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भारतीय मानक मसौदा

बूचड़खानों से प्रसंस्करण/वितरण केंद्रों तक खाद्य पशु शवों के परिवहन - रीति संहिता

Draft Indian Standard

Transportation of Food Animal Carcasses from Abattoirs to Processing/ Distribution Centers – Code of Practice

ICS 67.120.10

Slaughter House and Meat Industry
Sectional Committee, FAD 18

Last date of comments: **13 August 2024**

FOREWORD

(Formal clause will be added later)

Meat is susceptible to contamination from a wide variety of physical, chemical and microbial, hazards. Meat has a higher water activity and is an excellent source of higher quality protein and all other nutrients including micronutrients, making it an ideal environment for the growth of bacteria. This makes it imperative for the industry to limit the exposure of meat to different hazards. Meat quality is influenced by different pre-slaughter steps like live animal handling, loading, transportation, lairage and slaughter methods. Various extrinsic and intrinsic factor during carcass handling, transportation, storage and distribution will also influence the meat quality. Hence, adequate precaution should be exercised during handling and transportation of carcass and/or meat between production to consumption.

In order to address the above need, this standard has been developed to provide the necessary guidance to stakeholders involved in transportation of animal carcasses from abattoirs to processing/ distribution centers.

In reporting the result of a test made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'.

1 SCOPE

1.1 This standard prescribes requirements for transportation of food animal carcasses from abattoirs to processing/distribution centers.

1.1.1 It applies to food animal carcasses including poultry carcasses.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
IS 1982 : 2015	Ante-Mortem and Post-Mortem inspection of meat animals — Code of practice (<i>second revision</i>)
IS 2491 : 2013	Food hygiene — General principles — Code of practice (<i>third revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Abattoir - Any building, premises or place licensed as an abattoir by the local authority for the slaughter of animals for human consumption.

3.2 Carcass - The body of any slaughtered food animal after bleeding, flaying and dressing.

3.3 Poultry Carcass - That part of the body of the poultry left after it has been slaughtered, bled, defeathered and eviscerated.

3.4 Chilled Carcass – Carcass whose core temperature has been brought to + 7 °C or below.

3.5 Chilled Meat Cut - Cut of a meat whose core temperature has been brought to + 4 °C or below.

3.6 Chilled Offal - Offal whose core temperature has been brought to + 4 °C and below.

4 REQUIREMENTS FOR TRANSPORT OF CARCASSES AND MEAT

4.1 Transportation is a vital link in the farm to fork continuum and effective control measures should be in place that are essential at each point in the food distribution chain to,

- a) protect food from potential sources of contamination;
- b) protect food from damage likely to render the food unsuitable for consumption;

- c) provide an environment which effectively controls the growth of pathogenic or spoilage microorganisms and the production of toxins in food; and
- d) to ensure that the type of conveyances or containers required depends on the nature of the food and the conditions under which it has to be transported.

4.2 Transportation of carcass and offal should be done under refrigeration (0 °C to 4 °C) by truck, rail wagon, airplane, or ship.

4.3 Transportation of carcass may be done by non-refrigerated vehicle also. However, during such mode of transportation, carcasses should preferably be transported in an insulated container with food grade ice/ ice packs (gel packs)/ with any other means of refrigeration in places wherever it is not possible to provide for refrigerated transport.

4.4 Carcasses should be maintained at proper refrigeration temperature. During transportation and storage; breaking the cold chain should be avoided and special care needs to be exercised during loading and unloading of containers.

5 REQUIREMENTS OF CARCASS

5.1 All carcasses should be examined and ensured to be clean, wholesome and fit for human consumption through post-mortem inspection of carcasses as per IS 1982.

5.2 Carcasses should be free from contaminants such as blood, hair, offal, manure or vegetation.

NOTE – At the slaughterhouse, complete elimination of the above mentioned contaminants is unlikely. Therefore, meat processors or handlers should ensure that hairs/blood/fecal contaminants should be minimal before loading in to the vehicle.

5.3 Carcasses being transported should be clean and should not be contaminated before or during transport.

6 REQUIREMENTS OF TRANSPORT VEHICLES

6.1 Refrigerated transportation should be the preferred mode of transportation for carcass and offal. However, insulated transportations vehicle without refrigeration may also be used, where cooling is effected by adding dry ice.

NOTE – While this is a reasonably good alternative to the refrigerated truck it does not allow the temperature to be controlled.

6.2 Non-insulated transportations vehicle and open trucks should not be considered as suitable transport for either carcasses or meat.

6.3 If there are any unavoidable delays then ice blocks should be placed in the partly filled transportation vehicle to maintain the required temperature.

6.4 Transport vehicles should be designed and built to make locking and sealing easy with air tight doors and protection from extremes of heat, cold and pest infestation.

6.5 Vehicle design should permit effective inspection, cleaning, disinfection and temperature control.

6.6 Interior surface of the transportation vehicle should be made of impermeable, insulating, easily cleaned, durable, smooth, non-toxic, water proof and food grade material.

6.7 The carcasses should be hanged on an overhead rail with adequate space between them.

6.8 An indicator should be fitted in the vehicle/driver's cabin for continuous monitoring of temperature.

6.9 The vehicles used/meant for transportation of carcass should be used for transportation of only food commodities.

6.10 The vehicle should be cleaned and sanitized after each batch of transportation.

6.11 The vehicle, containers and equipment used for transport, should be washed and allowed to dry and food contact surfaces should be cleaned with food grade sanitizer.

6.12 The design, construction, use and maintenance of the transportation vehicle should be as per requirements given in IS 2491.

7 REQUIREMENTS FOR LOADING, AND UNLOADING OF CARCASSES

7.1 Loading and unloading areas should be cleaned, disinfected (wherever appropriate) and properly maintained to prevent any contamination.

7.2 Before loading, transport vehicle should be examined for :

- a) Insulation and holes in body if any.
- b) Residue of previous cargoes, cleaning and sanitizing compounds.
- c) Air tightness and air circulation inside; and
- d) Required temperature

7.3 The vehicle/container should be free from all the visible extraneous matter.

7.4 There should be provision of stage loads to facilitate proper storage and minimize exposure during loading and unloading.

7.5 Loading and unloading methods should prevent product contact with the floor, ground or other surfaces that may be contaminated.

7.6 Any equipment or surfaces that many come in contact with meat products should be made of non-toxic, non-corrosive materials that can be effectively cleaned.

7.7 Good personal hygiene shall be practiced by the food handlers. (*see* IS 2491)

7.8 Insulated containers with securely attached lids for smaller-sized products should be provided.

7.9 Clean, designated, shipping bags/shrouds or other suitable covers should be used for products too large to fit in insulated containers. Covers should be securely fastened during transport.

7.10 Protocols should be established to check integrity of the load during transit periodically.

7.11 Procedures to ensure safety during interim storage under unavoidable conditions should also be established.

7.12 Carcass and meat should be inspected and sorted before being accepted at any point during transportation.

7.13 Product should be moved from the loading dock into processing area or cold storage immediately to minimize product exposure to heat and contaminants.

8 OTHER REQUIREMENTS

Along with the requirements given in the standard; other applicable statutory/regulatory requirements (if any) issued time to time by concerned authorities shall be complied with.