

CHAPTER 2

FOOD PRODUCT STANDARDS

2.5. MEAT AND MEAT PRODUCTS

2.5.1 Definition:

(a) "animal" means an animal belonging to any of the species specified below: -

- (i) Ovines;
- (ii) Caprines;
- (iii) Suillines;
- (iv) Bovines;
- (v) ³⁴[Domestic rabbits (*Oryctolagus cuniculus*)]

and includes poultry and fish

⁷²[(b) "carcass" means the body of any slaughtered food animal after bleeding and dressing;

(c) "meat" means all edible parts (including edible offal) of any food animal slaughtered in an abattoir that are intended for or have been judged as safe and suitable for, human consumption;

(d) "offal" means all the body parts of slaughtered food animals other than carcass;

(e) "edible offal tissue" are those parts of an animal apart from meat from the carcass that are considered fit for human consumption;

(f) "meat food products" means any product prepared from meat and other ingredients through various processing methods in which meat should be the major ingredient of all the essential ingredients but shall not include the following products:

- (i) Meat extracts, soup, stock and meat sauces;
- (ii) Products containing fragments of meat, but which contain a quantity of meat or meat product not exceeding ten percent of the total weight of the final product;
- (g) "slaughter" means killing of food animals for human consumption in an authorized slaughterhouse;

(h) “Slaughter house/ abattoir” means a licensed place/ building/ premises where food animals are slaughtered humanely in hygienic manner with proper ante-mortem and post-mortem inspection by veterinarian for human consumption;

(i) “Egg” means eggs-in-shell other than broken, incubated or cooked eggs, laid by poultry species or birds meant for direct human consumption or for the preparation of egg products.]

2.5.2 Meat and Meat Products:

⁶⁵[1. Canned or Retort Pouch Meat Products. -

(1) The standards specified in this clause shall apply to thermally processed shelf stable products designated as canned or retort pouch meat products.

(2) Canned or retort pouch meat products means the meat products packed in hermetically sealed containers or pouches which have been thermally processed at specified temperature, pressure and time combination followed by rapid cooling to render the product shelf stable.

(3) It may be processed by any of the following process, namely: -

(a) **Canning or retorting:** Meat or meat product is packed in air tight cans, retort pouches or any other containers suitable to the products and processed in thermal processing equipment to specified temperature, pressure and time combination to render the product commercially sterile. The sealed containers shall not show any changes on incubation at 35°C for 10 days or 55°C for 5 days.

(b) **Retort pouch or containers:** Retort pouches or containers are flexible laminates made of metal or plastic foils. They can withstand high temperature processing and are used as an alternative to cans for production of shelf stable-meat products.

(c) **Commercial sterility:** It is a condition achieved by application of heat which renders the product free of viable forms of microorganisms having public health significance as well as other microorganisms of non-health significance capable of reproducing in the food under normal non-refrigerated

conditions of storage and distribution. F value required for achieving commercial sterility of different product will be different based on pH of the product, consistency and composition. F_0 value of the product to be canned or retort processed must be standardised prior to production and marketing of the products.

(4) Explanations. - for the purpose of this sub-clause, -

(a) F Value means the common parameter used for measuring lethality of the heat treatment.

(b) F_0 value indicates minutes required destroying a stated number of microorganisms at a defined temperature; usually 121 °C.

(5) These products may contain only those ingredients which are either standardised or permitted for use in the preparation of other standardised food under these regulations.

(6) The product may contain Food Additives as per Appendix A.

(7) The product shall conform to the microbiological requirement given in Appendix B.

2. Comminuted or Restructured Meat Products. -

(1) The standards specified in this clause shall apply to raw or cooked comminuted or restructured meat products which have been packed in any suitable packing material. This category describes several processing steps (e.g., grinding, cutting, dicing, sectioning, flaking, chunking, slicing, mincing, chopping), ingredients, machineries and cooking methods for processing of comminuted or restructured meat products including mechanically deboned or separated meat products. It is broadly classified into comminuted or emulsion and restructured meat products.

(2) Comminuted meat products means boneless meat which has been subjected to particle size reduction by cutting or grinding or dicing or chopping or milling or marinated, or both and with or without additives. This category also includes meat emulsions or batters which are finely comminuted meat products containing true solutions, gels, emulsified fat and air. An emulsion is defined as mixture of

two immiscible liquids, one of which is dispersed in the form of small droplets or globules in the other liquid.

(3) Comminution is a process by which particle size is reduced for incorporation of meat raw materials into finished products. Comminuted or Emulsion meat products are made by chopping meat and water with the addition of common salt (NaCl) until a fine, protein-rich slurry is formed. This matrix is then capable of binding fat, water and other non-meat ingredients. After cooking, the salt soluble proteins are coagulated and this results in an immobilisation of the fat, water and other constituents. The basic structure of a meat emulsion is a mixture of finely divided meat constituents dispersed as a fat-in-water emulsion, where the discontinuous phase is fat and the continuous phase is water containing solubilised protein components. After cooking, these products can also be smoked.

(4) Restructured meat products means meat or meat products that have been ground, flaked, or chopped and formed into steak or chop or any other shape with a texture that is closer to that of an intact steak than that of ground meat.

(5) Restructured meat products are prepared by flaking, grinding or chopping meat so that it is formed into steak or chop like products with texture closer to intact meat. Chunked, ground, diced or flaked meat pieces are used in restructured products wherein the meat pieces bind each other with proteins extracted through mechanical action using tumbling or blending or massaging. Alternatively it can be restructured using a small amount of meat emulsion or non-meat binders along with salt, phosphates and other ingredients.

(6) These products shall be prepared from meat, mechanically deboned or separated meat or edible by products from meat animals or poultry.

(7) These products may also contain those ingredients which are either standardised or permitted for use in the preparation of other standardised food under these regulations and includes but not limited to the following ingredients, namely:-

(a) Trimmings, fat, skin, edible by-products, mechanically recovered meat (MRM) or mechanically deboned meat (MDM). There is no limit on usage of MRM derived from poultry. However, for MRM derived from other food animal, the usage limit is limited to 20% of the meat portion of the product.;

- (b) Water, herbs, sugar, spices, preservatives, condiments, stabilizers, hydrolysed vegetable protein;
- (c) Carbohydrate and protein binders such as,-
 - (i) milk powders, caseinate, whey powder, egg protein, vegetable protein products;
 - (ii) meal, flour, fibres or starch prepared from cereal, grain, potato or sweet potato;
 - (iii) rusk, bread, biscuit or bakery products;
 - (iv) sucrose (sugar and brown cane sugar), dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup);
 - (v) Other Dairy products and analogues;
- (d) Fats, oils and fat emulsions;
- (e) Fruits, vegetables, Fruit and vegetable juices, Fruit and vegetable nectars and protein products derived from vegetable sources such as soya beans;
- (f) Cereal and cereal products;
- (g) Egg and Egg products;
- (h) Sweetening agents including honey (Excluding artificial Sweeteners);
- (i) Salt and salt substitutes, Black Salt, Herbs, Spices, Masalas, seasonings and condiments, Vinegar, Mustards, sauces and like products; Yeast and like products, Soybean based seasonings and condiments;
- (j) Water soluble hydrolysed protein;
- (k) Carrageenan, Gellan gum, Guar gum, Gum Arabic (Acacia gum), Karaya Gum, Konjac Flour, Cellulose gel, Processed Eucheuma Seaweed, Sodium Carboxymethyl Cellulose, Xanthan gum;

(8) The final product shall comply with the following requirements, namely:-

(a) These products shall have minimum of 50% meat (including lean meat, fat and edible offals). Lean meat portion shall not be less than 25% of the total formulation.

(b) These products shall have a maximum fat content of 30% for pork, 25% for rest of the food animals and 15% for birds and rabbits.

(c) Extenders or binders are allowed up to a level of 3.5% in the finished products. Meat products containing more than 3.5% binders or extenders or more than 2.0% isolated soy proteins must be labelled as “Imitation”.

⁸¹[For the purpose of this clause, ‘extenders’ and ‘binders’ are defined as:

(i) Extenders: Extenders are non-meat substances with substantial protein content and are added to meat products to reduce formulation costs and provide certain functional properties related to product bind, texture and flavor. A common functional property of most extenders is water holding.

(ii) Binders: Binders are non-meat ingredients with an ability to hold and entrap fat and water to produce stable meat emulsion. Binders are primarily used to improve the water holding capacity of the product and also to improve the fat holding and emulsion stability.]

⁸¹[(d) Final product moisture content shall not exceed four times the protein content plus 10% (4P+10%). However, combination of added water and fat shall not exceed 40%.]

(e) Low fat products shall not contain more than 10% fat, while extra lean products shall be less than 5% fat.

(9) The product may contain Food Additives as per Appendix A.

(10) The product shall conform to the microbiological requirement given in Appendix B.

(11) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 18 °C.

3. Cured or Pickled and Cooked or Smoked Meat Products, or both.-

(1) The standards specified in this clause shall apply to cured or pickled and cooked or smoked meat products, or both which have been packed in any suitable packing material. This category describes several processing steps (e.g., curing or pickling, salting, cooking, smoking) that preserve and extend the shelf life of the meat and poultry products.

(2) Cured meat means the product prepared after curing meat with common salt, nitrate or nitrite and adjuncts for the purpose of preservation and obtaining desirable colour, flavour and shelf life.

(3) Meat pickle is traditional, shelf-stable ready-to-eat products which are prepared using common salt, vinegar and edible vegetable oil, seasoned with spices and condiments.

(4) Smoked meat means the product prepared by exposing the cured or cooked meat to smoke produced by hard wood for flavor and preservation. Alternatively, liquid smoke (oil-based, water soluble or dry powder) shall be applied to meat through dipping or drenching, atomising (spraying) or directly mixing with meat formulation.

(5) In curing, smaller meat pieces or bigger cuts either deboned or bone-in shall be dipped in or injected with curing solution. There are two types of curing methods; wet and dry. In wet curing, the meat cuts are either dipped in curing solution or injected with curing solution using multi-needle injector or hand stitching or arterial injection followed by dipping or tumbling. In dry curing, all the curing ingredients are rubbed over the meat surface and stored for a long time under temperature and humidity control.

(6) Cured meat may be steamed or pressure cooked or smoked. Alternatively cured meat may be subjected to maturation and drying or smoking. Smoking is done through the addition of either traditional vapors or liquid smoke to meat. There are two types of smoking; natural wood smoke and liquid smoke. Natural wood smoke is generally produced from non-resinous hardwood sawdust, woodchips, or logs. The smoke may be produced from an electronically controlled smoke generator or from a variety of much simpler versions, ranging from log burning to human power controlled smoke generators.

(7) For the purpose of pickling, boneless or bone-in meat cubes or chunks shall be subjected to cooking, followed by light frying, added with vinegar, seasoned with pre-processed spice mix, condiments and covered with heated and cooled oil.

(8) It shall contain meat, curing ingredients consisting of food-grade salt (NaCl or Potassium chloride), Nitrites and phosphates and for pickled meat product it shall contain vinegar also.

(9) These products may also contain those ingredients which are either standardised or permitted for use in the preparation of other standardized food under these regulations and includes but not limited to the following ingredients, namely: -

(a) Carbohydrate and protein binders such as, -

(i) milk powders, caseinate, whey powder;

(ii) hydrolysed vegetable protein, soya or caseinate;

(iii) Sugar, sucrose (Sugar and Brown cane sugar), dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup), honey, treacle or molasses;

(b) Herbs, Spices, seasonings and condiments, Saffron, Vinegars, Mustards, sauces and like products; Yeast and like products, Soybean based seasonings, Juniper berries and Smoke or smoke essences.

(10) The product may contain Food Additives as per Appendix A.

(11) The product shall conform to the microbiological requirement given in Appendix B.

(12) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 18 °C (except pickled meat products).

4. Dried or Dehydrated Meat Products.-

(1) The standards specified in this clause shall apply to dried or dehydrated meat products which have been packed in any suitable packing material. This category

describes several treatment methods (e.g., curing, salting, pickling and drying) that preserve and extend the shelf life of the meat and meat products.

(2) Dried or dehydrated meat products means the meat or meat products in which part of free water has been removed by evaporation or sublimation. Meat products preserved by dehydration are conveniently divided into two groups based on water activity (a_w) levels; “low-moisture” and “intermediate-moisture” meat products. It may be of following types, namely: -

(a) Low-moisture meat products: Meat products having an a_w of less than 0.60 and containing less than 25% moisture.

(b) Intermediate-moisture foods: Meat products having an a_w between 0.60 and 0.85 and containing less than 50% moisture.

(3) Dehydration method of preserving meat lowers the moisture content of the product to a point at which the activity of food-spoilage and food poisoning microorganisms is inhibited. Moisture removal may be accomplished by low-temperature drying (<48.88 ~ 49.0 °C) or high temperature drying (>93.33 °C). Drying of meat shall be done through salting or solar or mechanical or vacuum or freeze drying to achieve the desired moisture and water activity level.

(4) These products may also contain those ingredients which are either standardised or permitted for use in the preparation of other standardised food under these regulations and includes but not limited to the following ingredients, namely: -

(a) Food-grade salt (NaCl or Potassium chloride), Nitrites and phosphates;

(b) Trimmings, fat, skin, edible by-products, mechanically deboned meat (MDM) or mechanically recovered meat (MRM);

(c) Carbohydrate and protein binders such as, -

(i) milk powders, caseinate, whey powder, egg protein, vegetable protein products;

(ii) hydrolysed vegetable protein, soya or caseinate;

(iii) meal, flour, fibres or starch prepared from cereal, grain, potato or sweet potato;

(iv) rusk, bread, biscuit or bakery products;

- (v) sucrose (sugar and brown cane sugar), dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup), honey, treacle or molasses;
 - (vi) Other Dairy products and analogues;
- (d) Black Salt Herbs, sugars, spices, Masalas, seasonings and condiments, Saffron, preservatives, stabilizers, Vinegars, Mustards, sauces and like products; Yeast and like products, Soybean based seasonings and condiments, Juniper berries;
- (e) Fats, oils and fat emulsions;
- (f) Fruits, vegetables, fruit and vegetable juices, fruit and vegetable nectars and protein products derived from vegetable sources such as soya beans;(g) Cereal and cereal products;
- (h) Egg and egg product;
- (i) Sweetening agents including honey (Excluding artificial Sweeteners);
- (j) Water soluble hydrolysed protein;
- (k) Carrageenan, Gellan gum, Guar gum, Gum Arabic (Acacia gum), Karaya Gum, Konjac Flour, Cellulose gel, Processed Eucheuma Seaweed, Sodium Carboxymethyl Cellulose, Xanthan gum;
- (l) Smoke or smoke essences;
- (5) The product may contain Food Additives as per Appendix A.
- (6) The product shall conform to the microbiological requirement given in Appendix B.
- (7) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 180C (except low-moisture meat products).

5. Cooked or Semi-Cooked Meat Products. -

(1) The standards specified in this clause shall apply to cooked or Semi-cooked meat products which includes cooked (including cured and cooked) and heat treated meat products.

(2) Cooked meat means the meat or meat product subjected to heat treatment, wherein minimum thermal core temperature of 75 °C is achieved.

(3) Semi cooked meat means partially heat treated meat or meat product that will require additional cooking before consumption.

(4) Process of preparation of cooked or semi cooked meat products involves marination or mixing of meat (bone-in or boneless) or meat mince with different ingredients like brine, spices, binders, fat, additives etc., may be additionally coated, and heated to particular temperature time combination. Cooking improves sensory qualities and extends shelf life by destruction of spoilage organisms and enzymes. Cooking can be achieved by dry heating (roasting, broiling, frying), moist heating (braising, broiling or water cooking, oven heating, steam cooking) or using electromagnetic energy (microwave cooking). Core temperature and end point temperature are the important indicators of doneness which needs to be standardised for different types of products. After cooking, these products can also be smoked.

(5) These products may contain only those ingredients which are either standardised or permitted for use in the preparation of other standardised food under these regulations and includes but not limited to the following ingredients, namely: -

(a) Common Salt (Sodium chloride or potassium chloride), or salt substitutes (including nitrites).

(b) Carbohydrate and protein binders such as, -

(i) milk powders, caseinate, whey powder, egg protein, vegetable protein products;

(ii) meal, flour, fibres or starch prepared from grain, or potato or sweet potato;

(iii) bread, biscuit or bakery products;

(c) Sucrose (sugar and brown cane sugar), dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup);

(d) Fats;

- (e) Vegetables;
 - (f) Cereal and cereal products;
 - (g) Herbs, Spices, seasonings and condiments;
 - (h) Water soluble hydrolyzed protein.
- (6) The product may contain Food Additives as per Appendix A.
- (7) The product shall conform to the microbiological requirement given in Appendix B.
- (8) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 18 °C.

6. Fresh or Chilled or Frozen Rabbit meat. -

- (1) The standards specified in this clause shall apply to fresh or chilled or frozen rabbit meat which includes raw rabbit whole carcasses, pieces, cuts or edible offals that have been packed in any suitable packaging material.
- (2) Rabbit meat means the edible portion of domestic rabbits (*Oryctolagus cuniculus*).
- (3) Fresh rabbit meat means rabbit meat that has not been treated in any way to ensure its preservation.
- (4) Chilled rabbit meat means fresh rabbit meat subjected to chilling in such a way that the product is maintained at temperature of 0 - 7 °C.
- (5) Frozen rabbit meat means chilled rabbit meat subjected to freezing in such a way that the product is maintained at temperature of -18 °C or below.
- (6) Rabbit meat edible offal means edible by-products derived from slaughtered rabbit which includes brain, liver, gut, paunches and lungs.
- (7) Rabbit meat may be categorised in to following five types, namely: -
- (a) Fresh or Chilled or Frozen carcasses;
 - (b) Fresh or Chilled or Frozen cuts, which may be of the following sub-types, namely: -

- (i) Fore legs;
- (ii) Ribs;
- (iii) Loin;
- (iv) Hind legs;
- (c) Fresh or Chilled or Frozen Edible Offals

(8) Final product shall have moisture content between 72.5 % to 75.0 %, protein content between 20.0 % to 23.0 % and fat content between 1.0 % to 6.0 %.

(9) Rabbit meat shall be stored at $4\pm 1^{\circ}\text{C}$ for short term storage and $-18\pm 1^{\circ}\text{C}$ for long term storage. The chilled material shall be consumed within 2 to 4 days under normal refrigeration conditions of storage. Frozen meat shall be consumed within 10 months.

(10) The product shall conform to the microbiological requirement given in Appendix B.]

⁵⁷[7. FRESH OR CHILLED OR FROZEN PORK OR PIG MEAT:

(1) The standards specified in this clause shall apply to fresh or chilled or frozen pork including raw pork, whole carcasses, pieces, cuts or edible offal that have been packed in any suitable packaging material.

(2) For the purposes of this clause,-

- (a) “pork” means the edible portion of domestic pigs;
- (b) “fresh pork” means pork that has not been treated in any manner to ensure its preservation;
- (c) “chilled pork” means fresh pork subjected to chilling in such a manner that the product is maintained at a temperature between 0°C to 4°C ;
- (d) “frozen pork” means chilled pork subjected to freezing in appropriate equipment in such a manner that the product is maintained at a temperature of -18°C or lower;
- (e) “pork edible offal” means edible by-products derived from slaughtered pig which includes brain, liver, gut, paunches, tripe, lungs, and other edible parts;

(3) The pork may be categorized into the following three types, namely: -

- (a) fresh or chilled or frozen carcasses or carcass halves or carcass quarters;
- (b) fresh or chilled or frozen cuts; bone-in or bone-less, true to its type;
- (c) fresh or chilled or frozen edible offals.

(4) Boneless meat shall have moisture content between 70 % to 72%, protein content between 20 % to 22 % and fat content between 5 % to 6 %.

(5) Pork must be stored at 4 °C for short term storage and at -18 °C or below for long term storage.

(6) The chilled pork shall be consumed within two to four days under normal chilling conditions of storage and frozen pork shall be consumed within ten months.

8. FRESH OR CHILLED OR FROZEN BEEF:

(1) The standards specified in this clause shall apply to fresh or chilled or frozen beef including raw beef whole carcasses, pieces, cuts or edible offal that have been packed in any suitable packaging material.

(2) For the purposes of this clause, -

- (a) “beef” means the edible portion of bovine animals including buffaloes, ⁸²[Mithun (*Bos frontalis*)];
- (b) “fresh beef” means bovine meat that has not been treated in any way to ensure its preservation;
- (c) “chilled beef” means fresh bovine meat subjected to chilling in such a way that the product attains a temperature of 0°C to 4°C;
- (d) “frozen beef” means chilled bovine meat subjected to freezing in an appropriate equipment in such a way that the product attains a temperature of -18 °C or lower;
- (e) “beef edible offal” means edible by-products derived from slaughtered bovine animals which include brain, liver, gut, paunches, tripe, lungs.

(3) Beef shall be of following three types, namely:-

- (a) fresh or chilled or frozen carcasses or carcass halves or carcass quarters;

- (b) fresh or chilled or frozen cuts; bone-in or bone-less, true to its type;
- (c) fresh or chilled or frozen edible offals.

(4) Boneless meat shall have moisture content between 68 % to 77 %, protein content between 17.5% to 23.5 % and fat content between 8 to 12 %. For buffalo meat, the fat content shall be ranging from 1% to 3 % ⁸²[and for Mithun meat, the fat content shall be ranging from 0.7 to 1.5 %]

(5) Beef shall be stored at 4 °C for short term storage and at -18 °C or below for long term storage.

(6) The chilled beef shall be consumed within two to four days under normal chilling conditions of storage and frozen beef shall be consumed within twelve months.

9. FRESH OR CHILLED OR FROZEN CHEVON OR GOAT MEAT:

(1) The standard specified in this clause shall apply to fresh or chilled or frozen chevon including goat whole carcasses, pieces, cuts or edible offal that have been packed in any suitable packaging material.

(2) For the purposes of this clause,-

- (a) “chevon” means the edible portion of domestic goats;
- (b) “fresh chevon” means goat meat that has not been treated in any way to ensure its preservation;
- (c) “chilled chevon” means fresh goat meat subjected to chilling in such a way that the product attains a temperature of 0°C to 4 °C;
- (d) “frozen chevon” means chilled goat meat subjected to freezing in an appropriate equipment in such a way that the product attains a temperature of -18° C or lower;
- (e) “chevon edible offal” means edible by products derived from slaughtered goat which includes brain, liver, gut, paunches, tripe, lungs and other edible parts.

(3) Chevon shall be of following three types, namely:-

- (a) fresh or chilled or frozen carcasses or carcass halves or carcass quarters;

(b) fresh or chilled or frozen cuts; bone-in or bone-less, true to its type;

(c) fresh or chilled or frozen edible offals.

(4) Boneless meat shall have moisture content between 74 % to 76 %, protein content between 20 % to 22 % and fat content between 2% to 4 %.

(5) Chevon shall be stored at 4 °C for short term storage and at -18 °C or below for long term storage.

(6) The chilled chevon should be consumed within two to four days under normal chilling conditions of storage and frozen chevon shall be consumed within twelve months.

10. FRESH OR CHILLED OR FROZEN MUTTON OR SHEEP MEAT:

(1) The standards specified in this clause shall apply to fresh or chilled or frozen mutton including sheep whole carcasses, pieces, cuts or edible offal that have been packed in any suitable packaging material.

(2) For the purpose of this clause,-

(a) “mutton” means the edible portion of domestic sheep;

(b) “fresh mutton” means sheep meat that has not been treated in any way to ensure its preservation;

(c) “chilled mutton” means fresh sheep meat subjected to chilling in such a way that the product attains a temperature of 0°C to 4 °C;

(d) “frozen mutton” means chilled sheep meat subjected to freezing in an appropriate equipment in such a way that the product attains a temperature of -18° C or lower;

(e) “mutton edible offal” means edible by products derived from slaughtered sheep which includes brain, liver, gut, paunches, tripe, lungs and other edible parts.

(3) Mutton shall be of following three types:

(a) fresh or chilled or frozen carcasses or carcass halves or carcass quarters;

(b) fresh or chilled or frozen cuts; bone-in or bone-less, true to its type;

- (c) fresh or chilled or frozen edible offals.
- (4) Boneless meat shall have moisture content between 68% to 72 %, protein content between 20 % to 22 % and fat content between 4% to 10 %.
- (5) Mutton shall be stored at 4°C for short term storage and at -18°C or below for long term storage.
- (6) The chilled mutton shall be consumed within two to four days under normal chilling conditions of storage and frozen mutton shall be consumed within twelve months.

11. FRESH OR CHILLED OR FROZEN POULTRY MEAT:

- (1) The standards specified in this clause shall apply to Fresh or Chilled or Frozen Poultry Meat including poultry whole carcasses, pieces, cuts or edible offal that have been packed in any suitable packaging material.
- (2) For the purpose of this clause, -
 - (a) “poultry meat” means the edible portion of poultry birds (chicken, duck, turkey, geese, guinea fowl, Japanese quail);
 - (b) “fresh poultry meat” means poultry meat that has not been treated in any way to ensure its preservation;
 - (c) “chilled poultry meat” means fresh poultry meat subjected to chilling in such a way that the product attains a temperature of 0°C to 4 °C;
 - (d) “frozen poultry meat” means chilled poultry meat subjected to freezing in appropriate equipment in such a way that the product attains a temperature of -18° C or lower;
 - (e) “poultry edible offal” means edible by products derived from slaughtered poultry birds which includes gizzard, liver and heart.
- (3) Dressed chicken shall be of the following three types, namely: -
 - (a) fresh or chilled or frozen carcasses
 - (b) fresh or chilled or frozen cuts; bone-in or bone-less, true to its type;
 - (c) fresh or chilled or frozen edible offals.

(4) Boneless meat shall have moisture content between 60% to 74.86 %, protein content between 19.50% to 23.20 % and fat content between 3.50% to 18 %.

(5) Poultry meat shall be stored at 4 °C for short term storage and at -18 °C or below for long term storage.

(6) The chilled poultry meat shall be consumed within two to four days under normal chilling conditions of storage and frozen poultry meat shall be consumed within twelve months.

Note: ⁷⁷[All the products listed in regulation 2.5.2 shall comply with following requirements:]

(a) Notifications or advisories issued under the Drugs and Cosmetics Rules, 1945 as well as by the Department of Animal Husbandry, Dairying and Fisheries concerning use in or consumption of veterinary drugs (antibiotics and growth promoters) by food producing animals or poultry birds must be complied with by the producers or marketers of meat and poultry products.

(b) Use of genetically modified techniques are prohibited for production of meat of animals or poultry birds.

⁷⁷[(c) Milk and meat producing animals except poultry, pig and fish shall not be fed with feed containing meat or bone meal including internal organs, blood meal and tissues of bovine or porcine origin materials except milk and milk products. Commercial feeds shall comply with the relevant BIS standards, as may be specified by the Food Authority from time to time, and carry BIS certification mark on the label of the product.]

(d) Production or slaughtering or processing of animals for production of meat of porcine origin in the same production facilities where animals of bovine or ovine or caprine origin are produced or slaughtered or processed is prohibited.

(e) Where eligible meat products are intended to be imported, there should be appropriate inspection and certification procedures in place to ensure all the above compliances before grant of market access.]

⁶⁵[12. MARINATED MEAT PRODUCTS. -

(1) The standards specified in this clause shall apply to marinated meat products which have been packed in any suitable packing material. This category describes several processing steps (e.g., curing or salting, injection, massaging or tumbling, coating fixation by frying or heating, cooking, smoking) that preserve and extend

the shelf life of the meat and poultry products in addition to improving the colour, tenderness, yield and functionality of the product.

(2) Marinade means a mixture of non-meat ingredients such as salt, phosphates, acids, tenderisers, sugar, seasoning and flavouring agents, in the form of liquid solution or powder that is applied to uncooked meat for marination.

(3) Marinated Meat means the meat mixed with the marinade for suitable time period base on the method of marination in order to improve colour, flavor, yield, tenderness and other functional properties of meat.

(4) Marination means the process of applying an aqueous solution or powder composed of ingredients such as salt, phosphates, acids, tenderisers, sugar, seasoning and flavourings to meat products.

(5) Marination shall be done by applying marinade, aqueous solution or powder to bone-in cuts or boneless meat by soaking, blending, tumbling or massaging or mechanical injection for suitable time period base on the method of marination.

(6) These products may also contain those ingredients which are either standardised or permitted for use in the preparation of other standardised food under these regulations and includes but not limited to the following ingredients, namely:-

- (a) Potassium chloride, Phosphates, Nitrites;
- (b) Organic acids (acetic, lactic and citric acid), Wine, beer, fruits or fruit juice, curd, buttermilk, salsa and soy sauce;
- (c) Binders: hydrocolloids, gelatin, soy and milk proteins and modified food starches;
- (d) Sugar, sucrose (Sugar & Brown cane sugar), dextrose (glucose), lactose, maltose, syrup (including corn syrup), honey, treacle or molasses;
- (e) Herbs, Spices, seasonings and condiments;
- (f) Ascorbates, Monosodium glutamate;
- (g) Xanthan gum and Guar gum.

(7) The product may contain Food Additives as per Appendix A.

(8) The product shall conform to the microbiological requirement given in Appendix B.

(9) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 18 °C.

13. FERMENTED MEAT PRODUCTS

(1) The standards specified in this clause shall apply to fermented meat products which have been packed in any suitable packing material. Fermentation is a preservation method caused by microorganisms which lowers pH and water activity resulting in unique and distinctive properties.

(2) Fermented meat product means the meat product produced by action of selected fermenting microorganisms such as lactic acid bacteria or yeast, or both, in the presence of salt by the process of fermentation, ripening and drying. It may contain non-meat ingredients such as sugar, spices, seasonings and condiments.

(3) Starter culture means the culture of microorganisms which are used for initiating fermentation in meat product.

(4) Fermented meat products are produced by application of pretested microbial starter culture, with or without use of optional ingredients. Meat can also be fermented using back slopping without using starter cultures. Mixed meat is allowed to ripen or ferment in ripening chamber. Fermentation reduces pH to a level of 4.5 to 5.5 due to acidulation produced by microbial activity and reduces water activity due to presence of salt and drying.

(5) These products may also contain those ingredients which are either standardized or permitted for use in the preparation of other standardized food under these regulations and includes but not limited to the following ingredients, namely:-

(a) Curing ingredients consisting of Sodium chloride, Nitrites and Phosphates;

(b) Carbohydrate and protein binders such as,-

(i) milk powders, caseinate, whey powder, egg protein, vegetable protein products;

(ii) meal, flour, fibres or starch prepared from grain, or potato or sweet potato;

(iii) bread, biscuit or bakery products;

(iv) cereal products;

(c) Herbs, spices, seasonings and condiments; vinegar;

(d) Water soluble hydrolysed protein.

(6) The product may contain Food Additives as per Appendix A.

(7) The product shall conform to the microbiological requirement given in Appendix B.

(8) The product can be in chilled or frozen form. In chilled form product shall be stored and transported at or below 4 °C and in frozen form it shall be stored and transported at or below minus 18 °C.]

⁷²[14. ANIMAL CASINGS

(1) The standard specified in this clause shall apply to “Animal casings” which are soft cylindrical containers used for preparation of certain meat products such as sausages.

(2) Animal casings are soft cylindrical containers obtained from large and small intestines, oesophagus and urinary bladder of slaughtered food animals.

(3) The casings shall be dried or wet salted and are calibrated by measuring the diameter in case of wet salted casings and measuring half circumference in case of dried casings.

(4) The product shall be free from holes, blisters, lacerations, nodules, cicatrices, domestics, black nodes, slime, mucus, dung, salt burns, rust, moulds or fungus infestation, signs of putrefaction, rancidity or sour (acidic) smell and parasitic infestation.

(5) for the purpose of this clause, -

(a) Cicatrix — Scar of healed-up wound;

(b) Domestic — Small grease spot in the casing;

(c) Kink — Twisted loop in the casing;

(d) Nodule — Small rounded structure;

(e) Black Node — Black node usually caused by the residue of the ingesta or slime left behind in the casing;

(f) Rust — Black spots caused by putrefaction due to bacterial or fungal action;

(g) Salt Burn — Areas of discolouration generally caused by: (a) the entry of air-into tin containers in which the casings are packed, and/or (b) by the use of poor quality salt.

(6) Large and small intestines, oesophagus and urinary bladder shall be separated from adhering tissues and the contents should be stripped off by uniform gentle

pressing either mechanically or manually. This step is followed by washing, salting and/or drying and sorting.

(7) The products may contain Food Additives permitted in Appendix A.

(8) The products shall conform to the microbiological requirement given in Appendix B.]

⁵⁷[2.5.3 Egg and Egg Products:

1. Fresh Eggs:

(1) Fresh eggs means eggs which have not been washed or dry-cleaned and which are collected at least once weekly and shall be packed and graded not later than the first working day after arrival at the packing station.

(2) The standard specified in this clause shall be applicable to eggs in shell other than broken, incubated or cooked eggs, laid by poultry species or birds meant for direct human consumption or for the preparation of egg products

(3) Eggs shall have clean and sound shell and free from cracks, leaks and fecal contamination.

(4) ⁸¹[omission] requirements of major chemical constituents in the whole egg contents of various poultry species:

Chemical Constituents	Chicken	Turkey	Guinea Fowl	Quail	Duck	Goose
Water (%)	72.8 -75.6	71.6-75.7	71.3-74.1	73.1-76.4	68.2-71.4	68.9-72.3
Proteins (%)	12.8 - 13.4	12.6-13.6	12.8-14.2	12.5-13.4	13.1-14.2	13.4-14.3
Fats (%)	10.5 - 11.8	10.8-12.6	11.2-12.8	10.6-11.7	13.8-15.0	12.4-13.6
Carbohydrates	0.3 – 1.0	0.6-0.8	0.7-0.9	0.8-1.0	1.1-1.3	1.1-1.3
Ash (%)	0.8 – 1.0	0.7-0.9	⁸¹ [0.7 to 1.17]	1.0-1.2	0.9-1.0	1.0-1.4.]

⁸²[(5) Egg stored at ambient temperature (30.0 ±5.0 °C) shall be consumed within 2 weeks from the date of its laying and five weeks from the date of its laying when stored at refrigeration temperature (2.0 to 8.0 °C).]

⁷²[2. Frozen Egg Products. - (1) The standard specified in this clause shall apply to frozen egg products designated as “Frozen egg white or albumen”, “frozen egg yolk” and “frozen whole egg” prepared from hens’ (*Gallus gallus*) eggs packaged in any suitable packaging material.

(2) for the purpose of this clause, -

(a) Frozen egg product means the whole egg, egg yolk, or white which is pasteurized and frozen;

(b) Whole egg means the homogeneous product obtained from the complete contents of broken out hens eggs-in-shell;

(c) Egg yolk means the homogeneous product produced from the separation of the yolk of broken out hens -eggs-in-shell;

(d) Egg albumen means the homogeneous product obtained from the separation of the white of broken out hens eggs-in-shell.

(3) Shell eggs are washed, rinsed, sanitized, and candled, then broken, monitored for quality and imperfections, and frozen egg products are prepared by freezing either albumen, yolk or whole egg.

(4) Albumen and yolk alone and whole egg shall be processed strained, homogenized, desugarized, pasteurized (61 to 63 degree C for 5 minutes), frozen and maintained in the frozen condition (-23.3° to -40°C).

(5) Minimum requirements of major chemical constituents of the frozen egg products:-

Table

Composition	Frozen egg white	Frozen egg yolk	Frozen whole egg
Min solids matter content (%)	10.5	40.0	22.0
Min fat content (%)	0.05	25.0	9.8
Min protein content (%)	10.0	15.0	10.5
Extraneous matter	No particles over 1 mm in 100 g and should not exceed 100 mg/kg	No particles over 1 mm in 100 g and should not exceed 100 mg/kg	No particles over 1 mm in 100 g and should not exceed 100 mg/kg
Min. concentration of hydrogen ions (pH)	8.5	5.9	7.0

Max. beta-hydroxybutyric acid (mg/kg)	10	10	10
Max lactic acid (mg/kg)	1,000	1,000	1,000
Max succinic acid (mg/kg)	25	25	25

(6) The products may contain Food Additives permitted in Appendix A.

(7) The products shall conform to the microbiological requirement given in Appendix B.

3. Egg powder

(1) The standard specified in this clause apply to 'Egg powder' obtained under hygienic conditions from the liquid contents of sound, wholesome, hens' (*Gallus gallus*) eggs by suitable drying. The product so obtained shall retain the original properties of fresh eggs, like solubility of protein, aerating capacity, binding power and palatability.

(2) For the purpose of this clause,-

(a) Whole Egg powder: Product prepared from suitable drying of whole egg liquid with maximum permissible moisture content of 2.0 % and free from any extraneous material and off odour;

(b) Egg Yolk Powder: Product prepared from suitable drying of egg yolk with maximum permissible moisture content of 2.0 % and free from any extraneous material and off odour;

(c) Egg White Powder: Product prepared from suitable drying of egg white with maximum permissible moisture content of 2.0 % and free from any extraneous material and off odour.

(3) The eggs, before breaking, shall be properly washed, dried and cooled followed by breaking, inspection and collection in sterilized containers. Then liquid egg shall be homogenized, filtered, pasteurized, desugarized and re-pasteurized.

(4) Minimum requirements of major chemical constituents in the egg powder:-

Table

Composition	Dried egg white	Dried egg yolk	Dried whole egg
Min total solids (%)	91.5	95.0	95.0

Min Total lipid content (%)	-	61.6	41.2
Min protein content (%)	-	33.1	45
Min. concentration of hydrogen ions (pH)	-	3.9	4.2

(5) The products may contain Food Additives permitted in Appendix A.

(6) The products shall conform to the microbiological requirement given in Appendix B.

4. Liquid Egg Products

(1) The standard specified in this clause shall apply to egg products designated as “Liquid Egg White”, “Liquid Egg Yolk” and “Liquid Whole Egg” prepared from hens’ (*Gallus gallus*) eggs packaged in any suitable packaging material.

(2) For the purpose of this clause,-

(a) Liquid egg product means the whole egg, egg yolk /or egg white, which is pasteurized and preserved using approved preservatives e.g beta-Hydroxy Butyric acid, Lactic acid or Succinic acid.

(b) Liquid whole egg means the homogeneous product obtained from the complete contents of broken out hens eggs.

(c) Liquid Egg yolk means the homogeneous product produced from the separation of the yolk of broken out hens-eggs.

(d) Liquid Egg albumen means the homogeneous product obtained from the separation of the white of broken out hens egg.

(3) Shell eggs shall be washed, sanitized, and candled, then broken, monitored for quality and imperfections, and yolks separated from whites. Egg whites shall then be clarified, filtered, pasteurized and or addition of chemical preservatives followed by filling into containers and maintained in the liquid condition at 4°C or below for up to 7 days.

(4) Whipping agents such as triethyl citrate, Sodium Citrate, Sodium Hexametaphosphate, Tetrasodium Pyrophosphate may also be added.

(5) The products shall conform to the following compositional requirements, namely: -

Table

Composition	Liquid egg white	Liquid egg yolk	Liquid whole egg

Min solids matter content (%)	10.5	40.0	22.0
Min fat content (%)	0.05	25.0	9.8
Min protein content (%)	10.0	15.0	10.5
Extraneous matter	No particles over 1 mm in 100 g and should not exceed 100 mg/kg	No particles over 1 mm in 100 g and should not exceed 100 mg/kg	No particles over 1 mm in 100 g and should not exceed 100 mg/kg
Min. concentration of hydrogen ions (pH)	8.5	5.9	7.0
Max. beta-hydroxybutyric acid (mg/kg)	10	10	10
Max lactic acid (mg/kg)	1,000	1,000	1,000
Max succinic acid (mg/kg)	25	25	25

(6) The products may contain Food Additives permitted in Appendix A.

(7) The products shall conform to the microbiological requirement given in Appendix B.

⁸³[5. Pickled Eggs

(1) The standard specified in this clause shall apply to "Pickled eggs" which are prepared using cooked eggs with vinegar, oil and salt as a major pickling ingredient and have been packed in any suitable packing material.

(2) This category describes several treatment methods (for example hard boiling, pickling, maturation, etc.) that preserve and extend the shelf life of the hens' (*Gallus gallus*) or quail (*Coturnix coturnix japonica*) eggs.

(3) These products shall be designated with a qualifying statement which describes the true nature in such a way that it does not mislead the consumer and that it does not lead to confusion with products covered by this Standard.

(4) For the purposes of this clause, -

(a) Pickle solution means a combination of salt, water, edible oil, vinegar, spices and seasonings.

(b) Pickled eggs is the product prepared under hygienic conditions from hard-boiled, sound and wholesome eggs using pickle solution.

(5) Pickled eggs may be categorised into following two types:

(a) Vinegar-based pickled eggs.- (i) Fresh eggs shall be stored at ambient temperature for at least twenty four hours.

(ii) Eggs are simmered in water containing two per cent. salt (w/v) for ten minutes, cooled in cold water, peeled and washed.

(iii) Pickling solution shall consist of vinegar and water (50:50 v/v), eight per cent. (w/v) common salt and two per cent. (w/v) each spice mixture, garlic and ginger.

(iv) The solution shall be boiled for ten minutes and then filtered using clean muslin cloth. (v) Pickling solution shall be heated to 70 ± 2 °C and poured onto the peeled eggs.

(vi) The average proportion of peeled eggs to pickle solution shall be in the ratio of 1:1.25 (w/v).

(vii) The pickled eggs shall be aged for forty-eight hours at ambient temperature in pre-sterilized glass container.

(b) Oil-based pickled eggs.- (i) The pickle gravy shall be prepared by frying spices, condiments and common salt in edible oil in a suitable proportion.

(ii) Peeled eggs shall be fried in edible fat/oil to make their colour golden brown.

(iii) Peeled eggs, gravy and acetic acid at the rate of two per cent. to the weight of peeled eggs shall be mixed.

(iv) The proportion of eggs to gravy shall be in the ratio of 70:30 with tolerance of \pm one per cent.

(v) Pickled eggs shall be aged for forty-eight hours in pre-sterilised glass containers.

(6) Essential ingredients,-

(a) Egg: Sound and wholesome hard boiled and peeled eggs shall only be used for the production of egg pickle.

(b) Vinegar: It is an aqueous solution of acetic acid at five to eight per cent. (v/v). Distilled, white food grade vinegar shall be used.

(c) Edible oil: Only pure, wholesome and edible oil shall be used for frying of spices and condiments.

(d) Common Salt

(e) Spice mix:

(i) The spice mix shall contain spices, including but not limited to anise, chili powder, cardamom, caraway, cinnamon, clove, cumin, black pepper and turmeric.

(ii) Spices shall be clean, sound, wholesome and fit for human consumption in all respects and conform to the relevant standards.

(7) Optional ingredients,-

- (a) Water.
- (b) Permitted flavors.
- (c) Permitted coloring agents.
- (d) Permitted preservatives.

(8) The products shall conform to the compositional requirements, as specified in the Table below:-

TABLE

S. No.	Characteristics	Requirements	
		Vinegar based	Oil based
(1)	(2)	(3)	(4)
1.	Acidity as per cent. acetic acid, Minimum	0.8	0.6
2.	Sodium chloride per cent. by mass, Maximum	3.0	3.0
3.	pH of the pickling solution, Maximum	3.2	3.6

(9) The products may contain Food Additives permitted in Appendix A.

(10) The products shall conform to the microbiological requirement given in Appendix B]