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Plant-based Meat Products

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Preamble

This document is drafted in accordance with GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents".

This document was proposed and managed by the Chinese Institute of Food Science and Technology(CIFST).

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Plant-based Meat Products

1. Scope

This document specifies the basic requirements, technical requirements, inspection rules, judgment rules, labeling, marking, packaging, transportation and storage of plant-based meat products.

This document applies to plant-based meat products.

2. Normative references

The contents of the following documents constitute indispensable clauses of this document through normative references in the text. Among them, if a reference document indicates a date, then only the version of such document of that date applies to this document; if a reference document does not indicate a date, then the latest version (including all amendments thereof) applies to this document.

GB/T 191 Pictorial Markings for Packaging, Storage and Transportation

GB 2760 National Food Safety Standard: Food Additives Use Standard

GB 2761 National Food Safety Standard: Limits on Mycotoxins in Food

GB 2762 National Food Safety Standard: Limits on Contaminants in Food

GB 4789. 1 National Food Safety Standard: Food Microbiological Inspection: General Rules

GB 4789. 3 National Food Safety Standard: Food Microbiological Inspection: Coliform Count

GB 4789. 4 National Food Safety Standard: Food Microbiological Inspection: Salmonella Inspection

GB 4789.10 National Food Safety Standard: Food Microbiological Inspection , Staphylococcus Aureus Inspection

GB 5009.5 National Food Safety Standard: Determination of Protein in Food

GB 7718 National Food Safety Standard: General Rules for the Labeling of Prepackaged Foods

GB 14880 National Food Safety Standard: Food Nutrition Enhancer Use Standard

GB 20371 National Food Safety Standard: Vegetable Protein for Food Processing

GB 28050 National Food Safety Standard: General Rules for Nutrition Labels of Pre-packaged Food

GB 31605 National Food Safety Standard Food: Good Hygienic Practice for Cold Chain Logistics

GB 31646 National Food Safety Standard: Good Hygienic Practice for Production and Distribution of Quick Frozen Food

JJF 1070 Rules for Measurement and Inspection of Net Content of Quantitative Packaged Goods

Measures for Supervision and Administration of Measurement of Quantitative Packaged Goods

Order [2005] No. 75 of General Administration of Quality Supervision, Inspection and Quarantine

3. Terms and Definitions

The following terms and definitions apply to this document.

3.1 Plant-based meat products

Foods that are processed with plant raw materials (such as beans, grains, etc., including algae and fungi, etc.) or the processed products thereof as the source of protein and fat, and with or without other auxiliary materials and food additives (including nutritional fortifiers), having texture, flavor, shape and other characteristics similar to those of animal meat products, such as livestock, poultry and aquatic products.

3.2 Raw products

Products that have not been heated or heated to an edible level.

3.3 Cooked products

A product that has been heated and cooked to an edible level.

4. Basic requirements

4.1 Protein and fat should be derived from plant materials, and animal-derived protein and fat should not be added.

4.2 The formulation design of the final product should be based on the nutritional composition of the animal meat product it simulates. It is encouraged to enhance protein quality, increase protein content, reduce total fat and sodium content.

4.3 Food additives (including nutrient fortifiers), microorganisms and ingredients of microbial origin can be used. Except for water and edible salt, the total added amount of other non-plant ingredients or the mass fraction of the feeding amount should not exceed 10% of the total mass of the product.

5. Technical Requirements

5.1 Requirements for raw and auxiliary materials

The raw and auxiliary materials should meet the corresponding food standards or regulations. Vegetable protein should meet the requirements of GB 20371.

5.2 Sensory requirements

Sensory requirements should meet the requirements of Table 1.

Table 3 Limit on pathogenic bacteria in cooked products

Item	Sampling plan* and limit (if not specified, all expressed in /25g)				Testing method
	n	c	m	M	
Salmonella	5	0	0	-	GB 4789.4
Staphylococcus aureus	5	1	100 CFU/g	1,000 CFU/g	Method 2 of GB 4789.10
* Sampling and processing of samples shall be carried out in accordance with GB 4789.1.					

5.6.2 The limit on microorganisms in cooked products should also conform to Table 4.

Table 4 Limit on microorganisms in cooked products

Item	Sampling plan* and limit (if not specified, all expressed in CFU/g)				Testing method
	n	c	m	M	
Coliform	5	2	10	100	Plate count method in GB 4789. 3
* Sampling and processing of samples shall be carried out in accordance with GB 4789.1.					

5.7 Food additives

5.7.1 The use of food additives should meet the requirements of GB 2760.

5.7.2 The use of nutrition fortifiers should meet the requirements of GB 14880.

6. Net content

The provisions of JJF 1070 and "Measures for Supervision and Administration of Measurement of Quantitative Packaging Goods" shall be complied with.

7. Inspection rules

7.1 Group batch

Products processed with the same batch of materials, produced in the same shift, of the same variety, and the same production line belong to the same group batch.

7.2 Sampling requirements

To randomly sample the same batch of products, the sampling personnel should bring sampling tools and containers for the samples. In sampling, 4 or more than 4 individual packages should be randomly chosen from 4 different positions at the sample stack of the same batch, and the samples will be taken from them separately; the total amount of the samples should be no less than 2kg. Divide the sample into quarters and take out a part of them for inspection.

7.3 Factory inspection

7.3.1 Each batch of products shall be inspected according to the factory inspection items before they leave the factory, and can leave the factory only after passing the inspection.

7.3.2 The factory inspection items include: sensory requirements, coliforms (only for cooked products), and net content.

7.4 Type inspection

7.4.1 A type inspection shall be carried out every 6 months during normal production. A type inspection shall be carried out under any of the following circumstances:

- Appraisal for new product trial production
- Material changes in raw materials and production processes that may affect product quality;
- Significant difference between the factory inspection results and the last type inspection;
- Resumption of production after suspension of production for half a year or more.

7.4.2 The inspection items are the items specified in Chapter 5.2 to 5.7 and Chapter 6.

8. Determination rules

8.1 If all inspection items meet the requirements of this document, the product will be determined as qualified.

8.2 If one or more of the inspection items (except 5 , 6) is unqualified, a specific double sampling re-inspection shall be carried out for the same batch of products, and the re-inspection results shall prevail. If there is still one unqualified item in the re-inspection, the product will be determined as unqualified.

8.3 If one of the pathogenic bacteria index does not meet the requirements, the product will be determined as unqualified. If the coliform group does not meet the requirements, the sampling, sample processing, and inspection process should be reviewed. If the GB 4789.1 or other sampling and sample processing operating standards are not observed, sampling and inspection should be repeated; if the result is still unqualified, then the product will be determined as unqualified.

9. Labels and markings

9.1 The product label and markings shall comply with the requirements of GB 7718 and GB 28050.

9.2 The product category name should be clearly marked in the vicinity of the product name.

9.2.1 If the product category name cannot reflect the true attributes of the product or cannot clearly indicate that the product uses plant raw materials, the product should be named with modifier words that can clearly indicate that the source of the ingredients is plants or the product simulates a certain animal meat product. See Appendix A for examples.

9.2.2 If the font size and color are different, which may cause consumers to misunderstand the true nature of the food, the same font size and font color should be used.

9.3 Descriptive words related to product characteristics, flavor, texture, use, process, directions and ingredient sources can be used to name or assist in expressing the characteristics of plant-based meat products. See Appendix A for examples .

9.4 Raw products or cooked products should be labeled, and the directions should also be given.

9.5 There should be words on the product label stating that this product is distinguished from animal meat products.

9.6 The pictorial markings for the product packaging, storage and transportation shall comply with the requirements of GB/T 191.

10. Packaging, transportation and storage

10.1 The product packaging should be complete, tightly sealed, and unbroken, and the packing box should be firm, complete, with a clean appearance.

10.2 Quick-frozen food should comply with the requirements of GB 31646.

10.3 Products that require temperature control in the logistics process after leaving the factory shall comply with the requirements of GB 31605.

Appendix A

(Informative)

Plant-based Meat Product Naming and Ingredient Source Statement

A. 1 This appendix gives a naming method that can fully explain the real attribute name of plant-based meat products for reference when indicating a product's real attributes. You can directly use the names in this appendix or use the naming principles consistent with this appendix to name your products independently. When the product name is marked on the label, names such as "brand name", "newly created name", "exotic name" and "transliterated name" can be added at the same time.

A. 2 Use "Plant ××", "Plant-based ××", "Plant sourced ××", "Plant protein-based ××", and "Plant-made ××", etc. to name products.

Examples:

- Vegetable beef
- Plant-based beef
- Plant-sourced beef
- Plant protein-based beef
- Plant-made beef

A. 3 Use the simulated animal meat product's standard name or common name to name a product, and name the product by adding "plant" or similar qualifier before the name.

Examples:

- Plant burger patties
- Plant sausage
- Plant ham
- Plant steak
- Plant sausage
- Plant meat floss
- Plant barbecued pork
- Plant fish sausage
- Plant meatballs
- Plant bacon
- Plant smoked meat
- Plant minced pork

A. 4 Words such as "plant origin" and "non-animal origin" can be used to help describe the source of raw materials of a final product, and the word "vegetarian" can also be used to help explain.

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