are protected against contamination and spoilage.

1.3. Feed business operators shall meet the obligations in paragraphs 5.1.1 and 5.1.2 by complying with the control of hazards in primary production, including:

(a) measures to control contamination arising from the air, soil, water, fertilizers, plant protection products, biocides, veterinary medicinal products and handling and disposal of waste, and

(b measures relating to plant health, animal health and the environment that have implications for feed safety including programmes for the monitoring and control of zoonoses and zoonotic agents.

1.4. Feed business operators shall take adequate measures, as appropriate:

(a) to keep clean and, where necessary after cleaning, to disinfect in an appropriate manner facilities, equipment, containers, crates and vehicles used for producing, preparing, grading, packing, storing and transporting feed;

(b) to ensure, where necessary, hygienic production, transport and storage conditions for, and the cleanliness of feed;

(c) to use clean water whenever necessary to prevent contamination;

(d) to prevent, as far as possible, animals and pests from causing contamination;

(e) to store and handle wastes and hazardous substances, separately and securely, so as to prevent contamination;

(f) to ensure that packaging materials are not a source of contamination of feed;

(g) to take account of the results of any relevant analyses carried out on samples taken from primary products or other samples relevant to feed safety.

1.5. Feed business operators shall complete and retain records relating to measures put in place to control hazards in an appropriate manner and for an appropriate period, commensurate with the nature and size of the feed business. Feed business operators must make relevant information contained in these records available to the competent authority.

1.6. Feed business operators must, in particular, keep records on:

(a) any use of plant protection products and biocides ;

(b) use of genetically modified seeds;

(c) any occurrence of pests or diseases that may affect the safety of primary products;

(d) the results of any analyses carried out on samples taken from primary products or other samples taken for diagnostic purposes that have importance for feed safety.

1.7. Other persons, such as veterinarians, agronomists and farm technicians, may assist the feed business operators with the keeping of records relevant to the activities they carry out in the farm.

1.8. Guides to good manufacturing practices shall include appropriate information on hazards arising in primary production and actions to control hazards, including relevant measures set out in national legislation such as:

(a) the control of contamination such as mycotoxins, heavy metals, radioactive material.;

(b) the use of water, organic waste and fertilizers;

(c) the correct and appropriate use of plant protection products and biocides and their traceability;

(d) the correct and appropriate use of veterinary medicinal products and feed additives and their traceability;

(e) the (preparation, storage and) traceability of feed materials;

(f) the proper disposal of dead animals, waste and litter;

(g) protective measures to prevent the introduction of contagious diseases transmissible to animals through feed and any obligation to notify the competent authority;

(h) procedures, practices and methods to ensure that feed is produced, prepared, packed, stored and transported under appropriate hygienic conditions, including effective cleaning and pest-control;

(i) measures relating to record-keeping.

2. Requirements for feed businesses other than at the level of primary production

2.1. Feed processing and storage facilities, equipment, containers, crates, vehicles and their immediate surroundings shall be kept clean, and effective pest control program shall be implemented.

2.2. The lay-out, design, construction and size of the facilities and equipment shall:

(a) permit adequate cleaning and/or disinfection

(b) be such as to minimize the risk of error and with a view to avoiding contamination, cross-contamination and any adverse effects generally on the safety and quality of the products. Machinery coming into contact with feed shall be dried following any wet cleaning process.

2.3. Facilities and equipment to be used for mixing and/or manufacturing operations shall undergo appropriate and regular checks, in accordance with written procedures pre-established by the manufacturer for the products.

(a) All scales and metering devices used in the manufacture of feeds shall be appropriate for the range of weights or volumes to be measured and tested for accuracy regularly.

(b) All mixers used in the manufacture of feeds shall be appropriate for the range of weights or volumes being mixed, and shall be capable of manufacturing suitable homogeneous mixtures and homogeneous dilutions.

2.4. Facilities must have adequate natural and/or artificial lighting.

2.5. Drainage facilities must be adequate for the purpose intended; they must be designed and constructed to avoid the risk of contamination of feeding stuffs.

2.6. Water used in feed manufacture shall be of potable quality for animals; the conduits for water shall be of an inert nature.

2.7. Sewage, waste and rainwater shall be disposed of in a manner which ensures that equipment and the safety and quality of feed is not affected. Spoilage and dust shall be controlled to prevent pest invasion.

2.8. Windows and other openings must, where necessary, be fitted with pest-proof netted screens. Doors must be close-fitting and pest-proof when closed.

2.9. Where necessary, ceilings and overhead fixtures must be designed, constructed and finished to prevent the accumulation of dirt and to reduce condensation, the growth of undesirable moulds and the shedding of particles that can affect the safety and quality of feed.

3. Personnel

3.1. Feed businesses must have sufficient staff possessing the skills and qualifications necessary for the manufacture of the products concerned. An organization chart setting out the qualifications (e.g. diplomas, professional experience) and responsibilities of the supervisory staff must be drawn up and made available to the competent authorities responsible for inspection. All the staff must be informed clearly in writing of their duties, responsibilities and powers, especially when any change is made, in such a way as to obtain the desired product quality.

4. Production

4.1. A qualified person responsible for production must be designated.
4.2. Feed business operators must ensure that the different stages of production are carried out according to pre-established written procedures and instructions aimed at defining, checking and mastering the critical points in the manufacturing process.
4.3. Technical or organizational measures must be taken to avoid or minimize, as necessary, any cross-contamination and errors. There must be sufficient and appropriate means of carrying out checks in the course of manufacture.
4.4. The presence of prohibited feed materials, undesirable substances and prohibited substances and pathogens in relation to human health or animal health shall be monitored, and appropriate control strategies to minimize the risk shall be in place.
4.5. Waste and un-saleable materials should be isolated and identified. Any such materials containing hazardous levels of veterinary drugs, contaminants or other hazards shall be disposed of in an appropriate way and not used as a feed.

5. Quality control

5.1. A qualified person responsible for quality control must be designated.
5.2. Feed businesses must, as part of a quality assurance scheme, have access to a laboratory with adequate staff and equipment to guarantee and check, before the release of the products with a view to putting them into circulation, that they comply with the specifications defined by the manufacturer.
5.3. A quality control plan must be drawn up in writing and implemented, to include, in particular, checks on the critical points in the manufacturing process, sampling procedures and frequencies, methods of analysis and their frequency, compliance with the specifications –and the destination in the event of non-compliance - from processed materials to final products.
5.4. Samples of ingredients and of each batch of products placed on the market or of each specific portion of production (in the case of continuous production) must be taken in sufficient quantity using a procedure pre-established by the manufacturer and be retained in order to ensure traceability (on a regular basis in the case of manufacture solely for the manufacturer's own needs). The samples must be sealed and labeled for ease of identification; they must be stored under conditions which prevent any abnormal change in the composition of the sample or any adulteration. They must be kept at the disposal of the competent authorities for a period appropriate for the use to which the feed are placed in the market.

6. Storage and Transport

6.1. Processed feeds shall be separated from unprocessed feed materials and additives in order to avoid any cross-contamination of the processed feed, and proper packaging materials shall be used.

6.2. Feeds shall be stored and transported in suitable containers. They shall be stored in places designed, adapted and maintained in order to ensure good storage conditions, to which only persons authorized by the feed business operators have access.

6.3. Feeds shall be stored and transported in such a way as to be easily identifiable, to avoid any confusion or cross-contamination and to prevent deterioration.

6.4. Containers and equipment used for transport, storage, conveying, handling and weighing shall be kept clean. Cleaning programmes shall be introduced, and traces of detergents and disinfectants shall be minimized.

6.5. Any spoilage shall be minimized and kept under control to reduce pest invasion.

6.6. Temperatures shall be kept as low as possible to avoid condensation and spoilage.

7. Documentation

7.1. All feed businesses operators, including those who act solely as traders without ever holding the product in their facilities, shall keep in a register records with relevant data comprising purchase, production and sales for effective tracing from delivery or export to the final destination.

7.2. Feed business operators, except those who act solely as dealers without ever holding the product in their facilities, shall keep in a register the following documentation:

(a) Documentation relating to the manufacturing process and controls. Feed businesses must have a system of documentation designed to define and ensure mastery of the critical points in the manufacturing process and to establish and implement a quality control plan. They must keep the results of the relevant controls. This set of documents must be kept so that it is possible to trace the manufacturing history of each batch of products put into circulation and to establish responsibility if complaints arise.

(b) Documentation relating to traceability on:

(i) Additives:

- the nature and quantity of the additives produced, the respective dates of manufacture and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the nature and quantity of the additives delivered and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the nature of the products and the quantity produced, the respective dates of manufacture and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;

- the name and address of the establishments or users (establishments or stock-breeders) to whom these products have been delivered, together with details of the nature and quantity of the products delivered and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture.

(ii) Premixtures:

- the name and address of the manufacturers or suppliers of additives, the nature and quantity of the additives used and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the date of manufacture of the premixture and the batch number where appropriate;
- the name and address of the establishment to which the premixture is delivered, the delivery date, the nature and quantity of the premixture delivered, and the batch number where appropriate.

(iii) Compound feeding stuff/feed materials:

- the name and address of premixture manufacturers or suppliers, the nature and quantity of the premixture used, with the batch number where appropriate;
- the name and address of the suppliers of the feed materials and the delivery date;
- the nature and quantity of feed materials or compound feeding stuffs manufactured, together with the date of manufacture, and the name and address of the buyer (e.g. stock-breeder, other feed businesses).

8. Complaints and Product Recall

8.1. Feed business operators shall implement a system for registering and processing complaints.

8.2. They shall be in a position to introduce, where this proves necessary, a system for the prompt recall of products in the distribution network. They shall define by means of written procedures the destination of any recalled products, and before such products are put back into circulation they must undergo a quality-control reassessment.

9. Good Animal Feeding Practice

9.1. Pasture grazing

The grazing of pastures and croplands should be managed in a way that minimizes the contamination of foods of animal origin by biological and chemical hazards. Where appropriate, an adequate rest period should be observed before allowing livestock to graze on pasture, crops and crop residues and between grazing rotations to minimize biological cross-contamination from manure, where such a potential problem exists, and to ensure that the withholding periods for agricultural chemical applications are observed.

9.2. Stable feeding and batch/intensive unit feeding

9.2.1 The animal production unit should be designed so that it can be easily cleaned. The animal production unit and feeding equipment should be cleaned thoroughly and regularly to prevent any build-up of biological hazards. Chemicals used for cleaning and sanitizing should be used according to instructions and stored away from feed and feeding areas.

9.2.2. A pest control system should be put in place to control the access of pests to the animal production unit with a view to minimizing the possibility of biological contamination of feed and bedding materials or animal units.

9.2.3. Buildings and feeding equipment should be kept clean. Systems should be put in place to regularly remove manure, waste material and other possible sources of biological contamination of feed. Feed and bedding material used in the animal production unit should be frequently changed and not allowed to become mouldy.

9.3. Feeding

9.3.1. Storage

Feed should be stored separately from chemicals. Storage areas and containers should be kept clean and dry and free from pests that may introduce biological contaminants. Storage areas and containers should be cleaned regularly to avoid unnecessary cross-contamination. Seed should be stored properly and in such a way that is not accessible to animals. Medicated feed, non-medicated feed and compound feeding stuffs intended for different categories or species of animals should be stored such as to reduce the risk of cross-feeding.

9.3.2. Distribution

The on-farm feed distribution system should ensure that the right feed is sent to the right destination. During distribution and feeding, feed should be handled in such a way as to ensure that biological contamination does not occur from contaminated storage areas and equipment. Non-medicated feeds should be handled separately from medicated feeds to prevent contamination. Feed transport vehicles and feeding equipment used to deliver and distribute medicated feed should be cleaned periodically.

9.3.3. Feed and water

Farmers should evaluate and minimize the risks of biological or chemical contamination of animals through drinking water, or thorough direct contact with aquatic animals. Feeding and watering equipment must be designed, constructed and placed such that contamination of feed and water is minimized. Watering systems should be cleaned and maintained regularly, where possible.

9.3.4. Personnel

Animals should be fed by staff possessing the requisite ability, knowledge and professional competence.

10. Standards of animal feeds of various species of animals and poultry are as follows:

Minimum and maximum Nutrient Requirement of Current Feed					
Nutrient	**Cattle Conc.**	**Calf Starter**	**Creep Feed**	**Pig Starter**	**Pig grower**
Dry Matter(Min) %	88	88	88	88	88
ME (Min) K. Cal	2500	3000	3100	3000	2900
CP (Min) %	18	18 - 20	21	19	16
TDN ((Min) %	70 - 72	70			
Crude fat (Max) %	5	5	5	5	5
Crude fibre (Max) %	10	10	5	5	6
Ash %	4				
Sand Silica (Max)%	10	10	6	6	6
Aflatoxin (Max) PPb		15	10	10	10
NFE %			63	56	56
Lysine %			0.95	0.79	0.7
Methione + Cystine %			0.56	0.51	0.45
Mineral Elements					
Calcium %	0.8	0.6	0.89 - 0.92	0.7 - 0.73	0.85- 0.87
Phosphorus %	0.7	0.47	0.86 - 0.7	0.79 - 0.81	0.69 - 0.71
Sodium %	0.2	1	0.1	0.1	0.1
Chlorine %	0.1	0.1	0.13	0.13	0.13
Vitamins per Kg Feed.					
Vitamin A (IU)	1450	1000	2200	1750	1300
Vitamin D (IU)	140	140	220	200	200
Vitamin E (IU)			11	11	11
Vitamin K (mg)	200	200	2	2	2

Nutrient	**Pig finisher**	**Sow ration**	**Chick starter**	**Chick grower**	**Breeder ration**
Dry Matter(Min) %	88	88	88	88	88

ME (Min) K. Cal	2800	3000	2800	2700	2700
CP (Min) %	14	16	20	16	16
TDN ((Min) %					
Crude fat (Max) %	5	5	5	5	5
Crude fibre (Max) %	6	7	5	5	6
Ash %					
Sand Silica (Max)%	6	6		6	6
Aflatoxin (Max) PPb	10	10	10	10	10
NFE %	56	60			
Lysine %	0.57	0.58	1	0.8	0.85
Methione + Cystine %	0.3	0.36	0.8	0.7	0.6
Mineral Elements					
Calcium %	0.65 - 0.82	0.89 - 0.91	0.9 - 1.1	0.9 - 1.1	3.3 - 3.5
Phosphorus %	0.55 - 0.66	0.7 - 0.74	0.68 - 0.7	0.58 - 0.6	0.68 - 0.7
Sodium %	0.1	0.2	0.15	0.15	0.12
Chlorine %	0.13	0.3	0.15	0.12	0.1
Vitamins per Kg Feed.					
Vitamin A (IU)	1300	2000	4000	3000	5000
Vitamin D (IU)	125	200	450	450	500
Vitamin E (IU)	11	10	7	2.5	7.5
Vitamin K (mg)	2	2	1	1	1

Nutrient	**Pheasant starter**	**Pheasant rearer**	**Pheasant grower**	**Pheasant breeder**	**Sheep**	**Molasses**
Dry Matter(Min) %	88	88	88	88	88	80
ME (Min) K. Cal	2590	2500	2490	2580	3000	
CP (Min) %	28	25	19.9	18	18	32
TDN ((Min) %						40%
Crude fat (Max) %	4.5	4.7	5.3	5.5		
Crude fibre (Max) %	6.4	6.9	6.5	5		
Ash %						
Sand Silica (Max)%	6	6	6	6	6	
Aflatoxin (Max) PPb	10	10	10	10	10	
NFE %						
Lysine %	1	0.7	0.75	0.7	0.85	

Methione + Cystine %	0.8	0.7	0.7	0.85	0.65	
Mineral Elements						
Calcium %	1.15	1	0.99	3	0.85	
Phosphorus %	1.2	0.01	1.03	0.97	0.65	
Sodium %	0.1	0.15	0.15	0.15	0.2	
Chlorine %	0.15	0.12	0.12	0.1	0.3	
Vitamins per Kg Feed.						
Vitamin A (IU)	6000	4000	3500	5000	1300	
Vitamin D (IU)	200	350	300	500	125	
Vitamin E (IU)	400	350	300	400	11	
Vitamin K (mg)	8	5	3	3	2	

ME = Metabolisable energy; CP = Crude protein; TDN = Total digestible Nutrient; PPb = Parts per billion; IU = International unit; K. Cal = Kilo calories; NFE = Nitrogen free extract.

Specification of Urea Molasses Block		
Ingredient	**Specification**	**Parts**
1. Cane Molasses	25% moisture	40
2. Wheat bran	Coarse type	22
3. Urea	46% Nitrogen	9
4. Till Cake	Ground & heated	12
	at 60-65 ^{O}C	
5. Iodized Salt		5
6. Cement		12
7. Water	Not more than 3 litres per 12 kg cement.	
Weight	**2 kg per block**	

ANNEXURE – IX: SAMPLING MANUAL OF THE NATIONAL QUALITY CONTROL LABORATORY

Preamble

These general guidelines on sampling is to provide first hand aid in collecting samples of agriculture, livestock and food products for testing through fair and valid sampling procedures which are followed when any sample is being collected and tested for regulatory compliance. It applies for basic guidelines for qualitative control such as characteristic measured on a compositional characteristic or similar basis, i.e. presence of a pathogenic microorganism to determine quality level and type of risks i.e., critical or non-critical.

Scope

These general guidelines apply to all raw, semi-processed, processed foods, varieties of seed and livestock depending on the circumstances therein at the time of sampling.

1. Fundamentals on sampling requirements

1.1. Sample

Sample is defined as piece or item that shows the quality of the whole from which it was taken.

1.2. Sampling

Sampling is the act of selecting a certain portion/number of containers or product units from a particular part of the same commodity. The sample must be as representative as possible of the entire consignment/lot from which it is collected. The purpose of the sampling is to determine the characteristic attributes of the item (s) being sampled to find out as to whether product is safe, wholesome and confirm to standards. The sample size should be ample to allow repeated analyses if necessary and also the condition of the sample arriving at the laboratory, in fact reflects the conditions at the time of sampling by the collecting officer (s).

1.3. Selective Sampling

The samples collected based on unsatisfactory conditions or other evidences observed while inspecting. This may be done at the factory/manufacturing premises, wholesale level and at the market. Such samples may also be termed as biased, subjective, investigative or regulatory samples.

1.4. Objective Sampling

The samples often collected from a lot of product on a routine basis for surveillance or for collection of data for specific purpose or for monitoring to determine whether the product is unsatisfactory for any reason.

1.5. Random Sampling

Drawing a sample in such as way that every part of lot has an equal chance of being represented is known as random sampling.

1.6. Representative Sample

A sample in which the characteristics of the lot from which it is drawn is maintained. It is in particular the case of a simple random sampling where each of the items or increments of the lot has been given the same probability of entering the sample. It is intended to provide information on a given characteristic of the commodity in subject and to form a basis for a decision concerning commodity or the process, which has produced it.

1.7. Primary Sample

A primary sample is a small portion taken from one point in the lot to be sampled.

1.8. Composite Sample

A composite sample is formed by combining and mixing all the primary samples taken from the lot.

1.9. Submitted Sample

A submitted sample is the sample, which is submitted to the testing laboratory.

1.10. Working Sample

A working sample is a sub-sample taken in the laboratory from the submitted sample, on which tests are performed as per prescribed methods of analysis.

1.11. Sub- Sample

A sub- sample is the portion of a sample obtained by reducing the sample using appropriate sampling methods.

1.12. Sampling Error

Part of the total estimation error due to one or several of the parameters such as the heterogeneity of the lot sampled, random nature of sampling and the known and acceptable characteristics of the sampling plans.

1.13. Sampling plan

Planned procedure, which enables one to choose, or draw separate samples from a lot, in order to get the information needed, such as a decision on compliance status of the lot.

1.14. The Characteristic

A characteristic is a property, which helps to identify or differentiate between items within a given lot. The characteristic may be either quantitative or qualitative.

1.15. Homogeneity

A lot is homogenous relative to a given characteristic if the characteristic is uniformly distributed throughout the lot.

1.16. Heterogeneity

A lot is heterogeneous to a given characteristic if the characteristic is not uniformly distributed throughout the lot.

1.17. Defects (Nonconformities)

A defect (nonconformity) occurs within an item when one or more quality characteristic

does not meet its established quality specifications.

1.18. Coordination – Sampling & Analysis

It important to synchronize sampling and laboratory analysis to ensure the coherence and integrity of the programme. The laboratory usually has no control over field sampling and the analyst must assume that portion received for analysis is representative of the lot/consignment sampled. The objective of the sampling is to select a certain portion, number of containers or products that is most representative of a consignment or lot from which it is collected.

2. Common terms and definitions

Some of the more commonly used terms in sampling are described in this section.

2.1. Lot

A lot is a definite quantity of some commodity, which is physically identifiable, manufactured or produced under conditions, which are presumed uniform.

2.2. Consignment

A consignment is a quantity of some commodity delivered at one time. It may consist in either a portion of a lot or either a set of several lots.

However, in the case of statistical inspection, the consignment shall be considered as a new lot for the interpretation of the results.

2.3. Case

A box for holding something that is the outermost covering. A case may hold cans, bottles, packages or even cartons but it will be the outer covering except that cases of foods may be found in a container, such as those loaded on seagoing vessels.

2.4. Cartons

Usually a cardboard box that holds several units of packages. Such as cartons of candy, nuts, milk, juice etc.

2.5. Package

Holding one or a group of related things offered as a whole, such as package of jelly, beans, nut, coffee, tea bags etc.

3. General Guidelines – Food Sampling

In general, foods are subjected to two major types of testing i.e., food chemical and microbiological testing.

3.1. General

The samples are collected based on either selective or objective purposes. Sampling plans may vary depending on resources, the kinds of food industries involved i.e., whether the major commerce is domestic, export or import.

3.2. Make Up of Lot Sample.

Even with the surveillance-sampling programme it may be important to know certain characteristics about a manufacturer's operation. Knowledge of a particular manufacturer's code can save both time and money by avoiding the collection of sample that provide no more information than selective sampling. The sampling officer(s) must make more observation about make up of the lot to be sampled in relation to the reason for sampling.

3.3. Sample for Labeling

If a sample is collected for labeling considerations, the product itself may not need to be examined and it may not be necessary to collect more than a few intact units of the product. Samples collected for most labeling deficiencies do not need to be analyzed or randomly selected. The violations such as false or misleading ingredient statements generally have to be proven through laboratory analysis of the product.

3.4. Sampling by Code Lot

The packed foods are normally coded to trace specific products to its manufacturing background. A coded product means the manufacturer has decided that each article bearing a particular code has something in common with every other article bearing the same code such as same lot of raw materials, processed on same equipment on same day and shift. Code lot sampling is desirable because adverse findings in the product can be easily followed up to determine the cause and extent of problem.

3.5. Identifying Lots Sampled.

An important part of collecting a sample is to identify the lot of food from which the sample is taken. It is important that each individual container from which a sample is collected be identified in some manner, which will be recognized at a later time. It is also important that the date the sample was collected be shown on the case, drum, bag, etc., from which each unit of the sample was collected in case if an additional sample is required, to be embargoed or seized in case of violations.

3.6. Special Sampling Techniques

Most packaging is designed to protect the product in marketing and storage depending upon the nature of the product. Generally the longer marketing and transportation the more complicated the packaging, which in some cases presents some unique sampling.

The canning technology has made possible to preserve fruits, vegetables, meat products. Therefore, canned foods represent one of most important types of packed foods available for sampling.

3.6.1. Sampling of Oils and Fats in Bulk (Liquid and Semi-Liquid)

Regardless of the size of the containers such as drums and metal cans, the sample must be collected on random basis. The samples are collected from the opened containers with the help of stainless steel long handled dippers. Another method of sampling is use large pipettes of plastic with diameter of one inch. The pipette should be lowered in the container with one end covered with thumb or palm. Then pipette is lifted over from the container and emptied in the sample containers.

3.6.2. Sampling of Spices and Condiments

Whole spices like black pepper, coriander, fennel, fenugreek, celery seeds, dill seeds and aniseed etc. The bags to be sampled are selected randomly. The sampling trier is used by inserting at three positions i.e., top, middle and bottom of the bag. The samples collected should be mixed together to form a composite sample. The required size of the laboratory sample is prepared from this composite sample.

For the products packed in small packets, the packets to be sampled are opened and from the thoroughly mixed contents, required quantity of laboratory sample is obtained and packed.

3.6.3. Sampling of Fresh Fruits and Vegetables

The difference in physico-chemical composition between individual fruits and vegetables and also the difference in various parts of the same fruits and vegetable make sampling difficult. The samples must be collected in such a way as to be able to assess the lots selected randomly as given below:

Qty. of in lot (kg)	Qty. of samples (kg)
Up to 200	10
2001 – 500	20
501 – 1000	30
1001 – 5000	60
Over 5000	100 (Min)

3.6.4. Sampling of Fresh Meat and Meat Products

As far as possible, the samples must be sent to the laboratory without any delay to prevent possible contamination during handling and transportation. The sampling appliance and containers should be clean and sterile. No preservatives or bacteria or fungicidal agents added to samples required for microbiological analyses. The meat samples can be collected by scraping thin portions about 2 mm of thickness from various positions on the surfaces using sterile scalpel blades, knife and spatula and transfer them with forceps to the sample container.

In case of solid pieces of meat, cut into the centre at the area with sterile knife and remove the sample. If a particular spot or area is obviously spoiled or discolored, sample may be taken for comparison with an apparently unspoiled portion from a similar location on the product.

3.6.5. Sampling of Food Grains

Different sampling procedures are required for drawing samples in bags and in bulk i.e., heaps, bins, silos, godowns etc.

For sampling from bags of various capacities, sampling shall cover bags from various positions in the stack. The number of bags selected shall be as given in the table below:

No. of bags in lot	No. of bags sampled
Up to 30 31 – 300 301 – 1000 1001 – 2000	All bags 30 bags 50 bags 100 bags

For sampling of grains in bulk in the form of heaps, bins, silos, it is necessary to have the physical examination of lot to have general assessment in regard to uniformity of the quality of the lot and observation noted immediately. The scale of sampling of food grains in bulk shall be in accordance with table given below:

Qty of consignment (Tonnes)	No. of spots from which samples are drawn
Up to 300 tonnes 301 – 1000 tonnes 1001 tonnes and above	30 spots 50 spots 100 spots Note: *Spots should cover different points of the bulk*

3.6.6. Sampling for Microbiological Testing

Aseptic sampling is a method used to obtain a sample of a product susceptible to microbiological contamination, such sample being collected without contamination either the original lot or the sample being collected. Aseptic samples are collected and delivered to the laboratory in a manner, which will ensure that the microbiological findings accurately reflect the condition of the lot at the time of sampling.

Products in a large drums, or similar containers, either aseptically filled or heat processed, should not be sampled while the shipment is en-route unless there is an eminent danger to the health. Sampling of these products should be undertaken at the consignee (user) so the remaining portion can be immediately used or stored under conditions that will maintain its bacteriological integrity after the sample is collected. Whenever possible collect intact unopened containers for microbiological analysis.

If it is necessary to open containers for sampling, draw the sample and submit it under conditions which will prevent multiplication or undue reduction of the bacterial population by use of sterilized equipment and containers. Equipments and containers sterilized by the laboratory must be taken proper care to prevent contamination and stored properly if not used immediately. Work rapidly and carefully when collecting samples. Open sterile sampling containers only to admit the sample and close immediately after. Do not touch the inside of the sterile container, lip or lid.

4. General Guidelines - Seed Sampling

In general, a specified number of primary samples are drawn from different parts of a seed lot. They are mixed to give composite sample, which is much bigger than required and must be reduced. The primary samples and composite samples are produced at the location of the

seed consignment. The composite sample is thoroughly mixed. The properly reduced sample is called the submitted sample.

This the sample which is submitted to the seed testing station for seed quality control test, eg purity, germination, moisture contents and seed health etc.

In the laboratory the sample submitted is divided into a number of working samples by reduction. One test is performed on one working sample.

Minimum weight of sample sizes for seeds of agricultural and vegetable crops:

Crop (Seed)	Min. Sample Size (g)
Agrostis spp	25g
Brassica juncea	40g
Cuminum cyminum	60g
Allium cepa	80g
Brassica napus	100g
Cucumis melo	150g
Bromus carinatus	200g
Medicaco Arabica	600g
Hordeum vulgare	1000g
Triticum aestivum	1000g
Phaseolus mungo	1000g
Vicia faba	1000g
Zeamays	1000g

4.1. Sampling

Primary samples can be drawn from containers and bags of various sizes and bulk seed by using suitable sampling instruments. Samples can also be drawn directly from seed streams during the cleaning or bagging operations, again using a suitable instrument, by hand or automatic devices. In the case of seeds, which flow with difficulty such as chaffy seeds, it is sometimes necessary to draw samples by hand. Incase of seeds packed in bags, sample should be collected from top, middle and bottom of bags. In order to sample seeds from the bottom of standing bags, they may be raised off the floor and placed on top of other bags.

4.2. Sampling Tools Used

Two types of sampling instruments can be used i.e., Stick or Sleeve-type trier and Nobbe trier. A trier of 762 mm size with an outside diameter of 12.7mm is used for clovers and other free-flowing seeds kept in bags. A trier of 762 mm size with an outside diameter of 25.4 mm is used for cereals kept in bags. Triers used in sampling bins are much larger ranging up to 1600 mm in length and 38 mm in diameter with six or nine slots.

4.3. Sampling Techniques

When using the trier either vertically or horizontally, one should insert it diagonally into the bag or container. For seeds in bulk, the vertical insertion is more practical. The trier is thrust

into the bag in a closed position, then opened and turned a couple of times or gently agitated to allow it to fill completely. Thereafter it is closed again, withdrawn and emptied into a suitable seed pan, or into a piece of waxed paper or similar material. When the trier is removed, the point should be run across the hole a couple of times in opposite directions to pull the threads together and close the hole.

4.4. Sampling by Hand

Handful of seeds is taken from random positions. This method is usually used for chaffy, non-free-flowing species. Since it is difficult to force the hand deep into bags and bins, it may be necessary to partly empty the bags before primary sample are taken. The fist is inserted into the body of the seeds. Once the fist has reached to the point from where the sample is to be taken the fist is opened and the sample is taken. Care should be taken to keep the fingers tightly closed around the seeds to avoid escape of seeds.

4.5. Sampling from Seed Stream

Sampling can be done while seeds are cleaned during seed processing or when large quantities of seeds are off-loaded, eg from ships or boats. The sampling container must be of such a construction that the entire cross-section of the seed stream is uniformly sampled and the seeds entering it cannot bounce out again.

4.6. Sampling Intensity

For seed lots in containers up to 100 kg capacity, the sampling intensity is required as given below:

Number of containers	Min. no. of primary sample
1 - 4 containers	3 primary samples from each container
5 - 8 containers	2 primary samples from each container
9 - 15 containers	1 primary samples from each container
16 - 30 containers	15 primary samples total
31 - 59 containers	20 primary samples total
60 or more containers	30 primary samples total

4.7. Sampling from Loose Bulk

The “Loose in bulk” means that the seeds are not in small containers such as sacks. The seeds could simply be in a heap on the floor, in a lorry or railway wagon, shipping container or a high volume storage bin. Nevertheless sampling methods are essentially the same in principle and individual samples are drawn from different horizontal and vertical positions chosen at random.

If the depth of the seeds does not exceed two meters, the tires can be used. Drawing from seed lots exceeding two meters depth requires special tools for sampling, such as the Neate sampler, Cargo sampler, Pelican sampler, Nestenius seed sampler, Strand automatic seed sampler or Svegma automatic sampler.

When sampling seeds in containers of more than 100kg or from streams of seeds entering containers, the following shall be regarded as the minimum requirement:

Lot size	Min. No. of primary sample
Up to 500kg	5 primary samples
501-3,000kg	1 primary sample for each 300kg, but not less than 5
3,001-20,000kg	1 primary sample for each 500kg, but not less than 10
20,001kg and above	1 primary sample for each 700kg, but not less than 40

4.8. Sample Packing, Marking and Sealing

Each sample must be marked in a way that establishes the connection between lot and sample. An additional label may be made for the lot and attached to the sample or put into it. The bags must be sealed properly in such a way that it cannot be tampered unless it reaches to laboratory.

5. General Guidelines - Livestock Sampling

The accurate diagnosis is highly essential for regulatory and quarantine purposes, treatment and to carry out any preventive measures for disease outbreaks. In many cases diagnosis of diseases depends mainly on history and symptoms exhibited by the ailing animals, which at times lead to inaccurate diagnosis. Therefore, the laboratory analysis is essential for the confirmation of the diseases. To a large extend the laboratory analysis depends on the skills and the care taken during sample collection.

For any disease, there are provisional diagnosis and confirmatory diagnosis depending upon the diagnostic steps or methods adopted. In the provisional diagnosis the main steps taken are the history, clinical science and postmortem findings. But for the confirmatory diagnosis, it is important to involve the relevant laboratory techniques.

5.1. Sample Collection Techniques

The samples should be accompanied with full history of animal subjected for collecting sample. The sample collected should be packed in ice. Preservatives need to be added if it takes long to reach the laboratory. The samples collected for bacteriological examination should not be kept below 0 deg. C. But for virus isolation these can be stored at -20 deg. C to -80 deg. C. For most of the diseases, the samples are stored at 40 deg. C. When death is recorded to ailing animals, postmortem should be conducted at the earliest before putrefaction sets in and samples collected in sterile containers to be dispatched in 10% formalin. The putrefied materials are unfit for laboratory sample.

5.2. Parasitology

Faecal eggs counts and differential larval counts are a guide to the degree and type of worm burden. Faecal eggs count depends on faecal consistency and bulk, host resistance, pregnancy and effects of lactation. Starvation will increase eggs count and in-appetence may cause the count to multiply 30-40 times. Diarrhea will reduce eggs count. Feacal egg counts will vary according to the parasite species involved and whether the worm burden consists of sexually matured parasites.

5.2.1. Sampling Techniques

The faecal samples are mainly collected for screening against internal parasitism from normal as well as sick animals. The maximum amount of faeces required for the examination is 30g and it has to be preserved in 10% formalin before sending to the laboratory. The faeces should be collected fresh either from the rectum or from recently defecated patch.

5.2.2. Sampling Tools & Containers

Rubber gloves, marker pen, faecal vials, 10% formalin, laboratory.

5.2.3. Sample Storage and Dispatch

Faecal sample should be kept cool, but not frozen. Freezing kills the eggs of the most species and make sample unsuitable for culture. Faecal sample should be submitted chilled in an insulated container with ice or ice bricks.

5.3. Bacteriology

A bacterial disease can only be diagnosed when a pathogenic organism can be demonstrated either on smear, culture or in tissue sections in association with pathological changes. Many pathogenic organisms are present in normal animals like clostridium species in intestinal contents, so that recovery of the organism alone may not necessarily be significant. In other cases as in Escherichia coli, there are many serotypes, but only few are commonly pathogenic.

5.3.1. Sampling Techniques

It is useful to collect samples from clinical cases and in-contact animals. In-contact animals may be at an early stage in the infection with a greater chance of then shedding substantial number of microorganism. Sample should be obtained from the edge of active lesions where microbial replication will be most active. It is important to collect samples aseptically as far as possible; otherwise the relevant pathogen may be grown by the numerous contaminating bacteria. Samples must be submitted individually in separate watertight containers. Screw-capped jars that are clearly marked indicating the tissue enclosed, animal identification and the date of collection are preferable. If transportation to the laboratory is delayed, samples should be refrigerated at 40C but not frozen.

5.3.2. Sampling Tools & Containers

Sterile plastic bottles, plastic bags with thickness of 0.1 mm (for organs), swabs-plain cotton wool sterile swabs, microscopic slides, milk sample bottles (30 ml) sterile with screw-topped, sterile pipettes for collecting vaginal mucus from cows and preputial scraping from bulls.

5.3.3. Sample Storage & Dispatch

The samples for bacteriology tests should be collected aseptically and submitted in individual sterile glass or plastic jars or in plastic bags. If the lesions are small, the entire lesions or the organs should be submitted. If the lesions are large or widespread, submit the portion of the affected tissue containing the lesions and the surrounding area. If the septicemia/bacteraemia is suspected, submit the portion of liver, spleen, heart blood and lungs, in separate container.

5.3.4. Milk Sampling Techniques

It is vital that a milk sample for microbiology is taken so as to ensure that the potential pathogenic bacteria in the sample came from inside of the mammary gland and not from the

dust or faecal particles. Wipe the teat thoroughly with 70% ethyl alcohol, paying particular attention to the teat orifice. Hold the sterile collection bottle nearly horizontal and keep the lid close by the little finger so that the lid does not get contaminated.

5.3.5. Urine Sample Collection

Urine samples may be submitted for urinalysis, bacterial microscopy and culture or for a viable bacterial count to establish whether a clinical bacteria is present. For bacteriological procedures the preferred methods of collection are by cysto-centesis, catheter or mid- stream urine samples.

5.4. Virology

Virological examination involves demonstration of a pathogenic virus or detection of antibody to virus. Findings must be interpreted in the light of the history, clinical findings, lesions, etc.

5.4.1. Sampling Tools & Containers

Blood vacuum tubes, silicone coated for serum samples and blood clots (for isolation and detection of antigen, some virus). Blood vacuum tubes with heparin or EDTA for blood for virus isolation (of mainly the arboviruses) or peroration of buffy coat samples for antigen detection. Sterile bottles for samples of tissues, organs. Sterile 5ml vials for serum and fluid samples. Swabs and PBGS bottles for discharge. Plain sterile scissors and forceps should be available.

5.4.2. Sampling Techniques

Specimens for virus isolation must be collected by aseptic techniques, using sterile instrument and sterile containers. Avoid contamination from other tissues as well as that from extraneous sources. Submission for virus isolation should be accompanied by serum from the affected animal(s) whenever possible.

5.4.3. Blood Sampling Techniques

This should be collected using the appropriate blood vacuum tube, avoiding contamination of the sample. A separate needle should be used for each animal. Avoid contamination of the outside of the tube by blood, soil and feaces as this creates difficulties in handling the samples within the laboratory.

5.4.4. Serum

The serum should be poured off aseptically into a sterile 5ml vial. The clot should be submitted as it may be required for virus isolation or antigen detection.

5.4.5. Swabs

Swabs from excretion, exudates, mucosal surfaces and orifices are taken carefully, avoiding contamination from other sites. Each swab should be then transferred to PBGS at room temperature, chilled (but never frozen) for transport to the laboratory.

5.4.6. Sample Storage & Dispatch

All virological samples should be chilled prior to and during transport. If more than 48hrs is to elapse between collection and receipt at the laboratory, sample except blood samples should generally be frozen but for isolation of Arboviruses (e.g.IBR), sample should never be

frozen. These viruses have extremely poor survival at -200 deg. C and tissues for their isolation must be kept chilled. The samples should be packed in insulated containers with sufficient ice bricks to ensure that they are still cold when received at the laboratory. However, care should be taken to prevent direct contact between coolant bricks and samples, which may otherwise become frozen.

5.5. Serology

Serology is applicable for a range of bacterial and viral diseases, as well as for some Chlamydia, mycoplasmal, rickettsial, protozoan and metazoan diseases. A serological test is used to show the presence or absence of antibody to the specific etiological agents or group of agents. The presence of antibody indicates exposure of organism, which may be due to current clinical condition or to earlier unrelated infection.

5.5.1. Sampling Tools & Containers.

Blood vacuum tubes (10ml) silicone coated, without anticoagulant. Sterile screw-capped (5 ml) for serum samples.

5.5.2. Preparation of Serum

Collect the blood in a tube and keep it angled in cool place. Dry syringes are to be used for collection in order to avoid haemolysis. The amount of blood to be collected is approximately 5 ml in large animals and 2 ml incase of poultry. Clotting of blood will take place in 1-2hrs and the separation about 2-24hrs depending upon the temperature. Pipette out the serum in a serum vial.

5.5.3. Sample Storage & Dispatch

Samples should be allowed to clot before transporting them over any distance. Clots may not retract readily in cold weather or if they are chilled soon after collection. Sample should be held in warm room until the clot is retracted. Once the clot has retracted, blood samples must be chilled to reduce contamination, haemolysis and autolysis.

5.5.4. Sample Information

The samples should be accompanied by sufficient information to allow the veterinarians in the laboratory to select the appropriate examination procedures and to adequately interpret the results. The detail information required is as given below:

- Name address of the owner;
- Description of the animals like species / breed or sex or age;
- Case history and clinical signs;
- The treatment given if any;
- Morbidity and mortality/PM findings;
- Sample preservatives used.

ANNEXURE – X: CODE OF ANTE-MORTEM AND POSTMORTEM INSPECTION FOR LARGE ANIMALS AND SMALL ANIMALS

Veterinary science and the science of meat hygiene should be applied throughout the food chain, starting at the farm of origin, so that fresh meat produced from the slaughtered animals is safe and wholesome.

GENERAL REQUIREMENTS

Every slaughter animal should:

1. Be accompanied by appropriate documents like health certificate and movement permits which would ensure that the place of origin from which the animal has come, can be traced; and is essential for accurate disease information especially for farms.

2. Be appropriately identified with any identifiable mark or tattoo.

3. Be adequately rested prior to slaughter in clean, well-ventilated lairages and yards having drinking troughs supplied with potable water.

4. Undergo ante- and post-mortem inspection unless delay in carrying out ante-mortem inspection would cause undue suffering to animals requiring emergency slaughter.

A. ANTE-MORTEM INSPECTION

1. *PURPOSE & OBJECTIVES*

a. To prevent animals showing clear evidence of disease or condition that would render the carcass unfit for human consumption from being slaughtered. Many conditions obvious at ante-mortem inspection show little to no macroscopic evidence on post-mortem examination and thus can be overlooked, for example, septic metritis and mastitis, sturdy in sheep, tetanus, rabies or tuberculous meningitis. On the contrary, ante-mortem inspection is of great value in the detection of animals suffering from scheduled or infectious diseases, particularly, anthrax, rabies and glanders which are communicable to man.

b. To slaughter, separately from healthy animals, all those suspected of being affected by a disease or condition that could render whole or part of the carcass unfit for human consumption.

c. To prevent obviously diseased animals from being handled on the slaughter floor - and this will not only protect the livestock against the spread of infectious diseases but will prevent unnecessary contamination of meat,

premises, equipment and personnel as in the case of handling grossly contaminated animals.

d. To screen / identify / and deal those animals treated with antibiotics, chemotherapuetic agents, insecticides and pesticides.

e. To identify, tag and deal with animals that are tuberculosis- and Brucella-positive.

f. To obtain information which may be useful for the post-mortem inspection, diagnosis, and judgement of carcass and offals.

g. Information on diseases and other conditions leading to unnecessary condemnation can be reduced through a system of animal disease data feedback to the farms of origin.

2. *PRE-REQUISITES FOR ANTE-MORTEM INSPECTION*

a. The abattoir should have certain minimum requirements to enable adequate ante-mortem inspection to be performed satisfactorily.

b. Only animals which have been adequately rested shall be presented for an ante-mortem inspection.

c. It is the duty of the Management of the abattoir to present the animals in such a way that an adequate ante-mortem inspection can be carried out. Abattoir employees should assist and co-operate fully with the examining officer in moving, segregating, identifying and marking animals when required.

d. No animal grossly contaminated with mud, filth or faecal material which will contribute a hazard by unnecessary contamination of its carcass during dressing operations, shall be presented for ante-mortem inspection until it has been cleaned to the satisfaction of the inspector.

3. *ANTE-MORTEM INSPECTION PROCEDURE*

a. No animal that has entered the yards or pen of an abattoir shall be removed without permission in writing from the officer in charge of meat inspection.

b. The ante-mortem inspection of all animals shall be conducted on the same day as the slaughter of the animals. If the animals are kept for more than 24 hours after the initial ante-mortem inspection of the abattoir the ante-mortem examination should be repeated on the day of slaughter.

c. The inspector may direct any animal to be moved and segregated in the suspect holding pen for a more detailed examination of the animal if necessary.

d. Animals should be inspected in a standing position and in motion, and while they are excited.

e. The following should be observed:

(i) abnormalities and signs of disease ;

(ii) species and behaviour of animals ; sick or suspected diseased animals, notice should be taken of age, colour and specific markings;

(iii) Cleanliness of slaughter animals.

f. Particular attention should be paid to the following details:

(i) manner of standing, movement, gait and posture ;

(ii) state of nutrition ;

(iii) reaction to environment ;

(iv) condition of hide, skin, hair and wool ;

(v) digestive system (salivation, rumination, consistency and colour of faeces) ;

(vi) appearance of the urinogenital system, including vulva, mammary glands, prepuce and scrotum ;

(vii) respiratory system (nostrils, including mucous membranes, nasal discharge, blood-tinged froth, quality of respiration) ;

(viii) injuries, swellings (abscesses, enlarged joints, hernia or omphalophlebitis, mastitis, tumours, lumpy jaw, tympany and edema..

(ix) body temperature(in suspected / obviously diseased animals);

(x) blood smear (in cases in which a disease is suspected which could be diagnosed by examining the blood) ;

(xi) as certain diseases or disease symptoms have sites of predilection in different species, it is essential that attention should be paid to these sites.

g. The post-mortem inspector should be notified of the result of the ante-mortem inspection.

h. After the ante-mortem inspection, the inspector shall categorize the animals and deal with the following decisions.

(i) Animals passed as fit for slaughter without any restriction:

These are animals with no obvious disease or abnormal conditions.

(ii) *Animals permitted for slaughter, but under close supervision* -

(a) These are animals suspected of being affected with a disease or a condition that might render whole or portion of the carcass as unfit for human consumption.

(b) Each of these animals will be carefully examined, by an examining officer, and the findings recorded. These ante- mortem findings shall be taken into consideration for the judgment of the carcass and parts thereof during post-mortem inspection.

(c) Each of these animals will be positively identified such as by tattoo, serial numbered ear tags, slap marks, freeze bands, paints or other identifying methods acceptable to the examining officer.

(d) The examining officer shall direct any animal to be slaughtered separately from those described in sub-paragraph 8 (1), in order to prevent unnecessary contamination of other carcass.

(e) The diseases and /or conditions included in this category are:

(i) Anaemia;

(ii) Diarrhoea;

(iii) Flystrike if widespread;

(iv) Indeterminate symptoms- Animals in which symptoms are not clearly defined so that they are merely suspected of being affected with a disease or condition that could result in condemnation of the whole or portion of the carcass;

(v) Suspected internal parasitic infestation accompanied by anaemia, diarrhoea or poor in condition;

(vi) Jaundice;

(vii) Lameness

(viii) Localized infections such as abscesses or infected wounds unassociated with an elevated temperature;

(ix) Neoplasms not associated with emaciation;

(x) Oedema (localized);

(xi) Skin and mucosal problems when lesions are widespread (e.g. ecthyma, dermatitis, erythema, mange photosensitization, ringworm, ulcerations, urticaria and warts).

(xii) Post-vaccination reactors unassociated with an elevated temperature.

(xiii) Pox lesions when widespread.

(xiv) Unthriftiness when associated with lack of vigour.

(iii) *Animals withheld from slaughter* -

(a) These are animals with a disease or condition that, in the opinion of the examining officer would likely respond to a delay-in-slaughtering or to suitable treatment.

(b) The diseases and /or conditions included in this category are:

(i) Biological and other drug residues.

Animals known or suspected, to have been recently treated with any chemical, drug or insecticide that may impart a biological or other residue in its tissues shall be withheld from slaughter until the accepted withdrawal period for the chemical, drug or insecticide has elapsed.

(ii) Disturbance of central nervous system.

When the condition is considered to be the result of a poison (chemical, metal or plant) or a toxin of a specific disease such as botulism or tetanus, the animal shall be withheld from slaughter.

(iii) Highly elevated temperatures with accompanying symptoms such as evidence of an infection.

The temperature is said to be highly elevated when it is as high as 1050 F or more in buffaloes, cattle or sheep, and 1060 F or more in pigs. Pigs obviously suffering from stress are not included in this category but are as dealt with under emergency slaughter.

(iv) Metabolic disorders.

(v) Post-vaccination reactors accompanied by fever.

(vi) Research investigational animals.

These animals shall not be slaughtered until after full advice has been received concerning details of the research and of any chemicals or drugs used on the animals during the period of the research. Such evidence shall be used in determining the animal's eligibility for slaughter.

(c) An animal that has recovered from a complaint as listed above in paragragh (3) (b) can be re-submitted for the ante-mortem

inspection. Any drug that has been used shall be made known to the examining officer.

(iv) *Emergency Slaughter of Animals* -

This is required when an animal is in acute pain or is suffering from a condition where a delay in slaughter may be contrary to animal welfare.

(a) These are animals that are injured or crippled and in the case of pigs those suffering from heat stress.

(b) The management of the abattoir should inform the inspector of the presence and whereabouts of such animals.

(c) Ante-mortem inspection of such animals shall be performed without undue delay.

(d) The animal may be slaughtered in the yard/pen or paddock.

(e) Slaughter and handling of such animals need not be carried out separately from healthy animals. Expeditious handling is obligatory and should be affected at the earliest possible opportunity.

(f) The animals shall be positively identified as in 8 (2) (c).

(v) *Casualty Slaughter*

The animals that fall into this category are those that are not in acute pain or immediate danger of death, but affected with a more chronic condition, e.g. Obturator paralysis, postpartum paraplagia or widespread benign superficial tumours.

(vi) *Animals to be condemned as unfit for human consumption at ante-mortem inspection.*

(a) These are animals showing clear and unmistakable evidence that they are affected by a disease or condition that necessitates the condemnation of the carcass as unfit for human consumption.

(b) These animals shall not be permitted for treatment on the slaughter floor, nor any portion of the carcass of such an animal be permitted to enter or pass through any section of the establishment where edible product is being handled, prepared or stored.

(c) These animals are not allowed to leave the establishment without the written permission of the Veterinary Officer-in-charge of the abattoir.

(d) The diseases and/or conditions included in this category are:

(i) Anasarca.

(ii) Cachexia - Cachexic animals resulting from any disease or pathological condition.

(iii) Camatose animals that in the opinion of the examining officer are unlikely to respond to treatment.

(iv) Dead animals- This include animals that died in the lairage whilst awaiting slaughter.

(v) Infectious diseases such as acute Colibacillosis or Salmonellosis, acute Swine Erysipelas, Swine Fever, Botulism, Bovine Malignant Catarrhal Fever, Hemorrhagic Septicaemia, Tetanus.

(vi) Neoplasms when associated with emaciation.

(vii) *Animals suspected of being affected with exotic diseases.*

Any animal suspected of being affected with any of the following diseases shall not be slaughtered:

(a) Bluetongue

(b) Foot and Mouth Diseases

(c) Rabies

(d) Rinderpest

(e) Vesicular Disease

(f) Anthrax

The BAFRA shall be immediately advised of the whereabouts of such an animal. The suspected animal together with all in-contact animals shall be segregated and held apart from all other animals until the position has been investigated to the satisfaction of the BAFRA.

In the case of suspected Anthrax, all in-contact animals shall be segregated from all other stock and shall not be slaughtered until after a laboratory examination prove positive, no animal, segregated as said in this paragraph, shall be slaughtered until a period of at least 14 days has elapsed since the

date of segregation or animals showed evidence of having contacted the disease. All yards, races, drive-ways, trucks, etc. that may have been contaminated by Anthrax stock shall be thoroughly cleaned and adequately sterilized by prompt removal and burning of any litter or manure followed immediately by a thorough disinfection of the ground, fences, gates and exposed surfaces with a 5% solution of sodium hydroxide, freshly prepared and applied as hot as possible or by some other methods acceptable to the inspector.

Should the segregated animals come down with the disease, the said animals must be destroyed and buried six feet underground with liberal amount of lime sprinkled over the carcass and pit. Disinfection of the entire premises should ensue as per suspected cases. All vehicles known to have carried the animals should be thoroughly disinfected. Sterilization of all equipment / implements and destruction and burial of objects, clothing and other things should be carried out simultaneously.

There should be no movement of personnel and vehicles. The abattoir should be closed for at least 14 days.

B. POST-MORTEM INSPECTION

1. PURPOSE

1. The purpose of post-mortem inspection is to ensure the detection and elimination of abnormalities and pass the meat for human consumption.

2. PRE-REQUISITES FOR POST-MORTEM INSPECTION

a. Before the post-mortem inspection of slaughter animal is commenced it is the duty of the inspector to satisfy him self that the condition of the premises, equipment and facilities are conducive to the efficient and hygienic performance of this examination. It is the duty of the management of the abattoir to present the carcass and viscera in hygienic manner and in such a way that an adequate inspection can be carried out.

b. In order to prevent the contamination of carcass, heads and viscera, it is essential that the basic requirements of hygiene are strictly enforced and the labour force carrying out slaughtering and dressing operations is fully aware of its important role in maintaining a satisfactory level of meat hygiene.

c. All carcass or parts shall be properly dressed and cleaned prior to inspection or evisceration. All hair, scurf and dirt shall be removed from hog carcass.

d. Carcass should be separated from each other to avoid contact and contamination once the removal of hide, skin or pelt has commenced. Separation of carcass, heads and viscera should be maintained until they have been examined and passed by the inspector. Meat should come in contact only

with surfaces or equipment essential to handling, dressing and inspection.

e. An inspector may direct that at least one vacant rail space exist between a healthy and diseased carcass.

f. Evisceration should be effected without delay.

g. Except in the case of poultry, the sternum of each carcass shall be split and the abdominal and thoracic viscera removed at the time of slaughter in order to allow inspection.

3. GENERAL PRINCIPLES IN IDENTIFICATION, CORRELATION AND CONTROL

It is important that there should be coordination between the inspection points and that those on the slaughter line be grouped to allow for correct identification of carcass and viscera and recording of disease data. This will also provide reliable information for any subsequent examination on the 'detained line'.

a. A post-mortem inspection and examination shall be made by or under the supervision of a veterinarian, and at the time of slaughter of the animal. If the examination reveals no grounds for detaining or condemning any carcass or portions thereof, the inspector shall pass and mark the carcass or portion thereof appropriately.

b. Except with the permission of the inspector no person should, prior to the inspection of any carcass being completed:

(1) remove any serous membrane or any other part from the carcass; or

(2) remove, modify, or obliterate any evidence of disease in the carcass or organ by washing, scraping, trimming, striping or otherwise treating the carcass or organ:

(3) remove and mark or identification from the carcass, head or viscera until the inspector has completed his inspection and given his decision.

c. No person should remove from the inspection area of an abattoir any part or carcass, organ, or any viscera, until the inspector has completed his examination and a decision has been given.

d. The head, tongue, tail, thymus gland and all viscera, and all parts of the carcass to be used in the preparation of meat or meat products, shall be held in such manner as to remain identifiable with the carcass until the post-mortem examination has been completed. When products (for edible purposes) of more than one animal are segregated in a common container before the completion of post-mortem examination, all of such products in the container

shall be condemned if any of the animals, whose product is in such container, be condemned at final post-mortem examination.

e. If on final examination the carcass or portion or product is found to be fit for human consumption, the inspector shall permit such carcass, portion or product thereof to be marked with the inspection legend.

f. Carcass showing injured portions that cannot be readily removed at the time of slaughter shall be held until dealt with as directed by the Officer in charge of meat inspection.

g. Where an inspector directs any carcass, portion or product thereof to be detained for further examination or action, he shall identify such a carcass or portion thereof for it to be directed to the detention room or space designated by the Officer in charge of meat inspection.

h. Unless authorized by an inspector, no person shall place on or remove from any carcass or portion thereof, any identification mark designated to indicate detention or condemnation.

i. When the inspector who makes the first examination does not make the final examination but instead furnishes the officer responsible for the examination with the description of the carcass, portion or product thereof, the reason for which it is held.

j. Anything marked detained or condemned shall be dealt with as the officer in charge of meat inspection directs if no provision for dealing with such thing is made elsewhere in this text.

k. Where an inspector finds any carcass, portion or product thereof unfit for human consumption he shall condemn such carcass, portion or product thereof which shall be disposed off by one of the following methods, under the supervision of the inspector. (Facilities and materials for carrying out the requirements in this section shall be furnished by the establishment).

(i) Disposal by Tanking.

The condemned products shall be placed in the tank in the presence of an inspector who shall then see that the contents of the tank are subjected to a temperature in access of $100\ ^{0}$ C for not less than 3 hours or at such other temperature and period of time approved by the QCRS Inspector to effectively sterilize the contents and render the products unsuitable for human food purposes.

(ii) Incineration or complete destruction by burning.

(iii) Chemical Denaturing -

(a) Chemical denaturing, which shall be accomplished by the liberal application to all carcass and parts thereof with one of the following:-

(i) Crude carbolic acid.

(ii) Creosylic disinfectant.

(iii) Kerosene, fuel oil, or used crankcase oil.

(iv) Any phenolic disinfectant of at least 2 % solution.

(v) Any other substance or method approved by the officer in charge of meat inspection in specific cases, which will denature the products to the extent necessary to accomplish the purposes of this section.

(b) For the purposes of effective chemical denaturing the condemned material shall be freely slashed before the denaturing agent is applied except that, in the case of dead animals that have not been dressed, the denaturant may be injected. The denaturant must be deposited in all portions of the carcass or product to the extent necessary to preclude its use for food purposes.

(c) Denaturants must be used in a concentration sufficient to impart a distinct odour, and thus be easily discernible upon the product.

(d) Dyes alone are not acceptable as denaturants, however they may be combined with the chemical denaturants as a visible indicator that denaturing has taken place.

l. No carcass shall be brought into an establishment unless written permission has been obtained from the Veterinary Officer in charge of meat inspection; unless the animal die of non-infectious disease in a shipment of animals enroute to the abattoir for slaughter.

4. POST-MORTEM INSPECTION PROCEDURES – GENERAL PRINCIPLES

a. Routine post-mortem inspection should include viewing, palpation and, where necessary, incision. This inspection should be carried out in a hygienic and systematic manner.

b. Where a lymph node, organ or any carcass tissue is being incised by the inspector, the cut surface should be clearly sliced in order to present a picture which is not distorted. Where an incision is required to be made, the inspector should as far as possible prevent any risk of contamination.

c. Viscera should be examined:

(i) as they are removed from the carcass; and/or

(ii) after their removal from the carcass, in which case they should be clearly identifiable with the carcass until inspection has been completed.

d. If incisions are made, every precaution should be taken to prevent contamination of the premises, equipment and personnel.

e. Where in the opinion of the inspector:

(i) a more detailed post-mortem examination; or

(ii) a microbiological, parasitological, chemical or histopathological examination; or

(iii) any other examination necessary to render a judgment on a carcass or viscera, is required, he should take all necessary specimens from such carcass or viscera for the required examination.

f. The final responsibility as to the decision on fitness for human consumption rests with the officer in charge of meat inspection.

g. The judgement of carcass and parts thereof involves:

(i) Trimming of affected parts like bruises, pneumonia, milk spots and etc.

(ii) Local condemnation of affected organs like in chronic fascioliasis, hydronephrosis, pericarditis and etc.

(iii) Total condemnation of carcass and organs like in specific diseases, e.g. septicaemia, melioidosis and etc.

A. POST-MORTEM INSPECTION PROCEDURE -- BY SPECIES

I. CATTLE

(1) Handling and Inspection of Heads

a. Horns, pieces of hide including eyelids and lips and in any chance soilage by ingesta, etc. shall be removed prior to washing of the head. Washing of the head shall take place in head cabinets specified for that purpose or alternatively in compartments or areas where splash from wastewater is controlled.

b. Complete and thorough flushing of the nasal, buccal and oral cavities shall be carried out so that all ingesta is completely removed prior to washing of the outer surface of the head. Washing of the head shall be carried out to the satisfaction of the officer supervising slaughtering operations. Tonsils shall not be cut during dropping of the tongue and shall be removed intact from the head or from the tongue-root prior to inspection of the head.

c. Inspection procedures shall include:

(i) A visual examination of all exposed surfaces of the head. Cheeks shall remain in situ until inspection of the head has been completed. The lateral and medial masseter muscles shall be incised in a plane parallel to the mandible.

(ii) Incisions shall be made in all the major lymph nodes associated with the head; parotids, submaxillarys and retropharyngeals.

(iii) The tongue shall be palpated and any scars, teeth wounds or traumas due to foreign objects excised. An incision should be made longitudinally and ventrally into the muscles of the tongue.

(2) Inspection of Carcass

a. The carcass should be examined to ascertain:-

(i) condition;

(ii) efficiency of bleeding;

(iii) colour;

(iv) condition of serous membranes (pleura and peritoneum);

(v) abnormalities;

(vi) cleanliness;

(vii) odours.

b. The skeletal muscles, including the attached fat and connective tissues, the bone, especially those which have been cut and exposed during the splitting of the carcass, the joints, the tendon sheaths, the diaphragm, pleura and the peritoneum should be viewed.

c. Incisions shall be made into; superficial inguinal and internal iliac lymph nodes.

d. If warranted, incisions shall be made into; precrurals, isciatic, prescapular and popliteal lymph nodes.

e. Carcass suspected for tuberculosis must be retained with the relevant organs for examination by a Veterinarian.

f. In all animals reacting to the tuberculin test and in those carcass and viscera in which tubercular lesions are found, the main carcass lymph nodes should be examined. A similar procedure should be carried out in all cases in which a systemic or generalized disease is suspected to exist.

g. Caution should be exercised in handling the viscera, especially the uterus, in Brucella-positve animals. Workers may contract the disease via wounds or skin abrasions.

(3) Inspection of Viscera

a. Hearts shall be prepared and inspected by one of the methods:

b. The surface of the heart shall be examined, and a longitudinal incision made extending from base to apex through the wall of the left ventricle and the interventricular septum, after which the inner surfaces of the ventricles shall be examined and incised by at least four incisions if the presence of parasitic cysts is suspected.

c. Aorta- A longitudinal incision shall be made along the full length of the aorta caudalis.

d. Liver - Both the parietal and the visceral surface of the liver shall be visually inspected. The portal lymph nodes shall be incised. An incision should be made along the main bile duct. Remove gall bladder neatly.

e. Lungs - The costal and the mediastinal surfaces shall be visually examined and palpated. The bronchial and mediastinal lymph nodes shall be incised. The trachea, main bronchi and branches shall be split to detect the presence of foreign material and parasites.

f. Spleen - Shall be visually inspected and palpated.

g. Oesophagus - Shall be examined visually.

h. Intestines - Shall be visually inspected. The mesenteric lymph nodes shall be incised, if warranted. The junction of the rumen and reticulum shall be palpated for the presence of abscesses.

i. Kidneys - Shall be examined after enucleation of the capsule.

j. Mammary glands - Shall be visually examined and palpated.

k. Uterus - Shall be visually examined unless it belongs to a Brucella-positive animal whereby it is packed and sent to the diagnostic laboratory for Brucella isolation.

II. PIG

(1) *Handling and Inspection of Heads*

Inspection shall ensure that the carcass has been thoroughly cleaned of scurf, bristles and loose hairs. *Submaxillary lymph* nodes may be incised if *tuberculosis* is suspected.

(2) ***Inspection of Carcass-***

a. The carcass should be examined to ascertain:

(i) condition;

(ii) efficiency of bleeding;

(iii) colour;

(iv) condition of serous membranes (pleura and peritoneum)

(v) abnormalities;

(vi) cleanliness- where applicable proper scalding and dehairing ;

(vii) odours.

b. The skeletal muscles, including the attached fat and connective tissue, the bones, especially those which have been cut and exposed during the splitting of the carcass, the joints, the tendon sheaths, the diaphragm, pleura and peritoneum.

c. The site of castration should be visually examined.

d. The following lymph nodes should be viewed:

(i) superficial inguinal;

(ii) precrural;

(iii)iliacs.

e. If one of the iliacs are grossly enlarged, arthritis of the corresponding hind limb should be suspected and thus the carcass should be tagged for detention.

f. When a systemic or generalized disease is suspected to exist, the main carcass lymph nodes should be examined.

g. The vertebral column of a carcass shall be split if pyaemia is suspected. Similar procedure should be carried out if there is a necrotising tail wound.

(3) ***Inspection of Viscera***

a. Heart - Visual inspection.

b. Lungs - Visual inspection and palpation.

c. Liver - Examine the visceral and parietal surfaces. Remove gall bladder neatly.

d. Kidneys - Examine after enucleation of capsule.

e. Intestine and stomach - Visual inspection.

f. Spleen - Visual inspection.

g. Uterus - Visual inspection.

III. GOATS AND SHEEP

(1) Handling and Inspection of the Head

a. Horns, pieces of hide including eyelids and lips and any chance of soilage by ingesta, etc. shall be removed prior to washing of the head.

b. The nasal, buccal and oral cavities should be thoroughly flushed. A general and visual examination must be done on the head.

(2) Inspection of Carcass

a. The carcass should be examined to ascertain:

(i) condition;

(ii) efficiency of bleeding;

(iii) colour;

(iv) condition of serous membrane (pleura & peritoneum);

(v) abnormalities;

(vi) cleanliness ;

(vii) odours.

b. The skeletal muscles, including the attached fat and connective tissues, the bones, the joints, the tendon sheaths, the diaphragm, pleura and peritoneum should be viewed.

c. The following lymph nodes shall be incised:

(i) superficial inguinals;

(ii) precrurals;

(iii) prescapulars;

(iv) popliteals ;

(v) iliacs.

(3) Inspection of Viscera

(i) Heart -Visual inspection.

(ii) Lungs - Visual inspection and palpation.

(iii) Liver - Both the parietal and visceral surfaces shall be examined. Bile duct shall be incised and gall bladder neatly removed.

(iv) Kidneys - Visual inspection after enucleation of the capsule.

(v) Spleen, Stomach and Intestines - Visual inspection.

II. RECOMMEDED CODE OF ANTE-MORTEM AND POSTMORTEM INSPECTION – POULTRY SPECIES

1. ANTE-MORTEM INSPECTION

The same general principles apply to poultry as for large animals. If poultry are not inspected at the farm it is necessary to remove dead, emaciated and those suffering from injuries and the ante-mortem inspection should be conducted at the processing plant on the day of slaughter after the birds have been rested. Its purpose is to detect and condemn birds that are unfit for slaughter and to detect signs or lesions of disease that may not apparent after slaughter.

Ante-mortem inspection in poultry should be carried out in large batches, unlike individual inspection in other food animals. The relative small size of poultry combined with the large numbers slaughtered per hour makes it impossible to carry out AM inspection effectively on each individual bird.

Individual or batch of birds detained on general health picture must be slaughtered at the end of day's kill.

2. POSTMORTEM INSPECTION

On-line postmortem inspection of carcasses is carried out at the point of exit from the eviscerator. Inspection is carried out by a trained meat inspector who detects any evidence of unwholesomeness requiring that a carcass or a part of it be condemned.

2.1 Facilities Required

An inspection station of 8 feet of unobstructed line space should be provided for each inspector and inspector's helper. Hand wash facilities, conveyor line control switch, and facilities to position tally sheets or other recording devices should be within easy reach of the inspector. Hang back racks and receptacles for condemned carcasses and parts should be provided at the inspection station. Adequate lighting of at leat 600 lux of shadow free light shall be available at the inspection surfaces of the bird to facilitate inspection. A 0.9m by 0.6m distortion free mirror properly mounted is also required for the inspector to view the back of the carcasses.

2.2 Procedures for Postmortem Examination

Poultry meat inspection in each carcass is carried out in a continuous manner as listed below:

a) Examine external surfaces for dressing defects, bruises or disease lesions.
b) Palpate tibia to detect bone diseases.
c) Examine inner surfaces, lungs and kidneys in place.
d) Examine viscera and palpate liver, heart and spleen

The efficiency of on-line inspection of carcasses is dependent on the facilities at inspection station (as discussed), line arrangement, the spacing of birds, the incidence of disease, and the ability of the plant to present carcasses for inspection which are properly dressed and drawn.

An important point to note is that carcass handling at inspection can be an important point of contamination. Therefore, strict sanitation must be observed to minimize contamination.

2.3 Judgment of Poultry Carcasses or Parts Thereof

The carcasses or parts thereof of all poultry inspected at a slaughterhouse and found at the time of postmortem inspection, or at any subsequent inspection, to be affected with any disease or conditions shall be dealt with in accordance with the followings:

a. (i) has died otherwise than by being killed in the course of the process; or

   (ii) is unwholesome, shall not be used in the preparation of poultry meat for human consumption

b. General Abnormal Conditions

c. Air sac infection:
   (i) If the lesions are severe and the carcass is emaciated or there is systemic disturbance the entire carcass shall b condemned.

(ii) If the lesions are slight and restricted to the affected part of the carcass shall be removed and condemned, and the balance of the carcass passed for human consumption if it is otherwise wholesome.

d. Bruise

(i) The whole carcass shall be condemned if the bruising is severe and extensive.

(ii) If only part of the carcass is bruised then only that part shall be removed and condemned, and the rest of the carcass passed for human consumption

e. Biological residues

All carcasses, organs or parts thereof shall be condemned if it is determined that they contained biological residues.

f. Cadavers

Carcass showing evidence of having died from cause other than slaughter shall be condemned

g. Contamination

Carcasses contaminated by extensive bile or feacal spillage, volatile oils, paints, poisons, gases, scald vat water in the air sac system or other substance which render the carcass unfit for human consumption shall be condemned.

h. Decomposition

Carcasses deleteriously affected by postmortem changes shall be disposed off as follows:

(i) Carcasses which have reached a state of putrefaction or stinking fermentation shall be condemned.

(ii) Carcasses affected by types of postmortem changes which are superficial in nature and limited in extent, shall be passed for human consumption after removal and condemnation of affected parts.

i. Gout

Carcasses affected with gout and showing marked deposits or urates in the organs or tissues or evidence of general systemic disturbances shall be condemned

j. Inflammatory Process

(i) If the inflammatory process is wide-spread or there is evidence of systemic disturbance the whole carcass shall be condemned

(ii) If the inflammatory process is localized, affected part shall be removed and condemned, and the remainder of the carcass shall be passed for human consumption if it is otherwise wholesome.

k. Overscalded
Carcass which have been over scalded, resulting in a cooked appearance of flesh, shall be condemned

l. Parasitic Infestation
(i) If the parasitic infestation is extensive or if the carcass is emaciated, the entire carcass shall be condemned.

(ii) If the parasitic infestation is slight, the affected part shall be removed and condemned, and the remainder of the carcass shall be passed for human consumption if it is otherwise wholesome.

m. Pyemia, Septicemia or Toxemia
Carcass showing evidence of any pyemia, septicemia or toxemia shall be condemned.

n. Tumours
(i) Any organ or part affected with a tumour shall be removed and condemned and the remainder shall be passed for huma consumption if the carcass as a whole is not affected and is otherwise wholesome.

(ii) The entire carcass shall be condemned if there is evidence of metastasis or that the general condition of the bird has been affected by the size, position or nature of tumour.

(iii) Emaciated carcass which are poorly fleshed with obvious wasting of the breast and thigh muscle shall be condemned.

o. Specific Diseases
(i) Carcass affected with any one of the following diseases shall be condemned:

(a) Avian Leucosis Complex;

(b) Botulism;

(c) Erysipelas;

(d) Listeriosis;

(e) Ornithosis;

(f) Paratyphoid; or

(g) Tuberculosis

where a carcass shows only localized lesions and no systemic disturbances caused by any disease other than those mentioned in sub-paragraph 2.3.13.a, the affected parts of the carcass shall be removed and condemned, and the remainder of the carcass shall be passed for human consumption if it is otherwise wholesome.

p. Condition not provided for:

In the event of a condition not provided for under these rules, the Inspector may exercise his judgment in arriving at a decision as to the eventual disposal of a diseased or contaminated carcass or portion thereof.

q. Poultry meat which touches the floor, or any other part of the plant, may matter or thing in the plant other than the equipment by which it is being processed or the material in which it is packaged shall be considered to be contaminated.

r. Poultry meat which is touched by any person, other than the person by whom it is being processed or an inspector acting in the lawful exercise of his duties under the ACT, shall be considered to be contaminated.

s. Poultry meat which is contaminated shall not be used in the preparation of poultry meat for human consumption unless it is washed or trimmed, as the case may require, removing any contamination.

ANNEXURE – XI: MINIMUM STANDARD FOR MEAT RETAILING AND TRANSPORTATION

1. The meat shop must be located in the area that is free from objectionable odours, smoke, dust or other contaminants. It is the responsibility of meat shop owner to keep his/her premises and surroundings clean.
2. In order to avoid harboring of bacteria and other contaminants, all internal finishes must be made of corrosion-resistant material, and must be smooth, impervious and easy to clean and disinfect. Joints, doors and windows must be fitted so as to prevent the entry of insects and rodents. All outlets like drainage must be also made rodent and insect proof.
3. The floor must be made of concrete, non-absorbent, washable, non-slip, without crevices, and must be easy to clean and disinfect. Floors must slope sufficiently for liquids to drain to trapped outlets and to proper sewerage. At all times, it must be kept clean and dry.
4. The walls must be water proof, non-absorbent, washable and painted white in color from floor to ceiling. It must be kept clean at all times. Angles between walls, between walls and floors and between walls and ceilings must be sealed and covered to facilitate easy cleaning.
5. Ceilings must be made of concrete or ply-board and painted white in color. It must be impervious to dirt and dust and must be kept clean at all times.
6. The meat shop dealing in fish and chicken must have minimum dimension of 96 sq. ft with minimum of 8 ft. breadth in the front (sale counter). Those dealing in fish, chicken and pork must have minimum of 150 sq. ft with minimum of 10 ft. breadth in front part. The minimum height from floor to the ceiling must be 8 ft. The meat shop dealing only in beef must have minimum of 8 ft. x 12 ft. for every 500 kg of beef dealt in a day. The minimum height from floor to the ceiling must be 8 ft.
7. Meat shops must have continuous water supply throughout the day. In places where water supply is not continuous, adequate overhead water storage tank of enough capacity must be provided. The water supply must be under adequate pressure and potable. Water used for making ice must also be potable and ice must be manufactured, handled, stored and used so as to protect it from contamination.
8. Meat shops must have hand-washing facilities, including water, soap and suitable hygienic means of drying hands.
9. Meat shops must have proper drainage facility to drain out the meat effluent to closed sewerage drains.
10. Chicken and fish must be stored in the deep freezer and sold directly from deep freezer. Deep freezer must not be loaded beyond its designed capacity. It must be functioning all the time and required temperature must be maintained. (Deep freezer must be maintained at or below -18°C). Deep freezer must be washed and cleaned frequently and regularly.
11. Head, visceral organs and feet shall be removed from dressed chicken and shall not be allowed to be sold attached with dressed chicken. Edible offal like liver, heart and gizzards shall be transported and sold in separate containers.
12. A standard deep freezer(s) of enough storage capacity as per the quantity of meat dealt must be available for the storage of the meat that is being held for sale. Different types of meat must be stored separately in separate freezer.

13. Holding of meat in the bamboo baskets or stacking on the floor or keeping immersed in water with or without ice is strictly prohibited.
14. Beef and Pork must be hung or placed in suitable corrosion-resistant trays, in such a manner as to permit adequate circulation of air around the meat.
15. Meat must be hung in a manner that precludes drips from one piece falling onto another. Distance between meat and the side wall must be at least 12 inches. Meat must not come in contact with walls and must be hung so that lower end of meat must be at least 1 meter above the floor level.
16. Edible offal of cattle, pig, goat, etc shall be transported and sold in separate containers. Stomach and intestines of these food animals meant for human consumption shall be properly cleaned, transported and sold in separate containers. Keeping of improperly cleaned stomach and intestine on display counter or keeping them on floor of meat shop is strictly prohibited. Trotters should be dehaired properly, hooves should be removed and it shall be transported in separate container without allowing them to come in contact with meat. Head of cattle, yak, buffalo, sheep, and goat if meant for human consumption shall be dehaired, dehorned and cleaned properly and transported and sold in separate containers without allowing them to come in contact with meat.
17. The hook used for hanging meat should be preferably made of stainless steel or if made of iron, it should be painted white.
18. In beef and pork stalls, there must be sufficient number of fans to maintain enough circulation of cold air. A cold room facility must be set up especially those dealing in huge quantities of meat.
19. A clean cutting table must be provided for chopping of meat. The minimum height of cutting table should be 1 meter above the floor. Cutting of meat on the floor is strictly prohibited.
20. All equipment used for handling or coming in contact with meat must be kept cleaned all the time and stored in a proper and clean place.
21. All types of meat sold must be wrapped in clean suitable packing materials (like edible grade plastic foil used for wrapping food) sufficient enough to protect the meat from contamination. Packing materials must be stored and used in a clean and sanitary manner.
22. Meat must not be placed in any means of transport that has not been cleaned before loading and, if necessary, disinfected. The disinfectant should be washed off with clean water. Where human labour is used for transportation, the health requirements for meat handlers should be complied with.
23. Vehicles intended for the transport of meat must be equipped so that meat does not come in contact with the floor.
24. Meat shop owner shall issue cash receipt to the customer for every transaction conducted.
25. A certificate issued by the BAFRA official certifying the suitability of meat as “Fit for Human Consumption” must be displayed at a place where the customer can easily read it.
26. All salespersons must be registered with the local office of BAFRA. For registration, the owner must submit their name(s) and photocopy of citizen ID card.
27. No other person other than those registered with local BAFRA office shall be allowed to handle and sell meat.

28. Salespersons must wear a white apron with full arm sleeves along with half arm plastic/rubber gloves that can be easily washed. He/She must make sure that the apron and gloves are kept clean at all times.
29. Salespersons must display the ID card issued by BAFRA identifying their permission to handle and sell meat while in meat shop.
30. The owner must notify the local BAFRA office one month in advance for the change of salesperson(s) for issuance of ID card granting him/her permission to handle and sell meat.
31. Good personnel hygiene must be observed by salesperson(s). Smoking, chewing of tobacco and *doma* are not allowed while in meat shop. He/She must wash hands every time after getting into the meat shop.
32. Person(s) handling or selling meat must have a valid medical certificate stating he/she is free from any communicable diseases issued by authorized government medical doctor. The certificate must be renewed or a new one obtained at six monthly intervals.
33. Any salesperson affected with Hepatitis A (jaundice), diarrhea, vomiting, fever, sore throat with fever, visibly infected skin lesions (boils, cuts, etc. however small), discharge from ear, eyes, nose must not be allowed to handle or sell meat until he/she is fully recovered.

34. Basic design and construction of Meat Delivery Vehicle should comply with the following conditions:
    (i) The meat compartment should be completely separated from the driving cabin and should have an adequate capacity for the consignment intended.
    (ii) The compartment where the meat is being conveyed should be kept covered and enclosed so as to protect the meat and edible offal from dust, flies, and all other sources of contamination.
    (iii) All internal finishes should be made of corrosion-resistant material, smooth, impervious and easy to clean and disinfect. Joints, rivets and doors should be effectively sealed so as to prevent the entry of pests and other sources of contamination. Floor to wall junction should be coved to a radius of 50 mm.
    (iv) The meat compartment should be well insulated with approved material to maintain the meat at required temperature.
    (v) Vehicles intended for the transport of meat should be equipped in such a manner that the meat does not come into contact with the floor. Height of railings should be such when quartered carcass is hung; the lowest portion of the latter has the clearance of not less than 75 mm above the floor.
    (vi) Suitable racks and closed containers should be used for the transport of unwrapped edible offal.
    (vii) The floor of the conveyance should not be walked on during loading or loading except by persons wearing suitable protective clothing and covering over their footwear.

ANNEXURE – XII: ABATTOIR CATEGORY – A

Those abattoirs approved by BAFRA as commercial purpose with a relatively high capacity of over 300 heads of animals per week and over 15,000 birds per week.

A. MINIMUM STANDARDS OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF SLAUGHTER HOUSE - LARGE & SMALL ANIMAL

1. Approval

1.1 Construction of new premises should not commence and alterations to existing registered premises must not commence before the plans of the premises and associated specifications have been approved.

1.2 Where plans and specifications are modified during construction or alterations, amended plans and specifications must be submitted for approval.

1.3 Floor, wall and ceiling finishes, and surface finishes having direct contact with edible product, must not be used in the new premises or existing registered until the finishes have been approved.

1.4 Slaughtering establishments must request for inspection of the premises by the controlling authority -BAFRA before being considered for registration. 'Veterinary Inspected BHUTAN Logo' is awarded to the abattoir or plant when they comply with the standards laid down by BAFRA

2. Submission of plans

2.1 Two copies of plans, specifications and other information necessary to facilitate consideration of approval must be submitted to the controlling authority.

3. Plans

3.1 Plans must be drawn in accordance with the following:

- the paper size must be International A or B series and must not exceed 1189 mm x 841mm

- drawings must be legible, with sharp clear lines

- drawing of sites and building layouts must indicate the north point of the compass

- essential dimensions, including the dimensions of rooms and sections, must be shown

- the scale must not be less than:

- site plans - 1 :500

- floor plans - 1 : 50

4. Plans and specification requirements for new premises

4.1 Contour map

4.1.1 A contour map fully and clearly illustrating and describing the location of the applicant's premises, together with an aerial photograph if available, must be provided with the plans and specifications.

4.2 Site plan

4.2.1 A site plan of the entire premises showing the location of any buildings, railroad sidings, roadways and alleyways adjoining the plant must be provided. In addition, the site plan must show any streams, catch basins, water wells, reservoirs and storage tanks.

4.2.2 The external boundary of the premises that it is proposed to register as a registered establishment must be clearly indicated.

4.3 Floor plan

4.3.1 A floor plan of each level in all buildings must show the locations of the following:

- walls, partitions and posts

- doorways, windows and other openings

- rail systems for conveying carcass or parts

- chutes

- principal pieces of equipment

- hot water and cold water hose points

- handwashing facilities

- sterilizers

- stairways

4.4 Roof plan

4.4.1 A roof plan showing vents, roof mounted equipment and other relevant information must be provided.

4.5 **Section and elevation drawings**

4.5.1 Cross-section and elevation drawings of all buildings must be provided, and must show:

- the character and finish of floors, walls, partitions and ceilings
- the heights of ceilings
- principal places of equipment
- the height of any rails

4.6 **Drainage plan**

4.6.1 A detailed plan that shows how floor drainage, effluent, sewage and stormwater is collected and removed from all buildings must be submitted.

4.7 **Specifications and notations**

4.7.1 Specifications and notations must cover such items as the following:

- flow of operations
- source of water supply
- a description of the hot water supply
- protection of outer openings that would admit insects and other vermin.

ABATTOIR FACILITIES AND OPERATING REQUIREMENTS

PART I - SITE SELECTION AND APPROVAL

1. General Conditions

1.1 Adequate supply of potable water, electricity should be available to meet the anticipated peak demand.

1.2 Drainage facilities including disposal of works effluent, stormwater and site drainage and sewage disposal, must be available at site.

1.3 The area should be reasonably free of dust, and of odours, smoke, ash and other such things as are sometimes produced sawmills, oil refineries, city dumps and sewage disposal systems.

1.4 It is desirable that trees and natural landscaping be retained where possible.

1.5 Sites with undesirable soil types which can create drainage problems, waterlogging and flooding should be avoided.

1.6 The area of land required should be determined before selecting the site. Space should be sufficient for such things as holding yards, lairage, vehicular roadways, parking areas, effluent ponds and other ancillary constructions.

2 Expansion

2.1. Then planning the premises, careful consideration should be given to the design to allow space for expansion.

PART II - ABATTOIR CONSTRUCTION AND LAYOUT

1. General

1.1 No portion of abattoir should be used as living quarters.

1.2 Abattoirs should provide adequate working space for the satisfactory performance of all operations.

1.3 The construction should be sound and ensure adequate ventilation, good, natural or artificial lighting and easy cleaning. In addition, it should protect against the entrance and harbouring of insects, birds, rodents or other vermin.

1.4 The building and facilities of the abattoir should be kept in good repair at all times.

1.5 In all rooms in an abattoir or establishment other than the rooms provided for accommodation of workers and inspector:

1.5.1 Floors

- Floors should be impervious to moisture, non-toxic, non-absorbent, easy to clean and disinfect. They should be acid resistant, relatively smooth but not slippery, evenly graded to drainage inlets so that liquid does not accumulate.

- Grouting used between tiles in floors should be impervious to liquids and of the minimum practical width.

- Floor joints should be sealed with material impervious to liquids and finished flush with the surface.

1.5.2 Internal walls:

- Walls should be impervious to moisture, smoothly finished, rust resistant, and resistant to or protected from impact, not readily subject to chipping or flaking, easy to clean and disinfect.

- Joints and fixing devices should be sealed to effectively to prevent entry of moisture.

- When walls are not of full height, they should be capped with a 45^0 sloping top.

- Where internal panel type construction is to be incorporated, other than in freezer stores or blast freezers, wall panels should be placed on a concrete plinth raised a minimum of 150 mm above the floor.

- Wall panel construction should be suitably protected in any area where impact damage might occur. This may be by installing bump rails or fixing suitable approved materials to the panel.

- Where internal wall or ceiling surfaces are painted, the paint should be non-toxic, impervious to moisture, withstand reasonable degree of impact and hosing with detergents and 82^0 C water.

- Walls and curbs should be coved to the floor with a radius of at least 75 mm. while wall-to-wall junctions should be coved to at least 25 mm.

1.5.3 Ceilings:

- It is recommended that ceilings be provided in all rooms of slaughter floors and processing buildings.

- Ceilings should be constructed from approved materials smoothly finished, impervious to moisture and prevent condensation. Joints and fixing devices should be effectively sealed.

1.5.4 Passageways, doors and jambs:

- They should be constructed from, or sheathed with rust resistant materials.

- Where sheathing is used, joints should be effectively sealed by continuous welding to prevent entry of moisture. Fixing devices such as pop rivets or screws should be effectively sealed to prevent crevices which are difficult to clean.

- Doorways through which product is transferred by rail or truck should be at least 1.5 m wide.

1.5.5 Columns, stairways and windows:

- Columns should be sheathed with approved material and so located where meat contact might not occur.

- Stairways should be constructed of material impervious to moisture, and have solid treads, closed risers and solid curbs. Side curbing should have a minimum height of 150 mm.

- Windowsills should be not less than 1.8 m from floor level. Internal sills should be sloped at an 45^0 angle.

2. Refrigeration facilities

2.1 Chillers, freezers and freezer stores should be located In an edible product section of the premises.

2.2 The construction and layout should satisfy the requirements of this chapter and comply with the provisions as detailed in 1.5.2

2.3 Sufficient space and rail length should be made available in chillers to allow carcass or sides to hang freely so that good air circulation is achieved which is able to reduce or maintain the temperature of the product to the desired degree.

2.4 Lighting intensity should be 220 lux.

3. Boned-out or Cut-up facilities - Design, Construction and Location

3.1 Consideration should be given to the operations and flow of materials associated with boning or cutting to ensure a smooth product flow, and facilitate inspection.

3.2 Boning, cutting and primary wrapping rooms should be separated from packaging room.

3.3 The boning room should be in an edible product section of the establishment and suitably separated from inedible departments.

3.4 Sufficient numbers of approved pedal or thigh operated basins or troughs, liquid soap dispensers and approved hand drying systems should be at personnel entrances to the boning room.

3.5 Basic construction requirements should be in accordance with 1.5.2.

3.6 Sufficient stainless steel deboning tables with approved receptacles for trimmings should be provided.

3.7 Equipment should be provided capable of maintaining the room at not more than 10^0 C during boning and packing.

3.8 A recording thermometer should be provided to indicate room temperature.

3.9 Lighting intensity should be 400 lux.

3.10 A sufficient number of hot and cold hose points should be provided to service the area. Hose racks should be made of rust resistant materials. Hoses should be adequate in number and hung vertically. Lengthy unwieldy hoses is a nuisance and should be avoided.

3.11 Handwash basins, liquid soap dispensers, and sterilizers should be strategically located.

4. Inspection facilities

4.1 A table large enough to hold four (4) cartons should be provided.

4.2 Approved lighting facilities with intensity of 600 lux should be provided at all times.

4.3 There should be ready access to a hand wash and sterilizer unit.

5. Effluent and Waste Disposal

5.1 Abattoirs and establishments should have an efficient effluent and waste disposal system which should at all times be maintained in good order and repair. All effluent lines (including sewer systems) must be large enough to carry peak loads. All lines must be water-tight and have adequate traps and vents. Catch-basins, traps, save-all and sumps should at all times be kept separate and apart from any department in which meat is prepared, handled, packed or stored. Disposal of waste should be effected in such a manner as to avoid contamination of potable water supplies.

5.2 Three entirely separate drainage systems should be provided as follows:

- Sitary drainage
- Pocessing or Trade waste drainage
- Storm water drainage

6. Amenities

6.1 Facilities for meat inspection personnel and employees although identical they must be separated.

6.2 Should provide adequate changing room accommodation, drying rooms, lunch room, toilets with flushing water closets, showers and hand washing facilities which should have adequate lighting, ventilation and should not open directly to any work areas.

6.3 Hand washing facilities with hot and cold water, with taps of a non-hand operable type and suitable hygienic means of drying the hands should be provided adjacent to every toilet. Where paper towels are used, a sufficient number of dispensers with paper towels and receptacles for used towels should be provided adjacent to each washing facility.

6.4 Waste from these facilities should not join the plant effluent system.

7. Office accommodation

7.1 A well-located and lockable office having dimensions of at least 3 m x 3 m exclusively for the meat inspection staff.

8. Laboratory facilities

8.1 Laboratory facilities consisting of a separate room strategically located having a floor area measuring at least 5 m x 3 m must be provided on the slaughtering establishment.

PART III - SANITARY FACILITIES AND CONTROL

1. Facilities like dips, security guard posts and hose points at the entrances and exits of the abattoir should be provided. Ideally, a one-directional flow of live animals through an entrance nearest to the holding yard/lairage and exit of processed meat or product through another gate is preferable.

2. There should be adequate and well-equipped areas reserved for the use of the meat inspection services at lairages, slaughter lines, boning rooms and packaging rooms.

3. Receival and Lairage areas:

3.1 Suitably designed receival areas for incoming stock adjacent stock pens should be provided. The receival area should be paved with impervious material adequately drained and capable of being readily cleaned.

3.2 Unloading ramps designed to suit the means of transport / class of livestock must be provided to ensure that the animals are not put at risk of injury.

3.3 Appropriate facilities should be so arranged as to permit proper inspection of the animals before slaughter.

3.4 Lairages and yards should be suitably constructed and maintained, paved or slatted, well drained and furnished with an adequate piped water supply, and preferably with an overhead cooling sprinkler facilities.

3.5 Sufficient hose points with adequate water pressure should be available to enable the lairages, yards, races and unloading ramps to be cleaned. Drinking devices (water troughs) should be provided connected with adequate supply of potable water.

3.6 Lairages and yards should be of such a layout that cross traffic of animals of different species is avoided.

3.7 There should be a sufficient number of paved or slatted pens to hold an entire festive day's tally for each species of stock to be slaughtered. The following lairage space for each species of stock is recommended:

Cattle:	2.6 m^2 per head
Sheep/Goats:	0.47 m^2 per head
Pig:	1 m^2 per head

3.8 Holding pens, lairages, races and walkways should be roofed to protect the animals from inclement weather and heat stress.

3.9 Adequately sized and roofed suspect pens for each class of stock should be provided and should incorporate the following:

- An effective crush.
- Handwashing facilities consisting of a washbasin operated by a foot pedal or thigh, a soap dispenser, a paper towel dispenser and a used towel receptacle must be provided.
- A lockable facility for storing equipment used for ante-mortem inspection is to be provided.
- Suspect pens should be clearly signposted with the words 'Suspect Pens'
- Suspect pens must be separately drained via a perimeter drain channel to the manure settling pit and drainage not allowed to flow over other pens or alleyways.

4. Boot-washing facilities should be provided and suitably located to enable the washing of footwear of personnel leaving the pen area.

5. Where a manure-settling pit is installed, it should be away from the building where meat is handled and so constructed to facilitate frequent cleaning.

6 Toilet and hand washing facilities should be provided in the vicinity of the stock pens.

7. Suitably located facilities for the adequate cleaning and disinfecting of vehicles should be provided.

8. There should be adequate slaughter and dressing rooms to enable the work to be performed in a satisfactory manner.

9. Those operations which carry a risk of contamination of meat suitable for human consumption should be sufficiently separated from other operations to avoid the risk of contamination.

To achieve this there should be:

9.1 Complete physical separation between departments processing edible and inedible material.

9.2 A separate room for emptying and cleaning the digestive organs.

9.3 Separate facilities for the preparation of edible fats and if they are not removed daily from the premises, should have facilities for their storage.

9.4 Separate rooms for the storing of hides, horns and hooves, and inedible animal fat unless these are removed daily from the abattoir.

9.5 Reserved premises for the accommodation of sick or suspect animals, the slaughter of such animals, and lockable rooms for the storage of detained meat and the storage of seized meat designed so as to prevent the risk of contaminating other meat and the risk of substitution.

9.6 Rooms, equipment and utensils provided for slaughtering and dressing should be used for this purpose only and not for boning-out, cutting-up, holding or other handling of meat.

9.7 Abattoirs should be designed and equipped so as to ensure that meat does not come into contact with floors, walls or other fixed structures.

10. Slaughtering floors should be fitted with equipment enabling animals to be bled and carcass to be dressed in a hanging position; if, however, metal cradles are used for flaying, they should comply with the provisions of this Part (no. 23) and should be high enough to ensure that the meat does not touch the floor.

11. Abattoirs and establishments should be equipped with an overhead rail for dressing the carcass and transporting them through the various stations. The slaughtering systems may be either *on-rail gravity, on-rail moving* or *a combination of the above.*

12. Abattoirs having a throughput rate of greater than 40 carcasses an hour should resort to a moving carcass conveyor type synchronized with a moving viscera conveying system.

13. The dressing rails should be high enough so that the lowest part of any carcass is at least 300 mm above the floor. They should be located, and the passage way space provided, so that the exposed product does not come in contact with posts, columns, lift cages, walls, and other fixed parts of the building, or other containers trafficked through holding and operating areas. Exposed products shall not be placed or stored beneath carcass in chillers or holding areas.

14. Moving chain systems should provide for a minimum carcass spacing of 1.5 m before evisceration and 2.4 m at, and after evisceration.

15. Minimum spacing of carcass sides after splitting should be 1.2 m.

16. Hand wash and sterilizer facilities should be provided at slaughter area, dehiding station, brisket splitting, evisceration, carcass splitting, inspection, deboning, preparation, packing or other handling of meat, conveniently located for the use of personnel during operations. These facilities are for use exclusively in the cleaning and disinfection of knives, steels, cleavers, saws and other implements. The water used for the washing of hands should be warm. Taps of handwash facilities should be of a non-hand operable type. An adequate supply of odourless liquid soap or other cleansing agents should be supplied.

17. An ample supply of potable water under adequate pressure should be provided with adequate facilities for its storage, of distribution and with adequate protection against contamination and pollution.

    17.1 All water used in abattoirs and establishments should be potable.

    17.2 Non-potable water may be used for such purposes as producing steam, refrigeration and fire control. Such water should be carried in completely separate lines, identified preferably by colour, and with no cross connection or back-siphonage with the lines carrying potable water.

    17.3 An adequate supply of hot potable water at no less than 82 ^{o} C should be available at all times during working hours.

18. Adequate natural or artificial lighting should be provided throughout the abattoir or establishment. The intensity should not be less than:

    600 lux at all inspection points;

    220 lux in work rooms;

    110 lux in other areas.

18.1 Light bulbs and fixtures suspended over meat in any step of preparation should be of the safety type or otherwise protected to prevent contamination of meat in case of breakage. Shatterproof protective shields should be provided over exposed lights.

18.2 Artificial lighting must not distort colours or cause shadows at the inspection surface.

19. Adequate ventilation should be provided to prevent excessive heat, steam and condensation and ensure that the air of premises is not contaminated with odours, dust, vapour or smoke. Ventilation openings should be screened. Windows should be fitted with whole panes and those which open should be screened. The screens should be made so as to be easily movable for cleaning. Internal windowsills, if present, should be sloped to prevent use as shelves.

20. All doors should be sufficiently wide and those opening from departments where edible material is handled, unless provided with an effective and operating air screen, should be solid, as far as possible self-closing, or snug-fitting double action doors.

21. All stairs located in any room or used in any department where edible material is handled should be so constructed that:

- They can be easily cleaned and no contamination can be caused by material passing through the risers or tread;

- They should have side curbs that are at least 10 cm in height measured at the leading edge of the treads.

22. Lift cages should be so constructed as to afford adequate protection of the meat against contamination. In particular the base and the sides should be finished to a smooth impervious surface. Lift shafts should be smoothly finished. The floor or lift shafts should be drained so as to permit effective cleaning.

23. Platforms, ladders, chutes, cradles and similar equipment in any room used for the preparation of meat should be constructed so as to be capable of effectively cleaned and should consist of material which is resistant to fracture, abrasion or corrosion. Where chutes are provided they should be constructed with inspection and cleaning hatches.

PART IV - EQUIPMENT AND UTENSILS

1. All equipment, implements and utensils used in abattoirs or establishments which come in contact with meat should present a smooth impervious surface, be resistant to corrosion, made of a material which is non-toxic, does not transmit odour or taste, free from pits, crevices, non-absorbent and capable of withstanding repeated exposure to normal cleaning and disinfection. Stationary equipment should be

installed in such a manner so as to permit easy access for thorough cleaning and disinfection. Such equipment should be so constructed that it may be easily cleaned.

2. Equipment and utensils used for inedible or condemned materials should be so identified and should not used for edible products.

3. Equipment and utensils for slaughtering and dressing should be used for this purpose only and not for cutting-up or boning-out or further preparation of meat.

4. No containers, wooden crates / boxes / or cartons, should be assembled or stored in parts of an abattoir or establishment where animals are slaughtered or dressed, or meat is cut up or boned, prepared, handled, packed or stored.

5. All surface of tables, benches or shelves that are liable to come into direct with meat should have an impervious, smooth surface that is free from imperfections. Tables on which edible product is handled, suitable splash backs should be provided; and tables having water on their working surfaces should be provided with turned up edges and self-draining.

6. Tanks, fertilizer driers, and other equipment used in the preparation of inedible products shall be properly equipped with condensers and other appliances that satisfactorily suppress odours incident to such preparation, and prevent them from entering the edible section of the establishment.

7. Head wash cabinet measuring (1.8m x 900mm x 900mm) with a hook positioned about 1.5m above the floor should be provided.

8. Where individual offal washing equipment is installed, an overhead spray system with sufficient pressure should be provided.

9. Hand wash basins on slaughter floors and processing rooms should have splash guards, liquid soap dispensers, knife sterilizers, thigh or pedal operated unit and receptacles for disposable paper towels or alternatively an automatic hot air hand drying unit.

a) Acceptable materials

i) Product contacting equipment should be constructed from approved material.

ii) Where galvanized steel is used for certain applications, it should be ‘smooth finished’ commercial dip.

iii) Where plastics and resinous materials are used, it must be resistant to abrasion and heat, shatter-proof and non-toxic, and in addition, the material must not contain a constituent that will migrate to meat or other products in contact with it.

b) Unacceptable materials

i) Copper, aluminum, cadmium and lead are not acceptable for equipment which contacts edible product with the exception of copper water pipes. Aluminum may be used in the construction of work stands where there is only intermittent product contact.

ii) Painted surfaces are not acceptable on any equipment area that may contact edible product.

iii) Enamel and porcelain are not acceptable where there is any possibility of product contact.

c) Design and construction

i) Interior areas in product contact zone must be coved (minimum radius of 6 mm).

ii) Welding areas should be continuous, smooth and flush with adjacent surfaces. All parts of the product contact area should be free of recesses, open seams, gaps, crevices, protruding ledges, inside threads, bolts, rivets and dead ends.

iii) Gasket and packing materials should be non-porous, non-absorbent and unaffected by food products and cleaning agents.

iv) Equipment requiring lubrication should be designed so that product is not contaminated by lubricant.

d) Installation

i) Permanently installed equipment should be mounted at least 300 mm above the floor or from any wall.

ii) Electrical control cabinets should be mounted at least 100 mm clear of the wall and exposed conduits should be mounted at least 25 mm clear of walls, columns or ceilings.

iii) The cladding of pipes in edible product areas should be suitably protected to prevent contamination of edible product.

iv) Light fittings must have shatterproof shields or covers and preclude dust and dirt accumulation. Suspended light fittings must have a 45^{0} sloping cap and suspension apparatus must not allow accumulation of dirt.

v) Work platforms and stands should be located so that the carcass does not come in contact with the platform during the dressing or other operations; and should be so constructed that it should not allow accumulation of water during operations.

vi) High platforms with rise and fall motion at dressing and inspection stations should be smooth and steady, fitted with safety rails and should be mounted with adequate clearance from adjacent fixed objects.

e) Ultraviolet lights

i) Ultraviolet lights which do not produce ozone may be used in any area, provided the lights are shielded to prevent personnel from being exposed to direct or reflective ultraviolet rays.

f) Ozone

i) The use of ozone producing equipment should be restricted to ageing chillers.

ii) Where ozone-producing equipment is operating, the ozone concentration in

the air should not exceed 0.1 ppm

g) Compressed air

i) Where compressed air is in any equipment that allows the air to come in direct contact with edible product, possible contamination from moisture and oil from the compressor must be prevented by providing an effective drain in the compressed air storage tank and an effective filter to the outlet in the air discharge-line.

ii) All filters should be capable of frequent cleaning.

iii) Air exhaust ducts should be directed away from the edible product or preferably discharged to the outside atmosphere.

PART V - HYGIENIC OPERATING REQUIREMENTS

SECTION I - HYGIENIC OPERATIONG REQUIREMENTS

1. The yards and pens in an establishment shall be kept clean and shall be disinfected weekly and at any other times as determined by the Veterinary Authority.

2. Yards or pens on the premises of an establishment shall not be used for any purpose other than for the holding of animals prior to slaughter.

3. No animal other than animals for slaughter should be allowed to enter the holding yard of the abattoir. No live animals shall be allowed in any processing area.

4. All rooms (floors, walls, doors and soiled areas of ceilings) in processing areas, together with equipment used in preparing both the edible and inedible product shall be scraped, scrubbed and cleaned daily at the end of the day's operations

5. All equipment, implements, tables, utensils including knives, cleavers, knife scabbards, saws and containers should be cleaned at frequent intervals during the day, and immediately and thoroughly cleaned and disinfected whenever they come in contact with diseased material, infective material or become contaminated. They shall be cleaned and disinfected at the conclusion of each working day.

6. No meat product, or ingredient used in the preparation of a meat product, shall be exposed to contamination or deterioration.

7. Where any trolley or any container used in a department where edible material enters an area where inedible material is handled, it should be cleaned and disinfected immediately before re-entering any edible department.

8. Detergents, sanitizing agents and disinfectants should conform to public health requirements and should not be allowed to come into contact with meat. Any residue of these cleaning agents used for the washing of the floors, walls or edible product equipment should be removed by thorough rinsing with potable water before the area or equipment is again used for handling meat.

9. Except as required for purposes of hygiene no substance, which may contaminate meat should be handled or stored in any part of the abattoir or establishment in which animals are slaughtered or carcass dressed or in which meat is prepared, handled, packed or stored. However, materials employed in the maintenance of the abattoir or establishment may be used at any time when an inspector is satisfied that there would be no danger of contamination of meat.

10. Rooms and areas in which cleaning / spray equipment used for hooks / gambrels / shackles or other gears in which strong acid or other cleaning materials are used should be effectively separated from and have no air connection with processing department.

11. Pest Control

    Preventing access to the edible product processing and packaging rooms from birds, insects, rodents and other vermin is essential; and as such, the following measures should be instituted:

    (a) An effective and continuous programme for the control of insects, birds, rodents or other vermin within the abattoir or establishment should be maintained.

(b) battoirs or establishments and surrounding areas should be regularly examined for evidence of infestation with insects, birds, rodents or other vermin.

(c) Should pests gain entrance to the premises, approved eradication measures should be instituted. The eradication of pests should always be carried out under skilled supervision and with the full knowledge of the inspector.

(d) Only pesticides approved for use in an abattoir or establishment by the competent authority should be used in an abattoir or establishment and the greatest care should be exercised to prevent any contamination of the meat. Pesticides should only be employed if other precautionary methods cannot be used effectively.

(e) If spray method is used, all meat should be removed from the room and all equipment and utensils covered.. After spraying, the equipment and utensils should be thoroughly washed prior to being used again.

(f) Pesticides or other toxic substances should be stored in separate locked rooms or locked cabinets and dispensed or handled only by authorized and properly trained personnel. Every precaution should be taken to avoid contaminating the meat.

12. Amenities provided for the use of employees and the meat inspection service including the meat inspection office space should be kept clean at all times.

13. When in the opinion of an inspector, any equipment, utensil, room or compartment at a registered establishment is unclean or its use would be in non-compliance with this manual, he shall detain the article and suitably identify it with a serially numbered tag or some other method acceptable to the Authority. No equipment, utensil, room or compartment so detained shall again be used until made acceptable; no identification mark placed on the article shall be removed by anyone other than the officer

14. The outside surrounds of premises shall be maintained in a clean and tidy condition. Worn-out equipment / building materials, wooden crates / carton boxes, grounded vehicles, litter etc. shall be removed from the establishment.

SECTION II - HYGIENE AND HEALTH OF PERSONNEL

1. Managers of abattoirs and establishment should arrange for adequate and continuing training of every employee in hygienic handling of meat and clean habits so that the employees are able to take the necessary precautions to prevent contamination of meat.

2. Medical examination should be carried out prior to employment of employees and should be repeated yearly or when clinically or epidemiologically indicated. The medical examination should pay particular attention to:

i) infected wounds and sores

ii) enteric infections including parasitic diseases and carrier states especially with respect to Salmonellae ; and

iii) respiratory diseases.

3. The management should take care to ensure that no employee, while known or suspected to be suffering from or to be a carrier of a disease capable of being transmitted through meat, or while afflicted with infected wounds or sores or diarrhoea, is permitted to work in any area of an abattoir or establishment in a capacity in which there is a possibility of such a person directly or indirectly contaminating meat with pathogenic micro-organisms. Any ill person should immediately report to management that he is ill.

4. Any person who is cut or injured should discontinue working with meat and until he is suitably bandaged and should not engage in any abattoir or establishment in the preparation, handling, packaging or transportation of meat. No person working in any abattoir or establishment should wear any exposed bandage unless the bandage is completely protected by a waterproof covering, is conspicuous in colour and is of such a nature that it cannot become accidentally detached.

5. The manager of any abattoir should maintain health records of employees for future monitoring by inspectors.

6. Every person engaged in an abattoir or establishment should wash his hands frequently and thoroughly with soap and detergents under running warm potable water while on duty. Hands should be washed before commencing work, immediately after using lavatory, after handling contaminated material, and whenever else necessary. Notices requiring handwashing should be displayed.

7. Every person engaged in abattoir work should maintain a high degree of personal cleanliness while on duty, and should be appropriately attired including (a) head covering and (b) footwear, all of which articles should be washable unless designed to be disposable and which should be maintained in a clean condition consistent with the nature of the work.

8. Every person who visits an area in an abattoir or establishment where carcass or meat are handled should wear clean protective clothing. Visitors should always be taken from the opposite end of the product flow (clean to dirty area). Visitors' changing room should be suitably located.

9. Entrances and exits to and from workstations should be such, that where possible, persons should not cross through carcass lines or other workstations. Due consideration should be given to clear, physical separation between 'clean and dirty' areas.

10. No part of an abattoir or establishment used for slaughter of animals, dressing of carcass, preparation, handling, packaging or storing of meat should be used for deposit of personal effects or clothing.

11. Protective clothing, knife scabbards, plastic aprons and other working implements should be deposited in a place provided for the purpose where they will not contaminate any carcass or meat.

12. Any behaviour which can potentially contaminate the meat, such as eating, use of tobacco, chewing, should be prohibited in any part of the abattoir or establishment used for slaughtering or dressing of carcass or for the preparation, handling, packaging or transportation of meat.

13. Gloves if used in the handling of meat should be maintained in a sound, clean and sanitary condition. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Gloves should be of an impermeable material except where usage would be inappropriate with the work involved.

14. The Manager should have ‘an on-going training programme among personnel / operators mainly to increase the awareness of the need for good hygiene practices

SECTION III. PRINCIPLES TO BE OBSERVED DURING SLAUGHTERING AND PREPARATION OF MEAT

1. Every slaughter animal must undergo ante- and postmortem inspection.

2. No animal should be slaughtered or dressed in any abattoir or establishment except when an inspector is present. An exception may be given just to slaughter only if they are found to be in pain or emergency or fractured condition.

3. Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the killing floor, so as to lessen the risk of contamination.

4. All animals brought to the slaughter floor should be slaughtered without delay.

5. The bleeding should be as complete as possible. If blood is intended to be used in preparation, it should be collected and handled hygienically and should in no case be stirred with the hand but only with hygienically acceptable implements.

6. Stunning, slaughtering / sticking and bleeding of any animals should not not be allowed to proceed at a rate faster than that at which the carcass can be promptly accepted for dressing.

7. The slaughtering, sticking, bleeding and dressing should be carried out with care so as to ensure the production of a clean carcass, head and edible offal. None of the parts should come in contact with the floor and all contamination should be avoided.

8. Carcass should be separated from each other to avoid contact and contamination once the removal of the hide, skin or pelt has commenced. Separation of carcass, heads and viscera should be maintained until they have been examined and passed by the inspector. Carcass should come in contact only with surfaces or equipment essential to handling, dressing and inspection.

9. Before the removal from any head of any meat or brain intended for human consumption, the head should, except in the case of pigs, be skinned, washed / flushed and rendered clean with running potable water to the satisfaction of inspector.

10. When the tongue is dropped, caution should be exercised not to cut the tonsils.

11. The following points should be observed in the skinning operations;

    (a) All species, except pigs, should be skinned and this should be done before the carcass is eviscerated in such a manner as to avoid contamination of the carcass. An exception is also allowed especially when skin-on goats are preferred by the consumer. To achieve this, appropriate facilities similar to pigs should be made available. Pumping of air between the skin and carcass to facilitate skinning should be forbidden. Pigs should be scoured of all bristles, scurf and dirt. The water in the scalding tanks should be changed as frequently as possible.

    (b) Skinned carcass should not be washed in a manner which will allow water to enter either the abdominal or thoracic cavities prior to evisceration.

    (c) Lactating or obviously diseased udders should be removed from all classes of animals. Removal of such udders should take place at the earliest appropriate time during dressing. No secretion should be allowed to contaminate the carcass and therefore udders should be removed in such a manner that the teat and udder substance remains intact and without any milk duct or sinus being opened.

12. Evisceration should be effected without delay.

13. During dressing the following should be observed:

    (a) The discharge of any material from the oesophagus, paunch, intestines or rectum, or from the gall bladder, urinary bladder, uterus or udder should be effectively prevented.

(b) Any offal intended for human consumption should be removed from the carcass in a manner that will prevent contamination of the organ removed.

(c) Intestines should not be severed from the stomach during evisceration and no other opening should be made during evisceration into any intestine/paunch. In the case of sheep, lambs/goats and pigs, the removal of stomach and intestines should be carried out without separation.

(d) Spermatic cords and pizzles should be removed from the carcass.

14. No carcass, meat or edible offal should be washed in any abattoir other than with running potable water.

15. No paper, cloth, wad, sponge or brush should be used in the washing of any carcass.

16. No person should, whether mechanical or any other means, inflate with air any carcass, meat or edible offal unless ritual procedures require them.

17. No hides, skin or pelts should be washed or defleshed or left in any part of the abattoir or establishment used for slaughtering or dressing of animals or the preparation or holding or any meat intended for human consumption.

18. All stomachs, intestines and all inedible materials derived from the dressing of carcass should be removed as soon as possible but in accordance with the inspection procedure from the dressing room in such a manner as to avoid contaminating the floor and walls or any carcass, meat or edible offal.

19. All stomachs, intestines and all inedible materials should subsequently be treated in parts of the abattoir or establishment destined for this purpose in accordance with the recognized practices which should pay attention to cleanliness and hygiene.

20. Faecal and other objectionable matter contaminating carcass during dressing should be carefully trimmed off.

21. Where the inspector considers that the manner in which animals are being slaughtered or dressed or under which the carcass or meat are being handled, prepared or packaged, will adversely affect:

(a) the cleanliness of the carcass or meat ; or

(b) the hygiene of production ; or

(c) the process flow of activity ; or

(d) the efficiency of meat production,

he may require the manager to take action to correct the deficiency or reduce the rate of production or to suspend operations for the time being in any specified section of the abattoir or establishment.

22. Post mortem inspection:

(a) Post mortem inspection should be performed immediately after slaughter process.

(b) Prior to the final examination, all parts required for inspection of the slaughtered animal should remain identifiable with the carcass and no part must be removed without the consent of the inspector.

23. Only healthy carcass or parts, cleaned to the satisfaction of the inspector supervising slaughtering operation shall be accepted as suitable for human consumption.

24. In order to maintain high standards of hygiene slaughter and dressing the managers and inspectors should be trained in quality management system. In the latter system they are required to write their specifications that are quantitative and achievable. Having written the specifications they should be able to systematically analyse and design a process capable of producing a carcass / product that meets their specifications and achieve it in a cost effective and efficient manner. The most appropriate tool is to use the HACCP (Hazard Analysis Critical Control Point) concept and develop a quality manual structured specifically for the establishment in question.

PART VI - BRANDING OF MEAT PASSED FOR HUMAN CONSUMPTION

Meat that has been passed by the inspector as fit for human consumption should be branded accordingly as prescribed by the controlling authority.

1. The stamp roller must be made of material that is easily cleaned, dismantable and sterilized.

2. Brands and stamps should bear the logo and the words ‘Vet. Inspected’ and must be kept clean while in use. They should be held in the custody of the inspector and used only under his supervision.

3. Suitable (colour) branding dye should be applied to the meat to give a contrast against the latter surface. The ink to be used for branding any meat or offal passed as fit for human consumption should be one that is approved by the controlling authority. The ink used should be satisfactorily adhesive, non-running and should not present any health hazards to man.

4. The preparation of the stamping dye should be done hygienically and in a sterile manner. The prepared dye should be kept in sterile containers and capable of being dispensed into smaller stainless steel trays ready-for-use.

PART VII - OPERATING PRACTICES FOLLOWING POST-MORTEM INSPECTION INCLUDING STORAGE AND CUTTING UP

SECTION I - STORAGE OF MEAT AND EDIBLE OFFAL

1. Meat passed as fit for human consumption should be removed without undue delay from the dressing area. They should be handled, stored or transported in a manner that will protect the meat from contamination and deterioration.

2. All meat and edible offals should be stored at 3^{o} C and should at all times be protected from contamination.

   The following provisions should apply to all meat or edible offals placed in any chilling room or freezing rooms:

   (i) Entry should be restricted to personnel necessary to carry out operation efficiently.

   (ii) Doors should not be left open for extended periods and should be closed immediately after use.

   (iii) No chilling room, freezing room or freezer store should be loaded beyond its designed capacity.

   (iv) Where refrigerating equipment is not manned, automatic temperature recorders should be installed.

   (v) If no automatic device is installed temperatures should be read at regular intervals and the readings recorded in a log book.

   (vi) A record should be maintained of all meat placed in or taken out of the chilling room, freezing room or freezer store.

   (vii) There should be a reliable method of monitoring the chilling of carcass or edible offals which are placed in the chiller.

   (viii) Condensation should be prevented by the efficient refrigeration facilities combined with proper insulation of walls and ceilings. It is important that the temperature, degree of relative humidity and the velocity of air flow be suitably controlled and maintained. If overhead refrigerating coils are installed, insulated drip pans should be placed beneath them. All floor type refrigerating units should be placed within curbed and separately drained areas unless located to floor drains.

   (ix) The refrigeration capacity should be sufficient to enable the temperature in the centre of the thickest point of all carcass and sides to be reduced from the time they were first placed in the chiller to a meat temperature of not more than 7^{o} C within 12 hours.

(x) Where shelves or racks are provided, they should be made of rust resistant material. Meat that is not in cartons should be hung or placed on suitable corrosion-resistant trays in a manner permitting adequate circulation of air around the meat. Cartons should be stacked to permit adequate circulation of air around each carton.

(xi) Meat that is not in cartons should be held in a manner (trays) which precludes drip from one piece of meat falling on to any other piece. Care should be taken to avoid contact between the base of any tray and meat stored beneath. The bottom of any shelf should be 300 mm above the floor.

(xii) Refrigerating coils should be defrosted frequently to prevent excessive accumulation of ice and loss of refrigerating efficiency. Provision should be made for removal, without affecting the product, of water resulting from defrosting.

SECTION II - BONING OR CUTTING OF CARCASS

1. The permitted methods of further preparation to bone-in or boneless meat are:

   (a) conventional boning or cutting

   (b) hot boning or cutting

   (c) thaw boning or cutting

2. The types of boning systems may be:

   - on-rail boning
   - side boning
   - quarter boning
   - table boning
   - belt conveyor boning

3. A separate pre-trim area maintained at not more than 12^{o} C should be provided between chillers and commencement of boning or cutting.

4. Access to handwash and sterilizer units should be provided.

5. Where necessary, stands for high and low trim should be provided and large enough to allow inspection staff to monitor trimmings.

6. Where rails are used the rail at the pre-trim area for side boning should be high enough that the neck area is clearly visible for inspection.

7. All rooms or processing area for the cutting up or boning of carcass should wherever possible comply with the following provisions:

   (i) The rooms should be temperature controlled at 10 - 12 ^{o} C.

   (ii) Defrost discharge drainage from refrigeration equipment should be confined and directed to the drainage system in accordance with Part VII (12).

   (iii) Entry to the room should be restricted to personnel necessary to carry out operations efficiently.

   (iv) Doors should not be left open for extended periods and should be closed immediately after use.

   (v) Every practical precaution, including vermin proofing of the room should be taken to maintain the room free of flies, cockroaches, rats, mice and other vermins. Other procedures, where applicable, as detailed in Part V, Section I (11) of this chapter should be followed.

   (vi) The construction of the rooms or processing area should wherever applicable comply with the provisions as detailed in PART II of this Chapter.

8. The equipment and utensils used in the rooms or processing area should wherever applicable comply with the provisions as detailed in PART IV of this Chapter.

   (i) A sufficient number of portable watertight receptacles for the storage of bones, trimmings, fat and other waste matter, which should be of metal or of any other suitable, impervious non-absorbent material and should have impervious fly covers should be provided in every processing area or room where the deboning or processing is being conducted.

   (ii) The bones, fat, trimmings, or waste matter may however be taken from the processing area or to a separate room, enclosure or outside area and immediately placed in clean, separate stainless steel containers, pending removal from the premises.

   (iii) The receptacles immediately after emptying shall be effectively cleaned and inverted to dry. They should at all times when not being used for the immediate reception of bones, or waste matter should be kept covered and stored in a separate room or enclosure.

9. The daily maintenance of the rooms or processing area shall comply wherever applicable, with the provisions as detailed in PART V, Section I (Hygienic Operating Requirements) of this Chapter.

10. The hygiene and health or personnel working in the room or processing area shall comply, wherever applicable with the provisions as detailed in PART V, Section II (Hygiene and Health of Personnel) of this Chapter.

11. A carton and wrapping material store should be provided. They should be dust and vermin proof and should not have air connection with rooms used for the storage of cleaning compounds.

12. Facilities for holding packing materials for immediate use during production in the boning room should be provided.

13. A separate room with facilities should be provided for washing gear and equipment.

14. A facility outside the processing room should be provided for sharpening knives and storing aprons and gear.

15. Hot and cold water hose points should be provided.

PART VIII - PACKAGING AND PACKING MATERIAL

If the meat is packaged or wrapped, the following considerations should be taken into account:

1. Packaging material should be stored and used in a clean sanitary manner.

2. Wrapping material should be sufficient for the purpose of protecting the meat from contamination in the conditions under which it is to be handled, transported or stored.

3. The wrapping material should be non-toxic and should not leave harmful deposits of any kind on the meat, or otherwise contaminate it.

4. The wrapping or covering of warm or cold meat transported within an establishment or from one establishment to another should be optional, but care should be taken that the meat is not contaminated.

5. Cases or cartons used for the packing of meat should be provided with a suitable inner liner. However, the liner may not be required if individual pieces of meat, such as cuts or boneless meat, are individually wrapped before packing.

PART IX - TRANSPORTATION OF MEAT AND EDIBLE OFFAL

1. Meat should not be carried in any means of transport that is used for conveying live animals.

2. Meat should not be carried in the same means of transport as other goods in a way that may adversely affect the meat.

3. Stomachs should only be transported when thoroughly cleaned or scalded, and heads and trotters only when skinned or scalded or dehaired.

4. Meat should not be placed in any means of transport which has not been cleaned before loading and if necessary also disinfected.

5. Carcass, sides and quarter, other than those that are adequately wrapped and frozen, should be hung during transport or placed in a suitable manner on racks or similar equipment.

6. Basic design and construction of ***Meat Delivery Vehicle*** should comply with the following conditions:

   (a) The meat compartment should be completely separated from the driving cabin and should have an adequate capacity for the consignment intended.

   (b) The compartment where the meat is being conveyed should be kept covered and enclosed so as to protect the meat and edible offal from dust, flies, and all other sources of contamination.

   (c) All internal finishes should be made of corrosion-resistant material, be smooth, impervious and easy to clean and disinfect. Joints, rivets and doors should be effectively sealed so as to prevent the entry of pests and other sources of contamination. Floor to wall junction should be coved to a radius of 50 mm.

   (d) The meat compartment should be well insulated with approved material approximately 40-50 mm thick and temperature sensor should be located in a convenient position whereby the temperature of the meat compartment is easily read.

7. Vehicles intended for the transport of meat should be equipped in such a manner that the meat does not come into contact with the floor. Height of railings should be such when quartered carcasses are hung; the lowest portion of the latter has the clearance of not less than 75 mm above the floor.

8. Suitable racks and closed containers should be used for the transport of unwrapped edible offal. Offal should be transported under refrigeration unless the period of transport is less than two hours when an insulated container may be used.

9. Where vehicle is provided with a ramp, step or tailboard, such device should not be placed or carried within such compartment.

10. The floor of the conveyance should not be walked on during loading or unloading except by persons wearing suitable protective clothing and covering over their footwear.

B. MINIMUM STANDARDS OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF SLAUGHTERHOUSE - POULTRY

1. SITE SELECTIONS AND APPROVAL

1.1 Introduction

The location and site characteristics should be such as to minimize the impact of the developments of the local community and avoid conflicts with the natural environment and planned use in the area.

1.2 General Conditions

1.2.1 The buildings on the premises should be located so that they are separated from any human habitation by reasonable distance, from any building, from any public road or from any public place on which may be located any matter or thing or on which may be carried out any operations which are likely to cause the poultry meat on the premises to become contaminated or unfit for human consumption.

1.2.2 General sanitation provisions require that processing operations be conducted in buildings that are well ventilated and lit, kept clean and free from vermin, dust and other conditions that would contaminate poultry products.

1.2.3 To protect the premises from unnecessary exposure to contamination, live poultry other that poultry intended for immediate slaughter and those kept under intensive type cage conditions should not be housed within 75 metres of the processing premises.

1.2.4 The exterior of the premises should be kept in good repair.

1.2.5 The area should be free of dust and of odours, smoke, as and other such things as are sometimes produced by such industries as sawmills, oil refineries, city dumps and sewerage disposal systems.

1.2.6 All site areas not sealed should be maintained in a clean and tidy condition. Stored material on the site should be kept in an orderly manner 300mn above the ground in a well-drained position or on pallets.

1.2.7 Necessary water, electricity and drainage facilities, including disposal of works effluent, stormwarter and site drainage and sewerage disposal should be available at the site.

1.2.8 The access roadways and the immediate surroundings of the building should be sealed and other areas treated so that a low dust level is present. Holding areas for live birds, vehicle loading and unloading areas, vehicle cleaning areas and inedible material collection areas must be paved and drained.

1.2.9 The site should lend itself to the construction of an adequate system of drainage, having regard to the operations intended to be carried out on the premises.

1.2.10 Site subject to flooding should be avoided.

1.2.11 The area of land required should be determined before selecting the site. Space should be sufficient for such things as bird holding pens, separate roadways, parking areas, effluent ponds and other ancillary functions.

1.3 Expansion

In planning the premises, careful consideration should be given to the plans to allow space for future expansion.

1.4 Soil Types

In selecting the site, care should be taken to avoid undesirable soil types. Soil types subject to large expansion and contraction can adversely affect construction costs or can cause serous damage to buildings. Heavy soils subject to water logging can create drainage problems and allow pools of stagnant water to form.

1.5 Sitting of Ancillary Facilities

In the sitting of inedible product departments, effluent treatment systems and steam generating plants in relation to edible product processing facilities, the prevailing winds and terrain should be taken into account.

1.6 Water

1.6.1 An adequate supply of potable water must be available.

1.6.2 Depending on the source of supply, it may be necessary to install an in-plant chlorination system or other treatment systems to ensure portability of water at all times.

1.7 Electricity

The electricity supply should be adequate to meet the anticipated peak demand.

1.8 Drainage System

The site plan should indicate the proposed method of disposal of works effluent and sewerage. Storm water and site drainage should also be indicated.

1.9 Waste Disposal

The method of disposal of any liquids, gas and solid wastes from the establishment should be acceptable to the relevant authorities and not constitute and hazard to the overall hygiene of the premises.

2. SERVICES

2.1 Introduction

This chapter deals with services required for plant operations, which should be installed in accordance with appropriate standards and the regulations of all relevant authorities.

Important considerations are as follows:

- materials of construction should be suitable for the area in which they are to be installed;
- safety aspects of installations;
- adequate access for maintenance and sufficient room to work once access has been gained.
- At all time, product hygiene should not be put at risk.

2.2 Scope:

- steam
- potable water, both hot and cold
- non-potable water
- drainage
- electricity
- refrigeration
- pneumatics
- pipeline identification

2.3 Steam

The steam generating plant should be located so that exhaust gases fuel receival and storage facilities not create a nuisance or a hazard to product hygiene.

2.4 Water Supply

Sufficient water should be readily available for:

(a) Carrying out in a hygienic manner the operations to be carried out on the premises.

(b) The shower rooms, washbasins, drinking fountains and sanitary conveniences.

(c) Cleaning utensils, appliances and equipment.

(d) Cleaning and flushing the premises, including the settling pit, drains, holding and reception area and roadways.

(e) Equipment used for cleaning live bird crates.

(f) Cleaning vehicles used for the conveying of poultry meat from the premises.

(g) Cleaning vehicles used for conveying birds to the premises.

2.5 Potable Water

2.5.1 Potable water should, in addition to meeting the standards, be free of turbidity, colour and disagreeable taste or odour.

2.5.2 Where premises have in-plant chlorination facilities installed, storage facilities or other means should be provided to ensure a contact period of at least 20 minutes between chlorination and use within the premises.

2.5.3 In-Plant chlorinators, where installed, should be of an automatic, continuous type and fitted with alarms to indicate failure of the apparatus.

2.6 Potable Water Reticulation

2.6.1 A building on premises should be constructed so that each room except a room used for chilling accommodation, is provided with an ample supply of hot and cold water, and delivered to water connections.

2.6.2 The reticulation system should be designed and installed so that back siphonage of used or polluted water cannot occur.

2.6.3 Potable water supply outlets to immersion tanks should be located so that there is a disconnection between the outlet and the highest point of the water in the tanks.

2.6.4 Where it is necessary to use submerged outlets, an effective system, such as vacuum breakers acceptable are those, which can continuously be shown to be functional when the water supply is operating normally.

2.6.5 The reticulation system should be no unused ends that might mean water becomes stagnant.

2.6.6 In warm processing areas, overhead cold water lines should be insulated, if necessary, to prevent condensation forming.

2.6.7 The water should be provided at a pressure sufficient to permit effective cleaning of all rooms.

2.7 Private Wells and bores

If the water is obtained from a private underground source, the wells or bores should be under the control of the registered establishment and effectively protected from pollution.

2.8 In-Plant Storage Tanks for Potable Water

2.8.1 In plant storage tanks be provided with effective covers prevent the entry of insects and other extraneous matter.

2.8.2 The inlet, outlet and, if provided, the reticulation system should be installed to ensure that there are stagnant areas.

2.9 Hot Potable Water

2.9.1 An adequate supply of hot potable water should be provided. Water provided for purposes of sterilization should not less than 82 degrees Celsius at point of use, while that provided for hand washing should be delivered between 35 degrees Celsius and 45 degrees Celsius.

2.9.2 Where a ring main system is used in a processing room, a dial-faced thermometer should be on the supply return lines as the leaves the room. This thermometer should be located so that inspection staff can readily observe it.

2.9.3 Where hot potable water for sterilization is produced by steam injection at point of use, a thermometer should be on each item of sterilizing equipment.

2.10 Non- potable Water

2.10.1. Non-potable water should be restricted to the following uses:

- on ammonia condensers not connected with the potable water supply
- in vapour line serving inedible product rendering cookers.

2.10.2. Water derived from internal processing procedures should be used only in drains in the scalding and de-feathering section to assist the flow of feathers and effluent from the scald tank and de-feathering cabinets or other approved purposes. The point of discharge into the drain should be through a fixed metal outlet not capable of being fitted with a hose attachment, and the outlet positioned not more than 150mm from the bottom of the drain for direct discharge into the drain.

2.11 Drainage

Three entirely separate drainage system should be provided as follows:

- sanitary drainage
- processing or trade waste drainage
- stormwater drainage

All drainage systems must comply with local authority requirements.

2.12 Sanitary Drainage

2.12.1 Lines from toilets and urinals should be directed to an adequate septic tank system or to the local sewerage system.

2.12.2 Sanitary drainage lines from toilets and urinals should not be connected with other drainage lines within the establishment and shall not discharge into save-alls.

2.12.3 The drainage system should be designed to eliminate any possibility of drainage backing up and flooding the floors of any processing area.

2.12.4 Septic tanks, if used, should be away from processing areas so as to prevent any nuisance.

2.13 Processing or Trade Waste Drainage

2.13.1 The drainage system from processing areas should be designed to enable rapid removal of wash down or other water from the floors of departments. The system should ensure the effective and expeditious removal of plant effluent from the premises.

2.13.2 Drainage waste outlets should be provided to adequately remove waste in processing areas.

2.13.3 Each drainage waste should be at least 100mm in diameter and be fitted with preformatted or grilled drain covers.

2.13.4 Drains should be equipped with effective, P, U or S shaped deep seal traps and be adequately vented to the outside atmosphere.

2.13.5 Floors should be evenly graded to the trapped drainage wastes.

2.13.6 Drainage for the removal of viscera, feathers etc. within the packing, dressing and killing areas should take the form of a box channel drain.

2.13.7 Box channels should be wide enough to enable cleaning and internal corners should be effectively coved.

2.13.8 Floor drainage valleys should be provided with approved covers where necessary over walkways and the direction of flow of the drains must be from clean areas to dirty areas.

2.13.9 Where viscera, feathers and other waste are removed from the processing premises to the save-all by means of a large diameter pipe, both ends of the pipe should be made rodent proof when not in use.

2.13.10 Pits and tanks into which blood is received must be located outside the bleeding area.

2.13.11 Blood pits and tanks should be constructed so that they are impervious to moisture and suitably drained. They should be provided with facilities to enable effective cleaning.

2.14 Primary Treatment Systems

2.14.1 A setting pit or other approved screen device should be at the termination of all waste water drains from the plant and should be located outside the building and be constructed of concrete or other approved material and should be emptied and cleaned daily.

2.14.2 Unless satisfactory mechanical means are provided for removal of waste materials on a continuing basis, the setting pit on one side should be provided with a concrete apron along the whole length of the side, which should not be less than 1.8m wide and surrounded by a 150mm wide curb on each other side.

2.14.3 Save-all or primary treatment systems should be provided to effectively handle drainage from the establishment.

2.14.4 Screening equipment for solids separation (gut, feather) should be located on a concrete pave, curbed and drained area provided with hot and cold wash down points.

2.14.5 The volume of a save-all should allow a residence time sufficient to ensure reasonable recovery of fats and sediments.

2.14.6 Each system should be in an area away from edible processing departments so as not to constitute a potential nuisance.

2.14.7 Each system should be surrounded by a concrete apron, curbed on three sides, with the open side being at least 1.8m wide and sloped towards the save-all or grease trap to facilitate drainage of liquid back into the pit.

2.14.8 The save-all should be constructed so that it can be readily emptied and cleaned.

2.14.9 Hot and cold-water hose points for wash down purpose should be in the vicinity of the save-all.

2.15 Storm water Drainage

Local authorities frequently will not allow storm water to be connected to the save-all or effluent treatment system. Storm water drainage connections to effluent treatment systems where local governments permit, should ensure that the design and installation are such that a fail-safe system prevents flooding.

2.16 Further Effluent Treatment

Any additional effluent treatment facilities should be located so as not to create an odour or other nuisance to processing areas.

2.17 Electrical Fittings

Electrical pipe fittings should be installed at least 25mm from equipment or walls. Other electrical fittings such as switches, ducts, cable ladders and switch boxes should be sealed to the wall or sufficiently clear to permit effective cleaning of the space between the fitting and the wall.

2.18 Refrigeration

2.18.1 Where condensation is likely to lead to product contamination, effective means to confine and remove the condensation should be provided.

2.18.2 Where overhead refrigeration facilities are installed, insulated drip pans, directly connected to the drainage system, should be placed beneath them.

2.18.3 Refrigeration motors should be located outside the premises except for other than a sealed unit, which is an integral part of an appliance.

2.18.4 Floor type refrigeration units should be placed within curbed and separately drained areas unless located adjacent to a floor drain.

2.19 Pneumatics

2.19.1 Where practicable, the exhaust from air operated equipment should be piped to the exterior of processing buildings.

2.19.2 Oil from air exhaust should be adequately trapped to prevent contamination of product.

3 BASIC CONSTRUCTION

3.1 Introduction

3.1.1 The items in this section are to ensure that the interiors of edible product areas of sanitary construction using acceptable non-toxic materials.

3.1.2 Light coloured finishes should be used to help maintain sanitary conditions.

3.2 Buildings

3.2.1 The buildings should be designed and constructed so that there is sufficient space to allow for processing, movement of personnel and effective cleaning.

3.2.2 The premises should be provided with:

(a) adequate holding facilities under cover for all live birds awaiting slaughter;
(b) a separate room for stunning, bleeding and removal of feather; the walls of this room should be not less than 3m from floor to ceiling or wall plate;
(c) a room, the height of which should not be less than 3m from floor to ceiling or wall plate, for eviscerating.

The separation of this room from that referred to in (b) shall be by full height walls except for necessary self-closing door and approved openings sufficient for passage of product.

(d) A room, the height of which should not be less than 3m from the floor to the ceiling or wall plate for washing and packing.

(e) A room or rooms adequate constructed and equipped for keeping under refrigeration all the dressed poultry that is likely to be on the premises at any time.

(f) A rent-free office space including necessary furnishings, light and janitor service for the exclusive use for official purpose of the inspector.

3.3 Internal Walls

3.3.1 Materials used should be as follows:
- impervious to moisture
- smoothly finished
- rust resistant
- resistant to or protected from impact

- not subject to chapping or flaking

3.3.2 Joints and fixing devices should be sealed to effectively prevent entry of moisture.

3.3.3 Where walls are not of full height, they should be capped with a 45 degree top.

3.3.4 Horizontal ledges occurring in wall construction should be slopped down at an angle of at least 45 degree.

3.3.5 Where internal panel type construction is to be incorporated other than in freezer stores or blast freezers, walls panels should be placed on a concrete plinth raised a minimum of 150mm above floor level.

3.3.6 Wall panel construction should be suitably protected in any area where impact damage might occur. This may be achieved by installing bump rails or affixing suitable materials to the panel.

3.4 Floors

3.4.1 Materials used should be concrete or other accepted substances impervious to liquids. Floors in areas where emulsions are prepared or further utilized should be acid resistant.

3.4.2 Where tiles are used they should be laid on a firm water-proof concrete foundation and the joints between the tiles should be grouted with acid resistant water-proof mortar and the joints should be narrow as possible.

3.4.3 The surface should be relatively smooth, easily cleaned, resistant to wear and corrosion and non-slip in finish.

3.4.4 Floors should be evenly graded to waste outlets so liquid does not accumulate.

3.4.5 Where anti slip surfaces are applied to floors, the surfacing materials should be of an acceptable type and its finish should be relatively smooth.

3.4.6 Floor joints should be sealed with materials impervious to liquids and finished flat with the surface.

3.5 Ceilings

3.5.1 Ceilings should be provided in all rooms of processing premises.

3.5.2 Ceilings should be constructed from acceptable materials, smoothly finished and impervious to moisture. Joints and fixing devices should be effectively sealed.

3.5.3 The minimum height of a ceiling, or the distance measured from the floor to wall plate, should be not less than 3m in all processing rooms.

3.6 Coving

3.6.1 Walls and curbs should be coved to the floor with a radius of at least 75mm.

3.6.2 Wall to wall junctions should be coved with a radius of at least 25mm.

3.7 Passageway, doors and jambs

3.7.1 Passageways, doors and doorjambs should be constructed from, or sheathed with, rust resistant materials.

3.7.2 Where sheeting is used, joints should be effectively sealed against moisture entry by continuous welding or other equally effective means.

3.7.3 Fixing devices such as pop rivets or screws should be effectively sealed to prevent which are difficult to clean.

3.7.4 Passageways and doorways through which product is transferred by rail or trolley should be of sufficient width to prevent contact of the product.

3.7.5 Doors opening from processing rooms to the exterior should be fitted with self-closing devices. Strip type P.V.C type curtains should only be used on openings through which packaged products pass.

3.8 Stairways

3.8.1 Stairways in processing areas should be constructed of corrosive resistant material impervious to moisture, and have solid treads, closed risers and solid

side curbs. Side curbing should have a minimum height of 150mm measured at the leading edge of the tread.

3.8.2 Personnel walkways positioned over conveyor belts or any part of the processing system must be constructed of approved material and of a design that will prevent product contamination.

3.9 Windows

3.9.1 Where provided, windowsills should be not less than 1.2m from floor level.

3.9.2 Internal sills should be sloped down at a 45^0degree angle.

3.9.3 Where windows face an area that produces noxious odours, the windows should be non-opening.

3.10 Insect Proofing

7.1 Exterior openings that may admit flies and insects shall be fitted with removable insect proof screens, or other approved methods on insect control.

3.10.2 Where personnel enter edible product processing areas either directly or indirectly from outside the building, consideration should be given to having a corridor with subdued lighting between the outside of the building and the entrance to the room to limit problems with the entry of insects. Insect electrocution devices may be installed in such a passageway.

3.11 Rodent and Vermin Proofing

Buildings should be constructed to be rodent and other vermin proof. Doors should be tight fitting.

3.12 Ventilation

3.12.1 Ventilation may be provided by natural or mechanical means. Mechanical ventilation should achieve at least 4 air changes an hour.

3.12.2 With mechanical ventilation systems, air intakes should be properly located to avoid the intake of potentially contaminated air.

3.12.3 Ventilation equipment of all types should be located so that air from inedible product areas cannot be introduced into the ventilation system.

3.12.4 Where roof mounted air conditioners, evaporative coolers and the like are located near production lines, edible product should not be contaminated with condensate or overflow water.

3.12.5 Where mechanical ventilation systems are installed to help exclude dust from buildings, the system is not to be regarded as a substitute for adequate insect proofing.

3.13 Lighting

3.13.1 The intensity of lighting required to be provided at work surfaces should be of a standard not less than the standard listed for below:

- in the case of evisceration, washing, packaging, breaking up and piece preparation sections _ 400 lux
- in the case of product inspection station – 600 lux
- in the case of stunning, bleeding and defeathering sections – 200 lux
- in the case of chillers, freezers, carton storage rooms, loading dock and any associated marshalling areas – 220 lux

3.13.2 Shatterproof protective shields should be provided over exposed lights.

3.13.3 Artificial lighting must not distort colours or cause shadows at the inspection surface. This also applies where product is prepared for inspection or is packaged.

3.14 House Points

3.14.1 The use of long hoses should be avoided.

3.14.2 A sufficient number of hot and could hose points should be provided to service the area.

3.14.3 Hose racks should be constructed of rust resistant materials.

3.14.4 Hoses should be of a material and colour that does not cause marking of surface they contact.

3.15 Noise Factor

It is well recognized that prolonged exposure to excessive levels of noise is detrimental to health and hearing. Processing areas of poultry establishments can be excessively noisy unless particular attention is paid to this problem. An awareness of the need to control noise levels is important at the design stage, as problems can be avoided that would be expensive to rectify later.

4. TRUCK WASH AREA

4.1 Location

A paved and drained area should be provided adjacent to the bird unloading area for cleaning bird carrying vehicles after loading.

4.2 Basic Construction and Facilities

4.2.1 the surface of the truck wash area should be durable, impervious to liquids and have a drainage gradient of at least 1:50.

4.2.2 Drainage from the truck wash area should be connected to a manure sump or equivalent facility.

4.2.3 Where a nuisance would otherwise be created, suitable curbing and shielding should be provided to confine splash to the area.

4.2.4 Drainage lines from these areas should be of sufficient diameter to accommodate the high level of solids associated with washing these trucks. Mild steels piping are unsuitable for drainage lines in this area because of the corrosive nature of effluent from truck washing and of strong detergents.

4.2.5 An adequate supply of potable water under sufficient pressure should be available for cleaning operations.

4.2.6 Where vehicles are likely to be cleaned after daylight hours, the area should be well lit.

4.2.7 A suitable cabinet or shed should be provided at truck washing sites for storing disinfectants and detergents.

5. POULTRY PROCESSING BUILDINGS

5.1 Introduction

This section deals with the requirements for slaughtering and processing of poultry.

5.2 Separation of Operations

The premises should have separate rooms for the following:

- bleeding and defeathering;
- evisceration and washing;
- packaging operations.

5.3 Holding Pens or Areas

5.3.1 Adequate holding pens or areas for live birds should be provided on the premises.

5.3.2 The pens or areas should be covered, paved, curved. Effectively drained and well ventilated, with particular attention being paid to the control of extreme temperature.

5.3.3 Wash down points should be provided to effectively clean the area.

5.4 Crate Washing Area

5.4.1 A concrete paved, drained and curbed area, together with a hot and cold wash down point, should be provided adjacent to the holding pens for washing poultry crates.

5.4.2 Live poultry crates should be constructed of impermeable non-corrosive materials, which are capable of easy cleaning.

5.5 Bird Shackling Area

An efficient method of restraint to prevent the escape of poultry during shackling should be provided.

5.6 Stunning

5.6.1 Stunning equipment is installed it should be automatic and designed so that birds of all sized will make adequate contact with the stunning processes, and be humane in operation.

5.6.2 The bird stunner should operate at a voltage and for duration sufficient to render all birds unconscious during the killing operation. A Voltmeter to indicate the voltage being used should be fitted to the equipment.

5.7 Bleeding area

5.7.1 The bleeding area should be separated from the shackling area by walls of a height not less then 3 meters from floor to ceiling or wall plate except for self-closing doors for personnel and openings adequate for the passage of poultry carcasses.

5.7.2 The bleeding operation should be separated from the scald area by a wall or partition to at least shackle conveyor height.

5.7.3 Blood from the bleeding area should be removed via a blood drain or by a continuous automatic method.

5.7.4 Where bleeding is carried out with automatic equipment the method should be stated and be humane in operation.

5.7.5 Hand wash and sterilizing facilities should be available in the immediate vicinity of the bleeding area, whether this operation is performed manually or not.

5.8 Scalding and De-feathering Area

5.8.1 Should be separated from the evisceration area by full height walls except for openings adequate for personnel and for the passageway of poultry carcasses.

5.8.2 Adequate facilities should be provided in the scald and de-feathering area for the removal of steam to the outside atmosphere.

5.8.3 Scalding equipment should be designed and constructed so that the potable water line cannot be contaminated and so that there is a

continuous flow of potable water into the scald. The overflow from the scald should be large enough to allow feathers and water to be freely taken away.

5.9 Evisceration Area

Should be separated from the washing and packaging area by walls not less than 3m from floor to ceiling or wall plate except for openings adequate for personnel and for the passage of poultry carcasses.

5.10 Refrigerated Storage

The premises should contain a room or rooms adequately constructed and equipped for keeping under refrigeration all killed poultry likely to be on the premises at any one time.

5.11 Spin Chillers

Where in-line chilling facilities are incorporated in the processing line, they should comply with the following:

- in two-tank systems, water should not flow from the initial tank to the final tank.
- Overflow drains should be connected direct to the drainage system.
- The rate of change of water should approximate 0.75 liters per poultry carcass. Details of the method of chlorination and the resultant free residual chlorine levels should be stated in the specifications accompanying the plans.

5.12 Glycol Bath

Where these facilities are provided to case harden poultry, the following information should be included in the specifications accompanying the plants:

- the capacity of the bath
- the method of installation
- the operating temperature

5.13 Hand-wash Facilities

Handwash facilities should be provided at the recommended ratio of one hand basin per 10 employees and be sited at all doors and major workstations.

5.14 Sterilizers

An adequate number of sterilizer units should be provided. Approved chemical sterilizers would be acceptable.

5.15 Carton and Wrapping Materials Storage

5.15.1 The storage and dispensing facilities provided in the processing room should be adequate and capable of keeping wrapping materials above the floor.

5.15.2 A storeroom for holding cartons, and packing and wrapping materials intended for use in connection with edible production should be provided. It should be separate from all other storage facilities and should be constructed so that it is insect, vermin and dust proof and provided with racks not less then 300mm above the floor on which materials may be stored. Cartons may be stored away from the walls on pallets.

5.16 Inedible Material

5.16.1 Poultry waste should be stored, pending its removal from the premises, in leak proof containers with close fitting covers located outside the premises, under cover, on a concrete slab\ that is kerbed and drained.

5.16.2 Poultry waste containers shall be leak proof, capable of being effectively cleaned and distinguishable from containers for edible product by being coloured red or marked with a red band not less than 100mm in width around the outer circumference of the top of the container.

5.16.3 Buildings intended for rendering purposes to produce or store inedible tallow, meat meal and fertilizer should be constructed in accordance with requirements for slaughter and dressing rooms. They should be completely separated from edible departments except for a minimum opening for passage of inedible materials. Such a passage must slope away from the processing area.

5.16.4 Where treatment of by-products is to be other than by dry rendering the building should be located not less than 30mm from any building in which birds are slaughtered or dressed or in which poultry meat is treated or stored.

5.16.5 The walls of the rendering department should be not less than 3.6m high from floor to ceiling or wall plate.

5.16.6 Odour control and exhaust systems should be approved by the State Pollution Control Committee.

5.17 Cleaning Materials Store

5.17.1 Facilities of adequate size for storing cleaning materials should be provided.

5.17.2 Where the store opens onto edible product areas, the door should be of a solid panel, full height, self-closing type.

5.17.3 The cleaning materials store should be separately drained, adequately ventilated and fitted with shelving.

5.18 Toxic Chemicals

Residue compounds of toxic nature should be stored in separate premises well away from buildings used for processing and storing poultry meat and meat products.

6. CHILLERS

6.1 Introduction

This section is applicable to mechanically refrigerated areas designed to cool or hold cooled product, between processes under controlled temperature conditions.

The' Type' applied to chillers in this chapter indicates only the purpose, the holding period or the type of product held. It does not indicate any variation of standards.

This chapter deals with the following types of chillers:

- active (hot) – for primary cooling or chilling of carcasses
- holding – for holding carcasses or parts after primary chilling and products before dispatch.
- Thawing – for thawing frozen product to permit boning or further processing.

6.2 Location and Capacity

6.2.1 Chillers, other than those designed as inedible product chillers, should be in an edible product section of the premises.

6.2.2 The location of chillers relative to other work areas should be carefully considered, to minimize the risk of contamination of product.

6.2.3 Sufficient space should be available in the chiller to accommodate the quantity of product processed in such a way that the cooling airflow is able to reduce or maintain the temperature of the product to the desired degree.

6.2.4 Product storage should be arranged in such a way that good air circulation can be achieved. Containers or storage racks should be not less than 150mm off the floor.

6.3 Specific Construction Requirements

The interior of each door should be provided with a mechanism to allow personnel to escape of personnel are accidentally locked inside.

6.4 Thermometers

6.4.1 A direct or remote thermometer should be provided to each chiller.

6.4.2 The temperature sensor should be in a position that indicates the actual room temperature.

6.5 Hose Points

Sufficient hot and cold hose points should be provided to permit effective cleaning of all chillers.

6.6 Racking and Shelving

6.6.1 Where chillers are provided with racking or shelving for storing product, rust resistant material should be used.

6.6.2 Where necessary, shelving or trays to confine drip from the product should be provided, with the bottom shelf not less than 300mm above the floor.

6.7 Drainage

6.7.1 Floors in chillers should be graded at a minimum of 1:100

6.7.2 All floors should be graded to trapped floor drains located either in the chiller or outside the chiller door.

6.7.3 The defrost drain from cooling coils should be of adequate size to cope with the water from the melting ice on the coils and, if applicable, the water used to defrost the coil.

6.7.4 On ceiling mounted cooling units, the drain water should be confined by suitable insulated drip trays directly connected to the drainage system.

6.7.5 Provision should be made so that during the defrost procedure, air circulating fans on the unit being defrost can be switched off to prevent carryover of defrost water.

6.8 Thawing

6.8.1 A chiller used for thawing frozen carcass or carton product to allow boning or further processing should be equipped with machinery to maintain a maximum air temperature of 15 degrees Celsius during the entire thawing operation.

6.8.2 A recording thermometer should be installed to give a continuous record of the air temperature.

6.9 Condensation

6.9.1 Refrigerated room should be designed and operated in a way that prevents the formation and accumulation of condensation on overhead structures and ceilings.

6.9.2 Refrigerated departments should not be constructed above other departments unless the lower is to operate at temperature consistently below those of the upper.

6.9.3 Main refrigerant lines should not be routed through working areas.

6.9.4 Where forced draught unit coolers or air distribution ducting are located in the work area, both the drain trays and ducting should be insulated.

7. FREEZER FACILITIES AND COLD STORES

7.1 Introduction

This section is applicable to freezer and cold store facilities on processing plant.

This section refers to the following ‘types’ of freezers and cold stores:

- Blast freezers – including freezing tunnels and plate freezers
- Chiller freezers – facilities with both chilling and freezing capabilities.
- Freezer stores – for holding frozen meat and meat products.

7.2 Location

7.2.1 The same standards of hygiene should apply as in other edible product area.

7.2.2 Freezers and cold stores should be away from inedible product departments, except where the freezers and cold stores are used exclusively for inedible products.

7.2.3 Freezers and cold stores should be located so as not to create condensation problems in other departments.

7.2.4 Where freezers open into non-refrigerated areas, the exchange of air between two areas should be minimized by fittings such things as effective air curtains, clear plastic doors or automatic doors.

7.3 Specific Construction Requirements

The interior of each door should be provided with a mechanism to allow personnel escape if personnel are accidentally locked inside.

7.4 Drainage

Floor waste outlets should be sealed by a screw cap or other approved device when the room is operating as a freezer.

7.5 Freezing Tunnels

Where freezer tunnels are used for freezing exposed product, the tunnel should be installed so that its full length is capable of being opened for cleaning.

7.6 Thermometers

A recording thermometer or telethermometer to indicate operating temperature should be provided for each freezer or freezing capacity.

The temperature sensor should be in a position that indicates the actual temperature in the product area.

7.7 Under floor Ventilation Pipes

Where under floor ventilation pipes are provided, they should be rodent proof.

8. LOADING DOCKS

8.1 Introduction

Loading docks provide protection to product and its associated packing materials during loading and unloading at the premises.

8.2 Design Considerations

Consideration should be given to the following points:

- the methods of handling the product
- the relative heights of loading docks, and truck decks.
- the equipments necessary, such as dock levelers, to minimize operational delays.

8.3 Location and Site

- The loading dock should be convenient to product store.
- The loading dock should be readily accessible to the means of transport being used.
- Sufficient space should be available along the length and in from of the loading dock to allow for the movement of transport vehicles.

8.4 Basic Construction

8.4.1 The loading dock should be provided with an awning to protect the product during loading or unloading.

8.4.2 Where unpackaged product is handled over the dock, the dock should be designed so that where possible the area is enclosed.

8.4.3 The height from the roadway to the underside of the awning should be such that all vehicles likely to be used have adequate clearance.

8.4.4 The area nominated for truck movement should be finished with a well-drained surface, which is impervious and durable.

8.5 Marshalling Areas

8.5.1 Where the product load has to be assembled in advance, the marshalling area should be protected from the above elements.

8.5.2 The marshalling areas should be capable of being maintained at a temperature of not more that 10 degrees Celsius.

9. EMPLOYEE AMENITIES

9.1 Provision of Amenities

Amenities for employees should be provided in accordance with the following standards as recommended.

9.2 Location and Access

9.2.1 Amenities for employees should be convenient to the workplace in an area free from undue noise and odour.

9.2.2 Access to the amenities must not cause employees from edible product departments to pass through inedible product departments or vice versa.

9.2.3 Pave walkways should be provided from the work place to the amenities.

9.2.4 It is recommended that, where practical, the walkways be covered.

9.3 Separation

Amenities for male employees should be separate and distinct from those of female employees, except that common dining rooms may be provided.

9.4 Basic Construction

9.4.1 Walls, floors and dealings should be constructed of durable materials that are easy to clean.

9.4.2 Walls, and ceilings should be of light colours that will reflect light and give a bright appearance to the rooms.

9.4.3 Internal ledges should be sloped down at an angle 45 degree.

9.4.4 Exterior openings should be insect proof and construction should ensure that rodents and other vermin are excluded.

9.4.5 If mechanical ventilation is installed, it should be capable of providing at least 4 air changes an hour.

9.4.6 Fresh air intake for mechanical ventilation should be located in such a way that air is not contaminated.

9.5 Required Facilities

9.5.1 **Dining Room**

Where common dining rooms have a direct connection with change rooms, entrances to the change room should be provided with full-height doors and privacy screens.

9.5.2 **Toilet Rooms**

- Floor waste of suitable size should be provided in water closet and urinal rooms.

- Water closets and urinals should not be in shower rooms.

- Doors leading to toilet rooms should be full height, completely fill the opening and be self-closing.

- Toilet rooms without means of natural ventilation should be effectively mechanically ventilated to the outside air.

- Where mechanical ventilation is used, it should be activated by a common switch with the artificial lighting in the area.

- Toilet rooms which are mechanically ventilated should have a louvered section at least 300mm x 300mm in the lower panel of the door.

- Toilet rooms should not be entered directly from a workroom but entrance through an intervening dressing room or ventilated toilet room vestibule is permitted.

- Toilet rooms should not be entered through a shower room.

- Toilet rooms for female employees should be provided with facilities for the disposal of personal hygiene items.

9.5.3. **Shower Room**

Adequate supply of hot water and cold water should be connected to showers and a method provided to remove vapour from shower rooms.

9.5.4. **Change Room**

A separate change room equipped with lockers and seating and having direct access to showers should be provided.

9.5.5. **Furniture and Fittings**

- Lunch tables should be provided with smooth impervious tops and edges, and be constructed so the tables can be readily clean.
- Adequate seating that can be readily cleaned should be provided in lunch rooms.

9.5.6. **Hand Wash Basins**

- Hand washbasins should be provided in sufficient number on close aproximity to the toilet room entrance. The basin should be operated by pedal or thigh and supplied with liquid soap dispensers.
- Acceptable hand drying systems and receptacles for used towels should be provided.
- An adequate supply of warm water should be connected to the basins.

9.5.7. **Lockers and Seating**

Lockers should have dimensions of at least 375mmx 1.5m, and have 45 degree slopping tops. Alternatively, the area between the tops of the lockers and the ceiling may be enclosed.

Lockers should be mounted 400mm clean of the floor.

10. EQUIPMENT

10.1 Introduction

- Equipment should be constructed of such materials and in such a way as to easily cleaned and properly maintained.

- The design, construction, installation and use of equipment must preclude the adulteration of product with lubricant, metal fragments, contaminated water or other contaminants.

- Materials used, which directly contact the product, should be non-absorbent, non-toxic, odourless and unaffected by the product and cleaning compounds.

- Equipment should be selected and designed to contribute to a good working environment, with carefully attention being given to factors such as safely, noise, vibration and meat.

- Product contacting equipment should be constructed from approved material.

10.2 **Metal**

- Metal used in the construction of equipment should be rust resistant.

- Galvanized steel may be used for certain application, provided the galvanizing is to the standard of 'high quality and smooth finished' commercial hot dip.

10.3 **Plastics and Resins**

Plastics and resinous materials should be resistant to abrasion and heat, shatterproof and non-toxic. In addition, the materials must not contain a constituent that will migrate to poultry meat or other poultry products in contact with it.

10.4 **Unacceptable Materials**

Aluminum and copper, including their usual alloys, are not acceptable for equipment which contacts edible product. Copper water pipes are acceptable.
Cadmium is not acceptable in any manner or form in equipment used for handling edible product.
Lead may not be used in equipment contacting edible product, except that it may be used in soldering in an amount not exceeding 5 percent.
Paint is not acceptable on any product contact surface.

10.5 **Design and Construction**

10.5.1. Equipment should be designed and constructed so that all parts are readily accessible for cleaning and inspection.

10.5.2. All interior corners should be rounded and of sufficient radius to allow easy drainage and cleaning. All welds should be continuous, smooth even and flush with adjacent surface.

10.5.3. External surfaces of equipment that do not come in contact with food should be free of open seams. Gaps, crevices and inaccessible recesses.

10.5.4. Casketing and packing materials should be non-toxic, non-porous, non absorbent and unaffected by food products and cleaning compounds.

10.5.5. Seals and bearings should be located outside the product contact area.

10.5.6. Equipment requiring lubrication should be designed so that product is not contaminated by lubricant. Removal drip trays should be provided where necessary.

10.5.7. Where necessary, equipment should be self-draining capable of being drained.

10.6 **Installation**

10.6.1. Where permanently installed equipment, or equipment not readily movable, is not completely and effectively sealed to the floor or wall in a way that precludes the entrance of moisture between the equipment and the floor or wall, the equipment should be positioned to allow easy access for cleaning and inspection.

10.6.2. Water wasting equipment should be connected directly to the establishment drainage system to ensure that the water does not flow over the floor.

10.6.3. Drainage connections from equipment used for processing edible product should be connected to the drainage system by an interrupted connection.

10.6.4. Anti-back siphonage devices or other measures must be provided to prevent back siphonage water to equipment.

10.6.5. Electrical control cabinets and exposed conduit should be mounted at least 100mm clear of the wall and conduit should be mounted at least 25mm clear of the wall.

10.6.6. Exposed plumbing services should be mounted at least 25mm clear of walls, columns or ceilings.

10.6.7. Lagging on pipes in edible product areas should be suitably protected to prevent contamination of edible products.

10.6.8. Lighting should be installed so that surface mounted or recessed light fittings preclude dust and dirt accumulation. Suspended light fittings should have a 45^0degree slopping cap and the suspension apparatus should not allow the accumulation of dirt. Light fittings in processing or storage areas must be provided with shatterproof shields or covers. The light produced should not distort colours.

10.7 Compressed Air

10.7.1 Where compressed air is used in any equipment that allows the air to come into direct contact with edible product, possible contamination from moisture and oil from the compressor should be prevented by providing an effective drain in the compressed air

storage tank and an effective filter, located as near as possible to the outlet, in the air discharge line.

10.7.2 Air filters should be capable of frequent cleaning.

10.7.3 The air exhaust ducts should be directed away from edible product and where possible, should be discharged to the outside atmosphere.

10.8 Tables

Tables on which edible product is handled or otherwise treated should, when possible against walls, be provided with suitable splash back.

10.9 Work Platforms and Stands

10.9.1 Work platforms should be of rust resistant metal and be of a closed surface design or concrete construction.

10.9.2 Foot stands should be constructed of rust resistant metal, approved plastic or other approved materials and be of a closed surface design.

10.9.3 Standards for preventing edible product containers from contacting the floor should be of rust resistant metal or other approved material and raise the containers at least 300mm from the floor.

10.10 Giblet Washing Equipment

10.10.1 Where giblets are manually washed, equipment should consist of a removable perforated rack positioned in a special sink or other container in such a way that product is prevented from contacting the bottom of the container.

10.10.2 An overhead spray system should be provided supplying potable water at sufficient pressure to effectively clean the product.

10.10.3 Wash water should not be able to accumulate in the container.

10.11 Hand Wash Facilities

10.11.1 Hand washbasins of approved design and material should be provided at convenient locations in all processing stations. They

should be of sufficient size to retain splash and be pedal of thigh operated. Soap and paper tower dispensers should be provided with each unit.

10.11.2 Hand washbasins should be connected directly to the drainage system.

10.11.3 Hand rinsing facilities with connections that permit a continuous flow of water shall be provided at strategic positions on the processing line.

10.12 Sterilizers

10.12.1 Should be provided at strategic locations in processing areas. They should be of sufficient size to allow complete immersion of equipment in hot water or an approved chemical sterilizer. Sterilizers should have water connection means for maintaining the temperature of the water, and an overflow. Where sterilizers are used in association with hand washbasins the overflow may be directed into the bowl of the hand washbasin.

10.12.2 Where applicable an approved chemical may be used for sterilizing.

10.13 Plucking Machines and Spray Washing Equipment

Should be designed and constructed so that feathers, contaminating materials and water are confined to minimize 'splashing' of surrounding areas.

10.14 Perforated Trays

Used with equipment for washing and draining of product should be removable.

10.15 Closed Long Chutes

Closed long chutes or pipes used for transfer of product should be demountable or provided with inspection plates for cleaning purposes.

10.16 Equipment Washing

10.16.1 An equipment washing area independently drained and adequately ventilated should be available in a part of the premises set aside for that purpose. This area should be separated from processing, packaging and storage sections but with direct communications.

10.16.2 The dimensions of the washing area should be commensurate with the operations of the premises and the number of product containers used for delivery purposes.

10.16.3 A wash up trough of adequate size to allow immersion of containers, trays, utensils and other portable equipment normally used in the premises should be provided. A permanent and adequate supply of hot and cold running water should be laid onto the trough. Racks for air drying of containers, trays, utensils and other equipment should be provided.

10.16.4 Automatic washing machines used in the cleaning of product containers should operate in a way, which ensures that a continual flow or potable water is maintained. Where recycled water is used in such machines, an approved process, which ensures that potability is maintained at all time, should be in operation.

11. POULTRY SMALL GOODS

11.1 Introduction

This section covers processed poultry products other than canned poultry products and includes poultry that is subject to curing, smoking, cooking and poultry containing additives.

11.2 Location

Small goods operation should be located in an edible product section of the premises.

11.3 Basic Construction

Construction requirements should be in accordance with the sections headed "Basic Construction" and "Service".

11.4 Specific Construction Requirements

11.4.1 Separate rooms should be provided for the following operations:

- boning, cutting and trimming poultry
- curing
- smoking/ curing

11.4.2 The minimum distance from the floor to a wall or ceiling plate in the cooking room should be 3m.

11.5 Poultry Meat Preparation Room

11.5.1 Where poultry meat is to be prepared by boning, slicing, mincing or the like, a separate room should provided..

11.5.2 The poultry meat preparation room should be constructed in accordance with the section "Basic Construction" except that where meat is held so as not to rise above 7 degrees Celsius. The room needs not be temperature controlled.

11.6 Bringing and Pickling Rooms

11.6.1 Where bringing or pickling operations are carried out, a separate room, capable of being temperature controlled at or below 10 degrees Celsius, should be provided.

11.6.2 Prickling tubs should be of sanitary construction and of approved design.

11.7 Poultry Meat thawing Rooms

11.7.1 Where thawing I s by immersion in water, the rate of change of water should ensure that the mass of water exchange in a unit of time is at least equal to the mass of meat treated in the same time.

11.7.2 Thawing should be constructed in accordance with the section headed "Chillers".

11.7.3 The method of disposal of used cartons and wrappings should be in a manner so as to be continuous and not cause product contamination.

11.8 Smoke Room

11.8.1 Where smoke rooms are not individually drained, the floor should slope at a minimum gradient of 1:50 to a floor waste or wastes immediately outside the room.

11.8.2 An adequate method of extracting smoke to the outside atmosphere should be provided.

11.9 Cooking Room

An adequate of dispensing wrapping material for storing and mixing ingredients and additives intended to be used in the product.

11.10 Packing Room

The method of dispensing wrapping material for storing and mixing ingredients and additives intended to be used in the product.

11.11 Ingredient Room

11.11.1 A separate room or rooms should be provided for storing and mixing ingredients an additives as intended to be used in the product.

11.11.2 Ingredients should be stored in approved containers, which are clearly labeled as to contents.

11.11.3 Rust resistant shelving with the bottom shelf at least 300mm above the floor should be provided.

11.11.4 The room should be equipped for locking.

11.11.5 Facilities should be provided for storing restricted additives under security.

11.12 Refrigerated Storage Rooms

11.12.1 Adequate refrigerated storage space should be provided for all poultry products, other perishable ingredients and perishable finished products likely to be on the premises at any one time.

11.12.2 Chillers and freezers should be in accordance with the section headed “Basic Construction”, “Chillers” and “Freezers”.

11.13 Carton Store

11.13.1 Dust and vermin proof facilities of adequate size should be provided.

11.13.2 Rust resistant shelving with bottom shelf at least 300m above the floor should be provided.

11.14 Vacuum Packaging Operations

Steam producing shrink tunnels should be vented direct to the outside atmosphere.

11.15 Equipment Wash Areas

11.15.1 Where equipment wash areas are provided, they should be supplied with hot and cold wash points, drained as for other wash areas and supplied with facilities to exhaust steam and vapour to the outside atmosphere.

11.15.2 Where the areas are within a processing room, provision should be made to prevent splash onto edible product and exhaust steam and vapour to the outside atmosphere.

11.16 Gear Storage Area

An area should be provided for the storage of aprons and gear when employees are not in the processing areas.

11.17 Hand wash Facilities and Sterilizers

11.17.1 Approved foot or thigh operated basins or troughs, liquid soap dispensers and approved hand drying systems should be located at personnel entrance to processing areas.

11.17.2 Hand wash basins liquid soap dispensers and approved hand drying systems should be strategically located within processing rooms,

PART-2. PROCESSING PROCEDURES DESIGNED TO ENSURE AN ACCEPTABLE STANDARD OF HYGIENE IN POULTRY PROCESSING

1. POULTRY RECEPTION AREA

1.1 Constant attention should be paid to housekeeping in the poultry reception and shackling area to ensure superstructure, motors, ledges etc. are keep free of cobwebs, feathers, dust, vermin etc.

To assist in feather control and to minimize the danger of airborne contamination entering the premises, the poultry reception an shackling area should be cleaned as often as practicable during the days operation and at least at every "in-plant" work break. The entire area should be subjected to a thorough cleaning at the completion of each day's work.

1.2 Rejected, moribund and unhealthy, poultry should be killed immediately and place in containers, provided with close fitting lids, which are clearly marked "Inedible Product".

1.3 Coops, crates and cages used to transport live poultry should be cleaned after each use. Crates, coops or cages should be kept in good repair.

1.4 Sufficient hose points should be provided for washing down and feather control.

1.5 A hand basin with hot and cold water laid on should be provided in close proximity to unloading and shackling.

2. BLEEDING AREA

2.1 The bleeding and de-feathering area should be separated from the reception area by walls except for closing doors fro personnel and openings adequate for the passage of poultry carcasses from one section to another.

2.2 Poultry should be suspended for bleeding or placed in bleeding cones and should not be placed on the floor after bleeding.

2.3 The floor area of any bleeding section should be curbed or so constructed to prevent the escape of blood to other area. Blood should be contained during killing operations, and collected during in-plant work breaks and placed in containers clearly marked for inedible product, for removal from premises. It shall not be washed down into the wastewater disposal system. Where

bleeding tunnel is used, the tunnel and containers should be cleaned during in-plant work breaks.

3. SCALDING

Where controlled water temperature methods are used, agitated scaled tanks should be supplied with a continuous flow of water a t minimum fate of 0.25 of a litre per carcass scalded per minute, and the tanks emptied at least once every working day. Where water supplies are limited, constant replenishment must be carried out to ensure the water is maintained in a reasonably clean condition.

4. DEFEATHERING

4.1 Continuous collection and removal of feathers from the de-feathering and scalding areas during processing operations and n-plant work breaks should be carried out. Feathers should be removed from the areas for treatment or disposal. Drains in plucking areas leading to waste water disposal system should be effectively screened to exclude feathers.

4.2 Containers to receive condemned, inedible or contaminated materials should be provided throughout the premises. A container, drain or mechanical removal system should be positioned at both the head puller and foot-unloader to ensure that all heads and feet fall directly into them. Containers used for condemned, inedible or contaminated materials should be identified by the word" Inedible" clearly marked in a red or other contrasting colour and should not be used for handling edible products.

4.3 Overhead conveyor shackles and droppers used in connection with the stunning, killing, scalding, de-feathering and removal of head and feet should be cleaned by means for a jet spray or other approved method before being returned to the shackling area or being used for further processing of the de-feathered carcass. Where a single line chain system is used to convey carcasses between shackling and evisceration section, the shackle washer should be located within the premises and positioned after hock cutting. Where rotary brushes are used to clean shackles, the brushed must be continually, sprayed with water jets to clean the brushes.

5. EVISCERATION SECTION

5.1 The evisceration area should be separated from the de-feathering section by full height walls except for openings adequate for personnel and for the passage of poultry carcasses from one section to another.

5.2 Before evisceration the outer surface of each dressed poultry carcass should be washed by spray or constant flow or water.

5.3 Viscera should be removed within an hour of bleeding and body-opening cuts must be made in such a manner that the intestinal tract is not pierced.

5.4 Vent opening machines or guns should be flushed between each venting operation. Water flushed from a vent gun must be directed away from suspended poultry carcasses.

5.5 A knife or implement used in the venting operation should not be used to cut into any other part of a poultry carcass unless first sterilized.

5.6 Where vent opening is performed manually a facility for the rinsing of hands implements should be provided. A facility of such nature should also be provided where an employee acts in a "back up" capacity to an automatic vent-opening machine.

5.7 Evisceration tables and benches, where used in manual processing, should be self-draining by means of perforations or a permanently angled surface. A cleaning system should be provided to enable regular cleaning of the table or bench surface. Each set of viscera should be removed from the bench surface immediately after being drawn. Containers used for the collection of viscera should be emptied on a continuous basis to avoid overfilling and spillage.

5.8 Additional appliances such a scissors, knives, evisceration forks and lung rakes should be placed on an approved rack or facility at appropriate work stations when not in use.

5.9 Water flow in an evisceration trough should be in the opposite direction to that in which poultry carcasses are traveling so that carcasses leave at the point where clean water enters.

5.10 Water jets or sprays continuously in operation should be provided along both sides of an evisceration trough or belt for the rinsing of employees' hands and implements during the evisceration process. Where a water supply is limited, a control flow would be acceptable. Hands and implements should be rinsed on a regular basis.

5.11 Where giblets are collected for human consumption, giblets, product contact surfaces and water used in the collection process, should not be contaminated by hand rinse water.

5.12 Hand operated implements used in the evisceration process should be maintained in a clean condition by frequent rinsing in a floe or spray of clean

water. When the implements become visibly soiled they should be set a-side for cleaning and replaced with clean implements.

5.13 Poultry carcasses undergoing processing should not contact structural supports, stays, wall linings or personnel.

5.14 A hand hose or other approved device strategically positioned should be used by employees to rinse their aprons when soiled with faucal or intestinal material.

5.15 Automatic machines used in the evisceration section should be regularly checked to ensure that automatic cleaning sprays used for rinsing product contact surfaces operate effectively.

5.16 Adequate number of personnel should be provided for visual and manual inspection at strategic station at the processing line to ensure satisfactory processing procedures.

5.17 Inspection stations should be provided with hand rinse facilities, mirrors to view the back of the carcasses and retain containers. Facilities for the disposal of inedible material should be provided at the wash point to prevent splashing of the cleaned poultry carcass and other products.

6. WASHING

6.1 The inner and other surface of each eviscerated poultry carcass should be washed by a spray or constant flow of water. Faucal soilage not removed in washing should be trimmed off. Protection in the form of a shield, canopy or cabinet should be provided at the wash point to prevent splashing of the cleaned poultry carcass and other products.

6.2 Sprays used for poultry carcass washing should be adjustable to ensure thorough washing of all classes and sizes of poultry carcasses. Water volume should be regularly monitored to ensure effectiveness.

6.3 Where a trough is fitted under a spray cabinet, poultry carcasses passing through the cabinet should not contact water contained in the trough.

7. GIBLETS

7.1 Separation and recovery of giblets and cleaning of gizzards must be performed in a manner to avoid contamination.

7.2. Giblets should be separated from the viscera immediately after removal from the body cavity and cleaned, trimmed and washed under a continuous flow or spray of water.

7.3. Giblets should be chilled t 4 degrees Celsius or below within one hour of their removal from the viscera and drained to remove free ice and water prior to packing.

7.4. Giblets should not be placed within a dressed poultry carcass unless enclosed in an approved sealed bag of polyethylene of securely wrapped in other approved materials.

7.5. Giblets chiller tanks should be provided with an overflow sufficient to maintain sanitary conditions. Water flow should approximate 1 litre for every 10 poultry carcasses processed.

7.6. Where gizzards are transferred from automatic cleaning machines through pipes assisted by water or vacuum, access to such pipe for inspection and cleaning should be provided. Pipes used similarly for the transfer of hearts and livers should also be provided with access for inspection and cleaning.

7.7. Gizzards cleaned by automatic machines should be subjected to follow up manual inspection.

8. SPIN WASH

8.1 The amount of water necessary in a continuous spin washer must provide an overflow sufficient to maintain sanitary conditions and should approximate 1 litre per poultry carcass.

8.2 Poultry carcasses should not remain in the spin wash tank during breaks which exceed 15 minutes unless the temperatures of the water is lowered to and maintained at 4 degrees Celsius or below.

8.3 A spin washing appliance should be of a counter flow design so that the carcasses move into clean water as they are conveyed through the appliance to the discharge end.

9. CHILLING

9.1 Poultry should be chilled to 4 degrees Celsius or below within 1½ hours of evisceration.

9.2 Water intake necessary in continuous agitated immersion chillers should provide an overflow sufficient to maintain sanitary conditions and should approximate 0.75 liters per poultry carcass.

9.3 Agitation in continuous chillers, either mechanical or air, should stop when elevators or conveyors that remove carcasses from the unit are turned off, in order to minimize water uptake of poultry carcasses. Only filtered air should be used for agitation purposes.

9.4 Temperature of water in the spin chiller should not exceed 4^0 C.

9.5 Where an automatic chlorinator is used, regular monitoring should be carried out to ensure accuracy of quantity added.

9.6 Benches, trays, tables or chutes receiving poultry carcasses from spin chillers should be self draining.

9.7 Where ice is added to continuous spin chillers, it may be accepted as portion of the minimum requirement of 0.75 litres of water per poultry carcass.

9.8 Ice used in poultry processing whether manufactured ice or ice made on the premises should be made from potable water and should be stored and handled to ensure that it is protected from contamination at all times. Personnel should not enter a crushed ice storage freezer where ice is augured from the floor unless the ice has been protected from contamination.

9.9 Non-agitated immersion chill tanks may be accepted where a water supply is limited provided the maximum temperature of the water in the tank does not exceed 4 degrees Celsius and is maintained in a reasonably clean condition.

9.10 Motors and drive gears located directly over spin wash and spin chill tanks should be provided with protective trays to prevent contamination of the product.

10. DRIP LINES AND DRAINING

10.1 Overhead drip lines should be positioned to avoid contamination of dressed poultry carcasses by drip or contact.

10.2 Drain trays or trough should be placed under overhead drip lines where they pass over a passageway or section where dressed poultry carcasses are being processed. Drainage from the tray or trough should be directed to a waste or drain.

10.3 The line should be positioned to ensure that suspended poultry carcasses would not contact plant personnel. The speed of the drip line should ensure that suspended poultry carcasses adequately drain.

10.4 The number of draining racks or draining facilities should commensurate with daily throughput of the premises.

10.5 Where poultry carcass, draining racks or other draining facilities are used by they should be positioned in such a manner to avoid drainage from one carcass to another.

11. PACKING AREA, PACKAGING AND PACKING MATERIAL

11.1 The poultry packing area should be separated from other sections to minimize contamination. A full separated is preferable.

11.2 Containers for storing and transporting of dressed poultry carcasses or products should be of material capable of being maintained in a clean condition.

11.3 Baskets and containers returned from an outside source should be cleaned before being used in processing operations and should be stored within the premises on an impervious floor while awaiting cleaning.

11.4 Returning baskets and containers, awaiting cleaning should be stored in a separate area located so as to minimize the risk of cross contamination to product and equipment. Water used in the cleaning of returned containers should not be used for the cleaning of other equipment.

11.5 Products containers cleaned by automatic washing machines should be subjected to follow up inspection.

11.6 Packing materials should be clean, unused, and free from contaminating substance and objectionable odours and of sufficient strength and durability to protect the poultry carcasses and poultry products from contaminations.

11.7 All packaging materials should be stored under sanitary conditions in a vermin proof dry area on racks located in minimum height of 300mm above the floor, or on pallets if located away from walls.

11.8 Where packaging material is used in the processing area adequate racks should be provided. The rack should be not less than 100mm above the floor and all packaging material should be place in the racks, not directly onto the floor. Pallets should not be used in the processing area unless made of approved impervious material

11.9 Poultry carcasses and poultry products whether wrapped or unwrapped should not be placed on the floor.

11.10 Unwrapped poultry carcasses and poultry products should not contact cold room walls or any surface likely to contaminate the product.

11.11 Poultry carcasses and poultry products should not be placed in a container used for evisceration purpose or a container for inedible products.

11.12 Trays and receptacles containing dressed poultry carcasses or poultry products should be placed on approved racks not less than 100mm above the floor.

11.13 Dressed poultry carcasses and poultry products should not be taken into or conveyed through rooms or areas that contain live poultry or refuse. The flow of products should be one of progressive processing toward final packaging and not in a reverse direction.

11.14 Wooden pallets should only be used in freezers and packaged product dispatch areas.

11.15 Where dispatching of bulk unwrapped product in P.V.C. crates is carried out, wooden pallets may be used provided each crate is individually covered with an approved non-absorbent material, adequate to protect the stored product.

12. BREAKING UP AND BONING OUT

12.1 Where poultry meat is prepared by boning or cutting up, a separate room should be provided. Where limited space precludes separation by a room, the breaking up or boning out operation should be carried out under hygienic condition in an area free from any source of contamination.

12.2 Hand wash facilities, readily accessible to all employees should be provided in boning and cut up areas.

12.3 Poultry meat placed in product containers stored on racks under work tables and benches should be protected from contamination from the underside of work tables and from residue from work surfaces above.

12.4 Where packaging material including plastic bags and tray packs are stored on shelves, or in a racking system, above work tables and benches, regular checking of the cleanliness of the storage system should be carried out to ensure that products below are not exposed t contamination.

12.5 The packing of tray packs with poultry pieces should be conducted in a manner that minimizes the stacking of unwrapped packs on top of one another.

12.6 Tables, bins and containers used for the receival of unwrapped carcasses for bagging and pieces processing, should be self-draining. Bins or containers used for the receival of unwrapped pieces should also be self-draining.

12.7 To avoid product deterioration from increased temperatures, carcasses and pieces awaiting processing should flow continuously in an orderly manner to ensure uniform turn over of accumulated product.

12.8 Where saws and implements are contaminated during the processing of poultry carcasses or poultry products, the affected equipment should be thoroughly cleansed and sanitized.

12.9 Regular monitoring of the sanitary condition of skinning machines should be carried out during processing operations.

12.10 The wearing of approved impervious gloves by personnel engaged in bagging and pieces processing is desirable.

13 THAWING

13.1 Dressed poultry carcasses and poultry products should not be thawed except under approved conditions and should not be refrozen.

13.2 If thawed in a tank, a continuous flow of water sufficient to keep the water clean should be provided and the temperature of the water should not exceed 20 degrees Celsius.

13.3 If thawed in the atmosphere, the temperature of the air in the facility in which thawing take place should not exceed 15 degrees Celsius

14 PERSONNEL

Management should ensure that:

14.1 Persons engaged in handling live poultry should change their outer protective clothing and wash and sanitize their hands and wash their boots before being permitted to be engaged in processing operations. Soap and water is acceptable for washing hands.

14.2 Employees rotating their duties during processing operations should wash and sanitize their hands, aprons, knives, pouches and wash their boots before moving to another work section.

14.3 Employees should wear clean protective outer garments at the commencement of each day's work.

14.4 Employees should remove protective aprons, gloves and equipment before entering the toilet and wash their hands after using it.

14.5 A rack should be provided so suspend employees' aprons and equipment when not in use.

14.6 Protective clothing provided to employees engaged on outside work or handling live poultry should be readily identified and used for that purpose only. Aprons must be kept clean and when no in use suspended on a rack in an area apart from other aprons.

14.7 A person entering a section where unwrapped product is handled should wear head covering of a type that will prevent hair from falling onto the product.

14.8 Protective gloves including woven steel mesh gloves worn by employees should be clean at the commencement of each day's work. Gloves should be replaced when deterioration or peeling occurs. The wearing of gloves does not exempt the operator from having thoroughly washed hands.

14.9 An employee whose clothing and body (as far as in visible) is not clean should not take part in processing operations.

14.10 Employees should wash their hands, boots and aprons before rejoining processing operations.

14.11 An employees suffering from an infectious disease, whether notifiable by law or not, suffering from a skin infection or who has an open wound or an unclean bandage on an exposed part of the anatomy, should not take part in processing operations.

14.12 Maintenance staffs servicing machinery during processing operations are dress in a manner that will not contaminate equipment and product.

14.13 During periods where food is manipulated by hand, any jewellery that cannot be adequately disinfected should be removed from the hands. Personnel should not wear any insecure jewellery when engaged in food handling.

14.14 Precaution should be taken to prevent visitors to food handling areas from contaminating food. These may include the use of protective clothing.

14.15 Responsibility for cleaning compliance by all personnel with all requirements of sections 14 should be specifically allocated t competent supervising personnel.

15. EFFLUENT

15.1 Effluent containing solid materials should be directed through a separator, indirect waste separator or save-all which should effectively retain the solids prior to the discharge of the effluent in such a way as not to create a nuisance, and which should emptied and cleaned daily. Effluent treatment must comply with conditions of appropriate authorities.

16. DISPOSAL OF INEDIBLE OFFALS

16.1 If facilities are not provided for immediate treatment of offal, it should be placed in leak proof containers with close-fitting lids and stored on a drained and curbed concrete slab located outside the processing area but under cover, pending disposal at the end of the day's operations.

16.2 Offal should be disposed off on a daily basis. Where large quantities of offal are involved dry rendering or wet rendering should be undertaken.

17 GENERAL

17.1 Food should not be consumed in processing premises other than in designated areas.

17.2 Light fittings should be so constructed to minimize the collection of dust. Protectors of non-shattering material should be fitted over, light bulbs and fluorescent tubes in processing areas.

17.3 Dogs, cats and other domestic animals shall be excluded from areas where poultr is processed or stored.

17.4 Smoking and expectorating shall not be permitted in poultry handling area.

17.5 Appropriate signs relative to the removal of protective outer garments and washing of hands should be prominently displayed throughout the premises, and signs prohibiting the entry of dogs and cats should be displayed.

17.6 Approved chemicals only should be used in a poultry slaughter-house.

17.7 Hoses when not in use should be stored on reels or rack. Wash down hoses should not be immersed in water or contact product in the act of filling containers or the like.

17.8 The premises shall not be used for any purpose other than processing poultry.

17.9 All unused equipment and extraneous material should be removed from processing premise.
17.10 Chilled poultry products should be transported in a refrigerated vehicle.
17.11 Such vehicles should conform to acceptable hygiene standard and temperatures should be adequate to maintain the product in a sound wholesome condition during transportation.
17.12 Internal lining should be of an approved hard wearing non-absorbent material and be constructed so as to be capable of being cleansed.
17.13 Vehicles used to convey inedible offal should not be reused unless they have undergone cleaning and sanitizing.
17.14 A lot/batch is a quantity of food product under identical conditions, all packages of which should bear a lot number that identifies the production during a particular time interval.

18. CLEANING

18.1 Every part of, and everything in, a plant shall be kept clean, tidy, and free of vermin and in good repair.

18.2 Without affecting the generality of 18.1:

(a) all floors, steps, stairways, doors, windowsills and drains, and all equipment used in the process shall be cleaned at the end of each day's operations;

(b) all vehicles, coops, crates and cages used for the delivery of live poultry to a plant shall be cleaned after each delivery.

(c) All chains, shackles, droppers and other equipment used for the conveyance of poultry, the supports of that equipment, all overhead lights and their support, all overhead joist, beans, pipes and all other overhead things shall be kept clean and free of rust, scale, flaking paint and dripping lubricant;

(d) All refrigerated facilities shall be dry-cleaned daily;

(e) All toilets and the floors of the rooms in which they are situated shall be washed daily with hot water to which a detergent has been added;

(f) All buildings, loading bays and holding areas, and the environs of all such places, shall be cleaned so as to prevent the accumulation of dust, debris and manure; and

(g) All amenity rooms shall be cleaned daily.

In carrying out any cleaning required under subparagraph 18.2, a hose shall not be used in the vicinity of poultry meat, which is being processed.

18.3 Roadways and yard in the immediate vicinity of and serving the premises should be kept clean.

18.4 A permanent cleaning and disinfecting schedule should be drawn for each establishment to ensure that all areas are appropriately cleaned and that critical areas, equipment and material are designed for special attention. A single individual who should preferably be a permanent member of the staff pf the establishment and whose duties should be independent of production, should be appointed to the responsible for the cleanliness of the establishment. He should have a thorough understanding of the significance of contamination and the hazards involved. All cleaning personnel should be well trained in cleaning to techniques.

19. STORAGE AND TRANSPORT OF THE END PRODUCT

The end product should be stored and transported under such conditions as will preclude the contamination with and / or proliferation of micro-organisms and against deteriorating of the product or damage to the container. During storage, periodic inspection of the end product should take place to ensure that only food, which is fit for human consumption, is dispatched and that end-product specifications are complied with when they exist. The product should be dispatched in the sequence of the numbers.

ANNEXURE – XIII: ABATTOIR CATEGORY – B

Those abattoirs approved by BAFRA for commercial purpose with relatively less capacity of 100-300 heads of animals per week and less than 15,000 birds per week.

1. Location

a) The slaughterhouse shall be located in a place that has been approved by the BAFRA

b) The place shall be readily accessible by motorable roads.

c) The location should not be exposed to flooding or landslides.

d) There must be an adequate supply of potable water.

e) The location shall be such that wastewater, effluents and solid waste can be disposed of properly without polluting the environment.

f) There should be no industry, dwellings or livestock farm or the religious site or religious community in the immediate vicinity.

g) There should be adequate lighting for ante-mortem and postmortem inspection.

2. Construction

The abattoir shall have:

a) A suitable and sufficient lairage or pens for holding animals awaiting slaughter.

b) A simple building structure with an effective protection from weather to enable slaughter and dressing to be carried out undercover. It should have at least two separate rooms, one for stunning cum bleeding and another for carcass dressing.

c) The floors, walls, ceiling and windows should be constructed of materials that are impervious to moisture, smoothly finished, rust resistant, not readily subject to chipping or flaking and easy to clean and disinfect.

d) There must be simple over-head rail system or a structure to enable the dressing and cutting of carcasses into parts in a hanging position and off the floor.

e) Suitable facilities for emptying and cleaning of stomachs and intestines.

f) A suitable separate facility for storage of hides, horns, hooves, fat and other waste materials until it is removed.

g) There should be properly build toilets and the area should be fenced.

3 Equipment and Facilities

a). All equipment, implements and utensils used in abattoirs or establishments which come in contact with meat should present a smooth impervious surface, be resistant to corrosion, made of a material which is non-toxic, does not transmit odour or taste, free from pits, crevices, non-absorbent and capable of withstanding repeated exposure to normal cleaning and disinfection.

b). All surface of tables, benches or shelves that are liable to come into direct with meat should have an impervious, smooth surface that is free from imperfections. Tables on which edible product is handled, suitable splash backs should be provided; and tables having water on their working surfaces should be provided with turned up edges and self-draining.

c). An adequate supply of potable water under sufficient pressure and means to heat this to + 82^0 C for washing and sterilization.

d). Suitable, sufficient and separate receptacles with closely fitting covers for collecting and removing all waste and fresh meat not intended for human consumption.

4. Hygienic Operating Requirements

a). The establishment shall be kept clean and shall be disinfected weekly and at any other times as determined by the BAFRA Inspector.

b). The premises of an establishment shall not be used for any purpose other than for the holding of animals and for slaughtering of animals.

c). No animal other than animals for slaughter should be allowed to enter the holding the premises.

d). All equipment, implements, tables, utensils including knives should be cleaned at frequent intervals during the day, and immediately and thoroughly cleaned and disinfected whenever they come in contact with diseased material, infective material or become contaminated. They shall be cleaned and disinfected at the conclusion of each working day.

e). No meat product, or ingredient used in the preparation of a meat product, shall be exposed to contamination or deterioration.

f). Detergents, sanitizing agents and disinfectants should conform to public health requirements and should not be allowed to come into contact with meat. Any residue of these cleaning agents used for the washing of the floors, walls or edible product equipment should be removed by thorough rinsing with potable water before the area or equipment is again used for handling meat.

g). Pest Control.

Preventing access to the edible product processing and packaging rooms from birds, insects, rodents and other vermin is essential; and as such, the following measures should be instituted:

(1) An effective and continuous programme for the control of insects, birds, rodents or other vermin within the abattoir or establishment should be maintained.

(2) Should pests gain entrance to the premises, approved eradication measures should be instituted. The eradication of pests should always be carried out under skilled supervision and with the full knowledge of the inspector.

(3) Only pesticides approved for use in establishment by the competent authority should be used and the greatest care should be exercised to prevent any contamination of the meat. Pesticides should only be employed if other precautionary methods cannot be used effectively.

(4) Pesticides or other toxic substances should be stored in separate locked rooms or locked cabinets and dispensed or handled only by authorized and properly trained personnel. Every precaution should be taken to avoid contaminating the meat.

(5) When in the opinion of an inspector, any equipment, utensil, room or compartment at a establishment is unclean or its use would be in non-compliance with this manual, he shall detain the article and no equipment, utensil, room or compartment so detained shall again be used until made acceptable.

(6) The outside surrounds of premises shall be maintained in a clean and tidy condition at all times.

5. Hygiene and Health of Personnel

a). Medical examination should be carried out prior to employment of employees and should be repeated yearly or when clinically or epidemiologically indicated. The medical examination should pay particular attention to:

i) infected wounds and sores

ii) enteric infections including parasitic diseases and carrier states especially with respect to Salmonellae ; and

iii) respiratory diseases.

b). The management or inspector should take care to ensure that no employee, while known or suspected to be suffering from or to be a carrier of a disease capable of being transmitted through meat, or while afflicted with infected wounds or sores or diarrhoea, is permitted to work in any establishment in a capacity in which there is a possibility of such a person directly or indirectly contaminating meat with pathogenic micro-organisms. Any ill person should immediately report to management or Inspector that he is ill.

c). Any person who is cut or injured should discontinue working with meat and until he is suitably bandaged and should not engage in any establishment in the preparation, handling, packaging or transportation of meat. No person working in any abattoir or establishment should wear any exposed bandage unless the bandage is completely protected by a waterproof covering, is conspicuous in colour and is of such a nature that it cannot become accidentally detached.

d). The manager of any slaughterhouse should maintain health records of employees for future monitoring by inspectors.

e). Every person engaged in an establishment should wash his hands frequently and thoroughly with soap and detergents under running warm potable water while on duty. Hands should be washed before commencing work, immediately after using lavatory, after handling contaminated material, and whenever else necessary.

f). Every person engaged in abattoir work should maintain a high degree of personal cleanliness while on duty, and should be appropriately attired including (a) head covering and (b) footwear, all of which articles should be washable unless designed to be disposable and which should be maintained in a clean condition consistent with the nature of the work.

g). Every person who visits an area in an abattoir or establishment where carcass or meat are handled should wear clean protective clothing.

h). No part of an abattoir or establishment used for slaughter of animals, dressing of carcass, preparation, handling, packaging or storing of meat should be used for deposit of personal effects or clothing.

i). Any behaviour which can potentially contaminate the meat, such as eating, use of tobacco, chewing, should be prohibited in any part of the establishment used for slaughtering or dressing of carcass or for the preparation, handling, packaging or transportation of meat.

j). Gloves if used in the handling of meat should be maintained in a sound, clean and sanitary condition. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Gloves

should be of an impermeable material except where usage would be inappropriate with the work involved.

6. Principles to be observed during slaughtering and preparation of meat

a). Every slaughter animal must undergo ante- and postmortem inspection.

b). No animal should be slaughtered or dressed in any establishment except when an inspector is present.

c). Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the killing floor, so as to lessen the risk of contamination.

d). All animals brought to the slaughter floor should be slaughtered without delay.

e). The bleeding should be as complete as possible. If blood is intended to be used in preparation, it should be collected and handled hygienically and should in no case be stirred with the hand but only with hygienically acceptable implements.

f). The slaughtering, sticking, bleeding and dressing should be carried out with care so as to ensure the production of a clean carcass, head and edible offals. None of the parts should come in contact with the floor and all contamination should be avoided.

g). Carcass should be separated from each other to avoid contact and contamination once the removal of the hide, skin or pelt has commenced. Separation of carcass, heads and viscera should be maintained until they have been examined and passed by the inspector.

h). The following points should be observed in the skinning operations;

(i) All species, except pigs, should be skinned and this should be done before the carcass is eviscerated in such a manner as to avoid contamination of the carcass. Pigs should be scoured of all bristles, scurf and dirt. The water in the scalding tanks should be changed as frequently as possible.

(ii) Skinned carcass should not be washed in a manner which will allow water to enter either the abdominal or thoracic cavities prior to evisceration.

(iii) Lactating or obviously diseased udders should be removed from all classes of animals. Removal of such udders should take place at the earliest appropriate time during dressing. No secretion should be allowed to contaminate the carcass and therefore udders should be

removed in such a manner that the teat and udder substance remains intact and without any milk duct or sinus being opened.

i). Evisceration should be effected without delay.

j). During dressing the following should be observed:

(i) The discharge of any material from the oesophagus, paunch, intestines or rectum, or from the gall bladder, urinary bladder, uterus or udder should be effectively prevented.

(ii) Any offals intended for human consumption should be removed from the carcass in a manner that will prevent contamination of the organ removed.

(iii) Intestines should not be severed from the stomach during evisceration and no other opening should be made during evisceration into any intestine/paunch. In the case of sheep, lambs/goats and pigs, the removal of stomach and intestines should be carried out without separation.

(iv) Spermatic cords and pizzles should be removed from the carcass.

k). No hides, skin or pelts should be washed or de-fleshed or left in any part of the abattoir or establishment used for slaughtering or dressing of animals or the preparation or holding or any meat intended for human consumption.

l). All stomachs, intestines and all inedible materials should subsequently be treated in parts of the establishment destined for this purpose in accordance with the recognized practices which should pay attention to cleanliness and hygiene.

m). Faecal and other objectionable matter contaminating carcass during dressing should be carefully trimmed off.

7. Transportation of meat and edible offal

a). Meat should not be carried in any means of transport that is used for conveying live animals.

b). Meat should not be carried in the same means of transport as other goods in a way that may adversely affect the meat.

c). Stomachs should only be transported when thoroughly cleaned or scalded, and heads and trotters only when skinned or scalded or dehaired.

d). Meat should not be placed in any means of transport which has not been cleaned before loading and if necessary also disinfected.

e). Carcass, sides and quarter should be hung during transport or placed in a suitable manner on racks or similar equipment.

(g) Suitable racks and closed containers should be used for the transport of unwrapped edible offal.

(h) The floor of the conveyance should not be walked on during loading or unloading except by persons wearing suitable protective clothing and covering over their footwear.

ANNEXURE – XIV: ABATTOIR CATEGORY – C

Those temporary abattoirs approved by BAFRA for slaughter of yaks in the field on seasonal basis.

1. Location

1. The site should be identified by the concerned Dzongkhag in collaboration with *Gup* and relevant *Tshogpa* members and shall be approved by BAFRA.

2. It should be located away from industry, human settlements, livestock farm and religious site or religious community settlements

3. There should be adequate potable water supply and facilities to dispose off effluents and biological waste safely without polluting the environment.

4. The place shall be readily accessible by motor roads and must not be windy and dusty.

2. Construction

The abattoir shall have:

1. A suitable and sufficient holding area animals awaiting slaughter.

2. A simple building structure which shall provide effective protection from weather and enable slaughter and dressing to be carried out undercover. The floor should be concrete which can be readily cleaned and disinfected. It should have at least two separate rooms, one for stunning cum bleeding and another for carcass dressing.

3. A suitable biological waste disposal pit of adequate capacity safe disposal of effluents and other biological waste.

4. There should be properly build toilets.

5. An ample supply of potable water supply for washing animals, carcasses, hand-washing of meat workers, and an abattoir, etc.

3. Equipment and facilities

The premises shall have:

1. There must be simple over-head hook or a structure to enable the dressing and cutting of carcasses into parts in a hanging position and off the floor.

2. An approved stunning equipment.

3. A clean knives and adequate utensils for dressing of dressing of carcasses

4 Hygienic operation requirements

1. The concrete platform shall be kept clean and washed before and after the slaughter of each animal.

2. No animal other than animals for slaughter should be allowed to enter the premises.

3. All equipments, platform, tables, utensils, knives should be cleaned whenever they come in contact with infective material or become contaminated. They should be washed at the end of each working day.

4. No carcass or part thereof shall be exposed to contamination.

5. Hygiene and health of meat workers

1. The management and BAFRA inspector shall ensure that no employee suffering from a disease capable of being transmitted through meat is permitted to work.

2. Every person working in the establishment should wash his/her hands thoroughly with soap before commencing work, immediately after using toilet, after handling contaminated material and whenever necessary.

6. Principles to be observed during slaughtering and preparation of meat

1. Every slaughter animal must undergo ante mortem and post mortem inspection.

2. Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the slaughter room.
3. The bleeding should be as complete as possible.

ANNEXURE – XV: LISTS OF ZOONOTIC DISEASES

1. Anthrax
2. Highly Pathogenic Avian Influenza
3. Brucellosis
4. Cysticercosis
5. Hydatidosis
6. Leptospirosis
7. Rabies
8. Salmenollosis
9. Trichinellosis
10. Tuberculosis

ANNEXURE- XVI: WELFARE STANDARDS FOR TRANSPORT OF ANIMALS

1. Mustering of stock

This procedure causes stress to the animals and as such following conditions shall be fulfilled:

- yards shall be provided with troughs for drinking water
- if animals are kept in yards for more than 24 hours or traveled for more than 24 hours both feed and water should be provided at adequate intervals,
- they shall be sheltered from inclement weather conditions such as extreme heat, wind or cold.

2. Selection of stock

- only healthy and fit animals shall be transported and sick, injured, weak or animals in late pregnancy shall not be allowed to be transported.
- calves and adults shall be transported in separate vehicle or should be partitioned if transported in the same vehicle.

3. Standards for transport vehicles

- it should be clean and disinfected;
- no protrusions or sharp edges such as hinges/latches should be projected out;
- surfaces of vehicle coming in contact with animals should be smooth to reduce bruising;
- deck height should be sufficient for animals to avoid contacting overhead structures;
- flooring materials provided should be of non-slip material, easily repairable, and should not cause injury to hooves/legs
- the spacing of side rails should be such that it prevents trapping of heads or legs of animals;
- the height of the side walls of vehicle shall be high enough to prevent animals from jumping or escaping;.
- partitions and fittings provided shall be well secured;
- design of stock crate shall be such that it shall prevent over crowding and jolting
-

4. Loading facilities

- ramp shall be large enough to allow hips of mature animals to pass easily;
- a flat area at the top of the ramp should be one metre in length should be at the level with the floor of vehicle for easy loading and unloading of animals;
- recommendation for a slope of permanent ramp shall be 1:3 (about 20 degrees);
- surfaces of ramp shall be of non-slip and grooved to provide good grip

5. Loading of animals

- during loading, animals of different species or of different age or sex shall not be mixed to prevent fights and injuries to each other;

- sheep, goats and calves below six months can be transported together;
- Bulls should not be carried together with other stock unless separated by strong partition;
- loading of animals shall be done the rear side of vehicle;
- during loading animals shall not be lifted by horns, ears, head, legs or wool;
- sufficient floor space shall be provided as per the requirement for different species of animals as specified under loading density;
- pigs should not be fed before transport as this can lead to death;
- flappers with a length of a cane stick with a short strap of leather or canvas attached it shall be used whereas use of sticks, metallic pipes, etc shall be prohibited.

6. Unloading of animals

- all requirements similar to loading of animals shall be applied for unloading of animals as well;
- as far as possible animals shall be allowed to walk quietly out of vehicle;
- adequate feed and water shall be made available if be kept in yards for 24 hours or more.

7. In-transit inspection

- animals should be observed at 30 minutes after the start of journey and thereafter at least every 2 hours during transportation;
- a suitable lighting sources shall be carried for observation of animal at night;
- leg of animals shall not be tied during transport in vehicle;
- prompt veterinary aid shall be made available if sickness or injury results during transportation.

8. Duration of journey

- a rest period from 12 to 24 hours shall be provided for immature ruminants and horses that traveled more than 24 hours;
- a rest period from 12 to 24 hours shall be provided for pigs traveled more than 36 hours. Adequate water shall be provided at frequent intervals during the journey.
- mature cattle, sheep or goats shall not be allowed to travel for than 36 hours at a stretch. They shall be offloaded after 24 hours r for feed and water if the journey is to continue for more than 24 hours.
- if the animals are to be walked on foot, a maximum distance for one day should not exceed 30 Km for cattle and 24 Km for sheep and goats.

Unloading & reloading of pigs is undesirable

9. Recommended loading density (during road transport)

Adequate floor space shall be provided such that an animal fallen or cast on the floor shall be able to get up comfortably.

a. Approximate floor space for cattle

Average weight (Kg)	**Floor area (m^2/head)**	**No. of head (per 12.2m)**
250 (100)	0.70 (0.34)	42 (80)
400 (200)	0.87 (0.61)	34 (48)
650 (150)	1.35 (0.47)	22 (62)

Note: *Figure in bracket is for calves and 1.0 m^2 = 10.8 sq. ft.*

b. Approximate floor space for sheep and goats

Average weight (Kg)	**Floor area (m^2/head)**	**No. of head (per 12.2m)**
30	0.17	170
60	0.29	100

c. Approximate floor space for pigs

Average weight (Kg)	**Floor area (m^2/head)**	**No. of head (per 12.2m)**
50	0.22	132
100	0.35	83
150	0.48	60
200	0.61	48

d. Approximate floor space for horses

Age	**m^2/head**
Adults	1.2
18-24 months	1.0
12-18 months	0.9
5-12 months	0.6

e. Approximate floor space for poultry (live weight densities)

Growing/adults fowls

Hot weather - 55 kg/m^2
Other times - 60 kg/m^2

10. Food and water requirements

Species	**Water (litre/head/day)**	**Food (kg/head/day)**
Horses	25	6
Cattle	45	5
Sheep & Goats	4	1
Pigs	5	2

***Note**: 1 litre = 0.22 gallon and 1 kg = 2.2 lb(pound)*
Water : extreme hot weather (> 40^{O}C) double the amount specified above
Feed : good quality hay for(ruminants & horses and grower ration for pigs

11. Specials requirements

Following animals shall be transported separately wherever possible:

- Calves
- Young piglets
- Cow with calf
- Sow with piglets
- Hornless cattle
- Adult bulls
- Adult boars
- Cattle with different sizes or belong to different herds
- Females in advanced pregnancy

Pigs shall not be recommended for transport in extreme heat (38^{O}C or more) as they are highly susceptible to heat

Chicks should be provided with adequate ventilation but at the same time avoid effects of chilling weather or excessive heat.