



National Food Safety Standard of the People's Republic of China

GB XXXX-XXXX

Substitute GB2746-1999, GB19302-2003

Fermented Milk

(Draft for Comment)

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Preface

The Standard corresponds to Codex Stan 243-2003 *Codex Standard for Fermented Milk*, the Standard and Codex Stan 243-2003 are not equivalent one another in terms of consistency.

The Standard substitutes the safety indicators in the GB 19302-2003 “Hygienic Standard for Yoghurt” and the GB 2746-1999 “Yoghurt”.

Compared with the GB 19302-2003, main changes are made to the Standard as follows:

- the title of the Standard is modified to “Fermented milk”;
- the scope of application of the Standard is modified;
- the terms and definitions of the product are revised;
- the description of product texture is revised;
- index of fat in skimmed and partly skimmed products is no longer required;
- index of non-fat solids in modified yoghurt is deleted;
- index of total solid content is deleted;
- limit of fungimycin is directly quoted from GB 2761;
- limit of pollutant in product supplemented is directly quoted from GB 2762;
- representation of microorganism index is modified;
- identification of heat treated product after fermented is supplemented;

The Standard is proposed and put under centralized management by the Ministry of Health of the People’s Republic of China.

The replaced former editions are:

- GB/T 2746-1985, GB 2746-1999;
- GB 19302-2003.

Fermented Milk

1. Scope

The Standard stipulates the terms and definitions, technical requirements, food additives and nutrition fortifiers, production and processing, packing, identification, storage and transport, requirements of examination method for fermented milk.

The Standard is applicable to the production, circulation, supervision and management of fermented milk.

2. Normalized References

The clauses of the following reference are incorporated into the Standard by reference. For dated references, subsequent amendments to (exclude mistakes), or revisions of any of these publications do not apply. However, the parties who conclude an agreement according to the Standard are encouraged to discuss whether the latest edition can be used or not. For undated references, the latest edition of the normative document referred to applies.

GB 2760	Hygienic Standard for Food Additives
GB 2761	Limit of Fungimycin in Foods
GB 2762	Limit of Pollutants in Foods
GB 4789.3	Microbiological Examination in Foods – Counting for Coliform
GB 4789.4	Microbiological Examination in Foods – Salmonella
GB 4789.10	Microbiological Examination in Foods – Staphylococcus Aureus
GB 4789.15	Microbiological Examination in Foods – Fungi
GB 4789.18	Microbiological Examination in Foods – Milk and Dairy Products
GB 4789.35	Microbiological Examination in Foods – Lactobacillus in Foods
GB 5009.5	Determination of Protein in Foods
GB XXXX	Determination of Fat in Infant Foods and Dairy Products
GB XXXX	Determination of Acidity in Milk and Dairy Products
GB 7718	General Standard for Pre-packaged Foods Labels
GB 12693	Good Manufacturing Practice for Dairy Enterprises
GB 13432	General Rule for Special Prepackaged Foods Labels
GB 14880	Hygienic Standard for Nutrition Fortifiers in Foods
GB 19301	Raw Milk

3. Terminology and Definitions

The following terms and definitions are adopted in the Standard.

3.1 Yoghurt

A product made of raw cow milk and goat milk or dry milk through a procedure of pasteurization and fermentation by inoculating streptococcus thermophilus

and lactobacillus bulgaricus.

3.2 Modified yoghurt

A product made of over 80% of raw cow milk and goat milk or dry milk through the procedures of pasteurization and fermentation by inoculating streptococcus thermophilus and lactobacillus bulgaricus with or without adding food additives, nutrition fortifiers, garden stuff and cereals, etc. before or after fermented.

3.3 Fermented milk

A product made of raw cow milk and goat milk or dry milk by decreasing pH value after pasteurization and fermentation.

3.4 Modified fermented milk

A product made of 80% of raw cow milk and goat milk or dry milk by decreasing pH value after pasteurization and fermentation and inoculating streptococcus thermophilus and lactobacillus bulgaricus with or without adding food additives, nutrition fortifiers, garden stuff and cereals, etc. before or after fermented.

The products mentioned above shall contain active lactobacillus within the quality assurance period. If the fermented product is subject to heat treatment, the index of viable count is no longer required.

4. Requirements of Indices

4.1 Requirements for raw materials

4.1.1 Raw milk: be subject to GB 19301.

4.1.2 Other raw materials: be subject to relevant safety standards and provisions.

4.1.3 Microbial strain for fermentation: species of streptococcus thermophilus and lactobacillus bulgaricus, or others approved by the Health Administrative Department of the State Council.

4.2 Sensory indices

It shall conform to the provisions in Table 1.

Table 1 Sensory indices

Item	Specification	
	Yoghurt, fermented milk.	Modified yoghurt, modified fermented milk.
Color	Consistency in color, presenting in white or yellowish.	Presenting its color that the product shall originally have.
Taste and flavor	The taste and flavor that the product shall originally have.	The product has taste and flavor that shall have.
Texture	The product has its texture that shall have.	

4.3 Physicochemical indices

Physiochemical indices shall conform to the provisions in Table 2.

Table 2 Physiochemical indices

Item		Specification	
Fat ^a /(g/100g)	≥	3.1	2.5
Non-fat solids/(g/100g)	≥	8.1	—

Protein/(g/100g)	≥	2.9	2.3
Acidity/(°T)	≥	70.0	
^a Not applicable to skimmed or partly skimmed products			

4.4 Limit of pollutants

Limit of pollutants shall conform to the provisions of GB 2762.

4.5 Limit of fungimycin

Limit of fungimycin shall conform to the provisions of the GB 2761.

4.6 Index of microorganism

Index of microorganism shall conform to the provisions of Table 3.

Table 3 Index of microorganism

Item	Plan of sampling and limit
Coliform	$n=5, c=2, m=1\text{cfu/g}, M=5\text{cfu/g}$
Staphylococcus aureus	$n=5, c=0, m=0\text{cfu/25g}$
Salmonella	$n=5, c=0, m=0\text{cfu/25g}$
Yeast/(cfu/g) ≤	100
Fungi/(cfu/g) ≤	30

4.6.2 Microbial content of lactobacillus

Microbial content of lactobacillus shall conform to the requirements in Table 4.

Table 4 Microbial content of lactobacillus

Item	Specification
Microbial content of lactobacillus / (cfu/g)	1×10^6
Note 1: The microbial content of lactobacillus for heat treated products after fermented is no longer required.	

5. Food additives and nutrition fortifiers

5.1 The quality of food additives and nutrition fortifiers shall conform to the related standard and relevant regulations.

5.2 The species and application amount of food additives shall conform to GB 2760, while the nutrition fortifiers shall meet the regulations of GB 14880.

6. Production and processing

Requirement for hygiene during the production and processing shall conform to the regulations of GB 12693.

7. Package

The materials of packaging containers shall conform to relevant standards and stipulations.

8. Identification

8.1 Identification of products shall conform to the provisions of GB 7718, GB 13432 and the State's regulations.

8.2 “XXX 热处理酸乳” or “XXX 热处理发酵乳” shall be identified for heat treated yoghurt after fermented or other fermented milk.

8.3 Yoghurt fully made of dry milk shall be identified with “复原乳” or “复原奶” (“reconstituted milk”) at location adjacent to the name of the product;

Yoghurt made of raw milk added with a part of dry milk shall be identified with “含 XX%复原乳” or “含 XX%复原奶” (“XX% of reconstituted milk”) at location adjacent to the name of the product.

“XX%” designates a mass fraction of dry milk added in the full milk solid of the yoghurt.

“复原乳” with its name of product shall be identified on the same main displaying plane of packed containers; the “复原乳” for identification shall be boldly indicated with their font size no less than that of the product name and their font height no less than one fifth of the main displaying plane.

9. Storage and Transportation

9.1 Storage

The yoghurt products shall be stored at 2-10°C. The heat treated products after fermented may be kept at ambient environment. The products can not be mix stored with toxic, harmful, odorous, volatile, and corrosive substances.

9.2 Transportation

The yoghurt products shall be transported at 2-10°C, and the heat treated products after fermented shall be transported under the closed condition. It shall be kept away from direct sunlight and rain during transport. The products can not be mix transported with toxic, harmful, odorous substances or substances that may affect the product quality.

10. Method of Examination

10.1 Sensory indices

10.1.1 Color and texture: an adequate amount of sample is put in a 50mL beaker for observing its color and texture under the natural light.

10.1.2 Taste and flavor: an adequate amount of sample is put in a 50mL beaker for smelling first, followed by gargling with lukewarm water before tasting it.

10.2 Physicochemical indices

10.2.1 Fat: determined with a method specified in GB XXXX.

10.2.2 Non-fat solids:

10.2.2.1 Method I

20g of refined marine sand is put into a glass dish in a diameter of 5-7cm, dried at 95-105°C for 2h, and then cooled at a desiccator for 0.5h before weighing it, repeated drying until its weight becomes constant, then measuring 5.0mL sample to a container in a constant weight, weighing it before putting it on a water bath to evaporate it to dryness, followed by wiping out the water spot outside of the dish, and then drying at 95-105°C for 3h, cooled at a desiccator for 0.5h before weighing it and dried again at 95-105°C for 1h, followed by weighing after it cooled until the difference in mass between two weights measured is no more than 1.0mg. The content of total solids in sample is then calculated in accordance with Formula (1), while the content of non-fat solids in accordance with Formula (2):

$$X = \frac{m_1 - m_2}{m_3 - m_2} \times 100 \quad \text{..... (1)}$$

in which,

X—the content of total solids in sample, g/100g;

m_1 —the mass of dish, sand and dried sample, g;

m_2 —the mass of dish and sand, g;

m_3 —the mass of dish, sand and sample added, g..

$$X = X_1 - X_2 \quad \text{..... (2)}$$

in which,

X—the content of non-fat solids in sample, g/100g;

X_1 —the content of total solids in sample, g/100g;

X_2 —the content of fat in sample, g/100g..

Two significant figures are retained in the calculation; the absolute difference of two independently measured results under the same condition shall not exceed 5% of the arithmetic mean.

10.2.2.2 Method II

The content of total solids is calculated from the readings measured with a milk gauge and the content of fat based on Formulas (3) and (2).

$$X_3 = 0.25X_1 + 1.2X_2 + 0.14 \quad \text{..... (3)}$$

in which,

X—the content of total solids in sample, g/100g;

X_1 —the reading on the milk gauge;

X_2 —the content of fat in sample, g/100g.

When using a 20°C/4°C milk gauge, 2° must be added to the readings measured before calculating in accordance with Formula (3). The content of non-fat solids in sample is calculated in accordance with Formula (2).

10.2.3 Protein: determined as per GB 5009.5.

10.2.4 Acidity: determined as per GB XXXX.

10.3 Microorganism index

The devices and materials for examination of microorganism index, sampling plan and handling of examined samples shall be subject to GB 4789.18.

10.3.1 Coliform: examined with a direct counting method in GB 4789.3.

10.3.2 Yeast and fungi: examined in accordance with GB 4789.15.

10.3.3 Salmonella: examined in accordance with GB 4789.4.

10.3.4 Staphylococcus aureus: examined in accordance with GB 4789.10.

10.3.5 Lactobacillus: examined in accordance with GB 4789.35.