codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 5 **CX/NEA 09/5/8**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

FAO/WHO COORDINATING COMMITTEE FOR THE NEAR EAST

Fifth Session

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Project Document for a Regional Standard for Doogh

Prepared by the Islamic Republic of Iran

Doogh: General highlights

Doogh is a traditional Iranian fermented milk drink. Apart from Iran, Doogh is exported and consumed in other countries such as Afghanistan, Azerbaijan, Armenia, Iraqi, Syria, Turkey, and Balkans, and to less extent in other countries of Middle East and central Asia.

The word ‘Doogh’ has been adopted from Persian term of ‘dooshidan’ means ‘milking’. Traditionally, Doogh was referred to a product obtained from dilution of full fat yogurt after vigorous agitating in special leather bags, called ‘Mishk’. Nowadays, Doogh comprises its specific physical, chemical, physicochemical, microbiological and sensory characteristics that are characterized in Iran National Standard #2453.

In present time, Doogh is a very popular and highly consumed product in 'Iran with a considerable increasing demand for its consumption. It is now known as ‘Iran National Drink’. The annual production of plain Doogh in Iran was 14,400,000 tons in 2007. The consumption increase rate of Doogh in Iran within recent years has been found as the greatest value among all dairy products. The exported amount of this product to different countries in 2007 was 150,000 tones.

The popularity of Doogh arises from its specific organoleptic characteristics along with its health benefits as a healthy drink based on fermented milk. Some surveys show that Doogh is also potentially acceptable in European countries and a day by day increasing demand is being observed for its export and consumption.

The increased Rate of Production (annual)	Total Consumption in IRAN	Total import	Total export (2007)	Total annual production (2007)
68%	1250000 ton	0	150000 ton	1400000 ton

PROPOSED DRAFT CODEX REGIONAL STANDARD FOR DOOGH
CODEX STAN …

1. DESIGNATION OF FERMENTED MILK

Doogh or plain Doogh

2. DEPOSITING COUNTRY

Iran (country of origin), Afghanistan, Azerbaijan, Armenia, Turkey, Bulgaria, Balkans, and to lesser extent, other parts of Middle East and Caucasus

3. RAW MATERIALS

3.1 KIND OF MILK: cow's milk

3.2 AUTHORIZED ADDITIONS

3.2.1 Necessary additions

- yogurt or heat treated milk only containing milk fat
- potable water
- yogurt starter culture including Streptococcus thermophilus and Lactobacillus delbrueckii ssp.
- food grade sodium chloride

3.2.2 Optional additions

- natural or nature identical flavoring agents
- dairy ingredients such as milk proteins, varieties of milk powder, cream, butter fat, butter milk and fermented- or unfermented whey
- carbon dioxide
- fine particles of harmless dried aromatic vegetables confirmed by national legislation
- in the country of sale to the final consumer
- Single-/mixed culture of carbon dioxide-producing yeasts and/or harmless gas-producing lactic acid bacteria as well as flavor-producing starter cultures rather than yogurt starter cultures (see section 3.2.1).
- natural non-dairy components of anti-serum separation and/or thickening agents confirmed by national legislation in the country of sale to the final consumer, maximally by 10% of Doogh milk solid non-fat. In countries where no such legislation exists, the use of these components is restricted to the Codex General Standard for Food Additives (CODEX STAN 192-1995).

4. PRINCIPAL CHARACTERISTICS OF DOOGH READY FOR CONSUMPTION

4.1 APPEARANCE

4.1.1 Visual body[1]: smooth, preferably without visible clotted particles/lumps, without undesirable clotted particles after agitation, preferably without appreciable whey separation, weak stringiness/stretchability during pouring

4.1.2 Colour: uniform, from bright- to creamy white, without any unusual color

4.2 FLAVOUR: characteristic pleasant, with no off-flavour/taint

4.3 TEXTURE: clean and smooth mouthfeeling, without appreciable precipitation on tongue, low viscous, Newtonian- or non-Newtonian (pseudoplastic or pseudoplastic-thixotropic) fluid

4.4 pH: max. 4.5

[1] Visual representation of texture

4.5 Milk SOLID NON-FAT CONTENT: min. 3.2% (W/W)

4.6 FAT CONTENT: less than 50% of total milk solid non-fat (MSNF) of Doogh (salt content is not included)

4.7 SODIUM CHLORIDE CONTENT: max. 1% (W/W) and min. 0.2%

4.8 CARBON DIOXIDE CONCENTRATION: min. 0.4% (W/V)

4.9 VIABLE COUNTS OF CONTAMINATION MICROORGANISM: coliforms: max. 10 cfu/g; Esherishia coli: negative/g; sum of molds and yeasts (only for injecting carbonated Dooghs): 100 cfu/g; coagulase positive Staphylococci: negative/g.

4.10 CHEMICAL CONTAMINANTS: Doogh shall comply with the maximum limits for contaminants and the maximum residue limits for pesticides and veterinary drugs established by the Codex Alimentations Commission.

4.11 READY FOR CONSUMPTION: Immediately after cooling the finished product to the appropriate storage temperatures, as limited by the provision in section 4.12.

4.12 STORAGE ABILITY

4.12.1 Un-heat treated Doogh: shall be stored at 4-5°C maximally for 6 months from the time it is ready for consumption.

4.12.2 Heat treated Doogh: shall be kept at 8-15°C (preferably 8-10°C) maximally for 1 month from the time it is ready for consumption.

5. METHODS OF MNUFACTURE

5.1 METHOD OF ACIDIFICATION: addition of lactic acid starters

5.2 HEAT TREATMENT

5.2.1 Heat treatment of milk: Doogh milk is severely heat treated (e.g., 90°C/15 min or 95°C/5-10 min) prior to fermentation, before or after dry matter standardization.

5.2.2 Heat treatment of Doogh: in heat treated Doogh, the product is subjected to post- fermentation heat treatment in order to increase the shelf life.

5.3 FERMENTATION PROCEDURE: lactic acid fermentation with or without starter yeast fermentation

5.4 OTHER PRINCIPAL CHARACTERISTICS

5.4.1 Dry matter standardization order of Doogh milk might be done prior or subsequent to fermentation, namely, by dilution of milk or yogurt, respectively.

5.4.2 In the case of fermenting carbonated Doogh made by applying gas producing yeasts, yeast inoculation (as second inoculation) is performed before packaging. The packages would undergo the second incubation (mesophilic incubation).

5.4.3 Salt addition can be applied before or after fermentation in dry or moist salting procedure.

6. SAMPLING AND ANALYSIS

See CODEX STAN 234-1999.

7. MARKING AND LABELLING

Only fermented dairy drinks conforming with this standard may be designated ‘Doogh’or ‘plain Doogh’. It shall be labeled in conformity with the appropriate sections of Codex Standard for Fermented Milks (CODEX STAN 243-2003), Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985) and the Codex General Standard for the Use of Dairy Terms (CODEX STAN 206-1999).

Doogh not produced in the country of origin shall be marked with the name of the producing country even when sold on the home market (specifying the designation of ‘made in Iran’).

The composition of Doogh shall be declared on package in concentration along with the tolerance limits. Alco, for carbonated Doogh, the terms ‘fermenting’ or ‘injecting’ shall be applied before the word ‘carbonated’ in product designation to present the source of carbonation.

The descriptions of ‘carbonated/uncarbonated’ and/or heat treated/un-heat treated’ shall be used in conjunction with the word ‘Doogh’.

The name and address of manufacturer along with its commercial logo shall be declared on packages.

Net weight of containing Doogh in containers shall be declared on the packages.

In ‘fermenting carbonated Doogh’, the species of applied microorganisms shall be specified.

The appropriate storage conditions of packed Doogh after dispatching from plant and the date of minimum durability shall be declared in day/month/year.

The designation of ‘heat treated’ is reserved for Doogh undergone post fermentation heat treatment and shall be used in conjunction with the word ‘Doogh’.

Permitted- aromatic vegetables and/or anti-serum separation/thickening agent substances used in Doogh shall be appeared on marking. The designation of ‘heat treated’ is reserved for Doogh undergone post fermentation heat treatment and shall be used in conjunction with the word ‘Doogh’.