**FOOD STANDARDS REGULATION**

**DIVISION_____ CEREALS, PULSES, LEGUMES and DERIVED PRODUCTS and VEGETABLE PROTEINS.**

1 - **Explanation:**

For the purpose of this Division,

(i) The term” foreign matter” means any organic or inorganic matter other than the food grains or pulse referred to in the relevant paragraphs e.g husk, chaff, weeds, sand, lumps of clay and other kinds of grains or pulses.

(ii) The term “damaged grain” or “damaged seed,” means kernels, which are distinctly identified as having been visibly affected by insects, heat, water, disease or any causative agent other than those, caused by the milling process.

(iii) “Foreign odour” means odours which are foreign to the relevant food grain and which, because their presence, render the food grain or pulse unfit for their normal usage.

(iv) “Insect infestation” means the presence of insects (live or dead) and their larval stages.

2 – **General Requirements for cereals, pulses and legumes and derived products**

(i) The cereals, pulses and legumes (including split pulses) and their flours made from agricultural produce shall not contain pesticide residues in excess of the limits laid down under Regulations framed under the Food Act No. 26 of 1980.

(ii) The cereals, pulses and legumes (including split pulses) and the flours made from them shall be free from objectionable foreign odours and any added colouring matter.

(iii) The cereals, pulses, and legumes flours and derived products shall be free from insect and fungal infestation.

(iv) The cereals, pulses, legumes shall not have more than five (5) pieces of rodent hair or excreta per kilogram of the product.

(v) The flour derived from cereals, pulses and legumes shall be free from rodent hair or excreta.

(vi) The cereals, pulses and legumes (including split pulses) and the flours made from shall not have more than 30 micrograms per kilogram of mycotoxins including aflatoxin.
(vii) Uric acid in any flour shall not exceed 100 milligram per kilogram

(viii) The acid insoluble ash (siliceous matter) in cereals, pulses and legumes other than paddy shall not exceed 1.0% m/m

(ix) The acid insoluble ash (siliceous matter) for flour made from any cereal, pulse or shall not exceed 0.3% m/m

3 – Specific requirements for cereals, pulses and legumes and derived products

(1) **BARLEY** shall be the grain of *Hordeum vulgare* L

Barley shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 4.0 % m/m foreign matter
(c) more than 4.0 % m/m damaged grains

(2) **CORN (MAIZE)** shall be the whole shelled kernels of *Zea mays* L.

Corn shall not contain

(a) more than 15.0 % m/m of moisture
(b) more than 4.0 % m/m foreign matter
(c) more than 5.0 % m/m damaged grains

(3) **KURAKKAN** shall be the grain of the millet *Eleusine coracana* L. Gaertn

Kurakkan shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 4.0 % m/m foreign matter
(c) more than 4.0 % m/m damaged grains

(4) – **PADDY** shall be the whole grain in the hull of *Orixa Sativa* L.

Paddy shall not contain

(a) more than 15% m/m moisture.
(b) more than 2.0% m/m foreign matter.
(c) more 7.0% m/m damaged grain.

(5) – **RICE (POLISHED OR UNPOLISHED)** shall be the husked grains of *Orixa Sativa* L obtained from Paddy and maybe Raw or parboiled, whether polished or unpolished.
Rice shall not contain,

(a) More than 14.0% m/m moisture.
(b) More than 1.5% m/m foreign matter.
(c) More than 5.0% m/m damaged grains.
(d) More than 45.0% m/m broken grains in Raw Rice.
(e) More than 20.0% m/m broken grains in Parboiled Rice.
(f) More than 10.0% m/m other types of Rice.

6. SORGHUM shall be the whole or decorticated grains of *Sorghum bicolor* L Moench

Sorghum shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 2.0 % m/m extraneous matter

7. WHEAT shall be the grains obtained from varieties of the species *Triticum aestium* L

Wheat shall not contain,

(a) More than 14.5% m/m moisture.
(b) More than 1.5% m/m organic extraneous matter.
(c) More than 0.5% m/m inorganic extraneous matter
(d) More than 0.05% m/m ergot.

8. DURUM WHEAT shall be the grains obtained from varieties of the species *Triticum durum* Desf

Durum wheat shall not contain

(a) more than 14.5 % m/m moisture
(b) more than 1.5 % m/m organic extraneous matter
(c) more than 0.5 % m/m inorganic extraneous matter
(d) more than 0.05 % m/m ergot

9. BLACK GRAM (URD, OORID) shall be the seed of *Vigna mungo* L. Hepper Syn. *Phaseolus mungo* Linn.

Black gram shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 2.5% m/m foreign matt
(c) more than 4.0% m/m damaged seeds

Cowpea shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 1.5 % m/m foreign matter
(c) more than 4.0 % m/m damaged seeds

11. **GRAM (CHANA WHOLE, CHICK PEA)** shall be the dried grains of *Cicer arietinum* Linn

Gram shall not contain

(a) more than 16.0% m/m moisture
(b) more than 3.0% m/m foreign matter
(c) more than 5.0% m/m damaged grain

12. **GREEN GRAM** shall be the mature seed of *Vigna radiata* L., Wilezek

Green gram shall not contain

(a) more than 14.0 % m/m of moisture
(b) more than 1.5% m/m foreign matter
(c) more than 3.0 % m/m damaged seeds

13. **MASOOR (MASUR) WHOLE** shall be the grain of *Lens culinaris* Medic. Syn. *Lens esculenta* Moench

Masoor shall not contain

(a) more than 14.0% m/m moisture
(b) more than 3.0 % m/m foreign matter
(c) more than 5.0 % m/m damaged grains

14. **PEANUT (GROUNDNUT)** either in the form of pods or in the form of kernels shall be from the varieties of *Arachis hpogaea* L.

Peanut shall not contain

(a) more than 10.0 % m/m moisture for peanuts in pod and 9.0 % m/m moisture for peanut kernels
(b) more than 0.2% m/m mouldy, rancid or decayed kernels
(c) more than 0.5% m/m extraneous matter
15. **SOYBEAN** shall be the mature seed of *glycine max* L. Merr

Soybean shall not contain

(a) more than 14.0 % m/m moisture  
(b) more than 1.0% m/m foreign matter  
(c) more than 3.0 % m/m damaged seeds.

16. **BLACK GRAM DHAL (URD DHAL, OORID DHAL)** shall be the split seeds or split decorticated seed of *Vigna mungo* L. Hepper Syn. *Phaseolus mungo* Linn

Black gram dhal shall not contain

(a) more than 14.9% m/m moisture  
(b) more than 1.5% m/m foreign matter  
(c) more than 2.0% m/m damaged seeds

17. **CHANA DHAL** shall be split grains of *Cicer arietinum* Linn

Chana dhal shall not contain

(a) more than 14.0 % m/m moisture  
(b) more than 1.5% m/m foreign matter  
(c) more than 2.0% m/m damaged grains

18. **COWPEA DHAL** shall be the split decorticated seed of *Vigna sinensis* L. Savi Syn *Vigna unguiculata* L Walp. *Vigna sesquipedalis* Frufw

Cowpea dhal shall not contain

(a) more than 14.0 %m/m moisture  
(b) more than 1.5 % m/m foreign matter  
(c) more than 2.0 % m/m damaged seeds.

19. **MASOOR DHAL  (MASUR DHAL)** shall be the split decorticated seed of *Lens culinaris* Medic. Syn *Lens esculenta* Moench

Masoor Dhal shall not contain

(a) more than 14.0% m/m moisture  
(b) more than 1.5% m/m foreign matter  
(c) more than 2.0% m/m damaged seeds.

20. **TOOR DHAL (RED GRAM)** shall be the split decorticated seed of *Cajanus cajan* Mill sp
Toor dhal shall not contain

(a) more than 14.0% m/m moisture
(b) more than 1.5% m/m foreign matter
(c) more than 2.0% m/m damaged seeds

21. ANY OTHER FOODGRAINS not specified in these Regulations shall not contain

(a) more than 14.0% m/m moisture
(b) more than 1.5% m/m foreign matter
(c) more than 2.0% m/m damaged grains

22. BLACK GRAM FLOUR (URD FLOUR, OORID FLOUR) shall be the product obtained by grinding the decorticated seed of Vigna mungo L. Hepper. Syn Phaseolus mungo Linn

Black gram flour shall not contain

(a) more than 14.0% m/m moisture
(b) less than 6.0% m/m protein (Nx6.25) on dry basis
(c) extraneous flour or starch or any other extraneous matter

23. CASSAVA FLOUR (MANIHOT FLOUR) shall be the product derived from clean and sound tubers of Manihot esculanta Crantz. Syn Manihot utilissma

Cassava flour shall not contain

(a) more than 13.0% m/m moisture
(b) more than 1.5% m/m total ash on dry basis
(c) more than 10mg/kg of hydrogen cyanide
(d) extraneous flour, starch or extraneous matter

24. CORN (MAIZE) FLOUR shall be the product obtained by grinding the cereal Zea Mays L

Corn flour shall not contain

(a) more than 14.0% m/m moisture
(b) less than 6.0% m/m protein (Nx5.7) on dry basis
(c) any extraneous flour or starch or any other extraneous matter

25. KURAKKAN FLOUR shall be the product obtained by grinding the millet Eleusine coracana L. Gaertn

Kurakkan flour shall not contain
(a) more than 14.0% m/m moisture
(b) less than 6.0% m/m protein (Nx5.7) on dry basis
(c) extraneous flour or starch or any other extraneous matter
(d) less than 2.3% m/m ash

26. RICE FLOUR OR GROUND RICE shall be the product obtained by grinding cleaned rice, that is milled grain of *Oryza sativa* L

Rice flour shall not contain

(a) more than 13.0% m/m moisture
(b) extraneous flour or starch or other extraneous matter.

27. WHOLE WHEAT FLOUR (ATTA FLOUR) shall be the clean sound product obtained by grinding and bolting cleaned cereal *Triticum aestivum* L or *Triticum compactum* Host and shall contain all the constituents of wheat.

Whole wheat flour shall not contain

(a) more than 14.0% m/m moisture
(b) more than 2.0% m/m total ash on dry basis
(c) less than 2.0% m/m crude fibre calculated on dry basis.
(d) extraneous flour or starch or any other extraneous matter

28. WHEAT FLOUR shall be the cleaned sound product obtained by grinding and bolting clean cereal *Triticum aestivum* L or *Triticum compactum* Host

Wheat flour shall not contain

(a) more than 14.0% m/m moisture
(b) more than 0.6% m/m total ash on dry basis
(c) less than 9.0% m/m protein (Nx5.7) on dry basis
(d) less than 8.0% m/m gluten on dry basis
(e) extraneous flour or starch or any extraneous matter

Wheat flour may contain the following additives with the corresponding maximum levels

(a) L ascorbic acid and its sodium and potassium salts: 3000mg/kg
(b) Monocalcium phosphate: 2500mg/kg
(c) Lecithin: 2000mg/kg
(d) Chlorine in high ratio cakes: 2000mg/kg
(e) Chlorine dioxide for yeast raised bakery products: 30m/kg
(f) Benzoyl Peroxide: 60 mg/kg
(g) Azodicarbonamide for leavened bread: 45 mg/kg
29. **DURUM WHEAT FLOUR** shall be the product prepared from the grain of durum wheat (*Triticum aestivum* Desf) by grinding or milling processes in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree by fineness.

Durum wheat flour shall not contain

(a) more than 14.5 % m/m moisture  
(b) more than 1.25% m/m of total ash on dry basis  
(c) more than 11.0 % m/m protein (N x 5.7) on dry basis

30. **SEMOLINA (RULANG - FARINA)** shall be the product prepared from cleaned cereal of *Triticum durum* Deaf or *Triticum aestivum* L by the process of grinding and bolting so that it passes through a No. 200 sieve and not more than 3 percent passes through a No. 100 sieve.

Semolina shall not contain

(a) more than 14.5 % m/m moisture  
(b) more than 1.0 % m/m total ash on dry basis  
(c) more than 0.1 % m/m acid insoluble ash on dry basis  
(d) any extraneous flour or starch or any other extraneous matter.

31. **ARROWROOT STARCH (ARROWROOT FLOUR, ARROWROOT POWDER)** shall be the separated and purified starch from the rhizomes of the plant known as *Maranta arundinacea* or from *Curcuma augustifolia*

Arrowroot starch shall not contain

(a) more than 14.0% m/m moisture  
(b) more than 0.3 % m/m acid insoluble ash on dry basis  
(c) extraneous starch or flour or any other extraneous matter

32. **MANIOC SAGO** shall be the product obtained from the starch of *Manihot esculenta* Crantz Syn. *Manihot utilissima*

Manioc sago shall not contain

(a) more than 12.0% m/m moisture  
(b) more than 0.4% m/m total ash on dry basis  
(c) more than 0.1% m/m acid insoluble ash on dry basis  
(d) extraneous starch or any other extraneous matter including natural colour.

33. **CUSTARD POWDER** shall be the product prepared from starch and may contain permitted flavouring and permitted colouring matter, milk solids and egg solids
Custard powder shall not contain

(a) more than 12.5 % m/m moisture
(b) more than 0.5 % m/m total ash on dry basis
(c) more than 0.1 % m/m acid insoluble ash on dry basis.

34. **CORN FLAKES** shall be the product obtained from dehulled, degermed and cooked corn (*Zea mays* L.) by flaking, partially drying and toasting

Corn flakes shall not contain

(a) more than 7.5 % m/m moisture
(b) more than 1.0 % m/m total ash
(c) more than 0.1 % m/m acid insoluble ash on dry basis

35. **ROLLED OATS** (Quick Cooking Oats) shall be the product obtained from sound hulled oats (*Avena saiva*)

Rolled oats shall not contain

(a) more than 10.0 % m/m of moisture
(b) more than 2.0 % m/m total ash on dry basis
(c) more than 0.1 % m/m acid insoluble ash on dry basis
(d) more than 2.0 % m/m crude fibre on dry basis
(e) less than 1.8 % m/m nitrogen on dry basis
(f) added colours, and flavouring agents.

36. **RICE FLAKES (HABAL)** shall be the product obtained from cooked rice (*Oryza sativa* L) by flaking, partially drying and toasting

Rice flakes shall not contain

(a) more than 14.0 % m/m moisture
(b) more than 0.75 % m/m crude fibre on dry basis
(c) more than 1.0 % m/m total ash on dry basis
(d) more than 0.05 % m/m acid insoluble ash on dry basis

36. **BREAD** shall be the product prepared from a dough made from wheat flour and water with or without other ingredients, which has been fermented by yeast or otherwise leavened and subsequently baked. It may also contain sugar, milk and milk products (condensed milk, whole or skimmed milk powder), edible starches (tapioca, corn, rice and soyabean flours and/or potato starch) singly or in combination, gluten, malt products, edible oils and fats, vitamin B and nicotinic acid or nicotinamide, fungal enzymes, lysine hydrochloric acid, calcium phosphate, calcium carbonate, lecithin, glycerine, glycercyl monostearate and diacetyl tartaric acid, permitted improving agents, permitted mould and rope inhibitors and permitted bleaching agents
Read shall not contain

(a) more than 40.0% m/m moisture
(b) more than 0.1% m/m acid insoluble ash on dry basis
(c) more than 0.25 % m/m crude fibre on dry basis
(d) any fungal and insect infestation, rodent contamination and any extraneous matter.

37. WHOLE MEAL BREAD (BROWN BREAD) shall be the bread obtained by baking a yeast leavened dough prepared from whole meal wheat flour and water or a mixture of whole meal flour and wheat flour containing not less than 60% of the whole meal wheat flour and water

Brown bread shall not contain

(a) more than 40.0 % m/m moisture
(b) more than 0.1% m/m acid insoluble ash on dry basis
(c) less than 0.6% m/m crude fibre on dry basis

38. BUNS may contain all the food additives used in the bread. In addition it may contain dried fruits and/ or glazes cherries/raisins.

Buns shall fulfil the requirements specified in the bread standards.

39. BISCUITS, CRACKERS AND COOKIES shall be the product obtained from the dough containing wheat flour, fat/shortening leavening agent and water with or without other edible flours and starches, milk and milk product, sugars, nuts, fruit product, spices, permitted flavouring agents, permitted colouring matter, emulsifying agents, enzymes and gluton conditioners, coffee powder, cocoa powder, chocolates, edible vegetable or vegetable products, soya bean milk, salt (Sodium Chloride), tataric acid , citric acid or any acid reacting component as a supplement for the levening agent.

Biscuits shall have a texture characteristic of fresh, well baked biscuits of different types. It shall be free from dampness by the absorption of moisture.

Biscuits, the coating and the filling, shall have a pleasant flavour. It shall be free from rancidity and any objectionable odour and taste.

In the case of filled biscuits, the filling shall cover not less than 75% of the internal surface area of the product.

Biscuits labelled as “Butter biscuits” or those in which the butter is highlighted, shall contain not less than 7.0% m/m milk fat. If the total fat content of the product exceeds 14.0%, 50% of the total fat should be milk fat.
Biscuits labelled as “Milk Biscuits” or those, in which milk is highlighted, shall contain not less than 4.0% m/m milk solids calculated on dry basis.

Biscuits shall not contain,

(a) More than 6.0% moisture (in the case of cookies maximum of 8.0% m/m may be allowed).
(b) More than 0.05% m/m acid insoluble ash on dry basis.
(c) More than 1.0% m/m acidity of extracted fat expressed as oleic acid.

40. EXTRUDED SNACKS shall be the products obtained from the process of extrusion cooking of starch base such as de-husked and de-germed serials and millets, wheat flour, corn meal, rice meal, edible tubers, de-husked pulses. It may contain the optional ingredients such as edible vegetables oils and fat, salt, spices, spice extract, condimans, cheese powder, dextrines, sugar, permitted colouring and flavouring matters, citric acid, tataric acid, permitted emulsifying and stabilising agent.

Extruded snacks shall not contain
(a) More than 6.0% m/m moisture.
(b) More than 25.0% m/m fat.
(c) More than 0.1% m/m acid insoluble ash on dry basis.
(d) Peroxide value more than 10 milli equivalence Oxygen-kg of extracted oil.

41. PAPADAM shall be the product obtained from black gram, wheat flour, edible vegetable oils and sodium bi-carbonate. It may contain spices, gingelly seeds and permitted colouring matter.

Papadam shall not contain,

(a) More than 12.0% m/m moisture
(b) More than 12.0% m/m total ash on dry basis.
(c) More than 0.5% m/m acid insoluble ash on dry basis.
(d) More than 3.0% m/m fat
(e) More than 1.0% m/m of crude fibre on dry basis.
(f) A pH of the water extract more than 8.0

42. PASTA PRODUCTS (MACARONI, SPAGHETTI, VERMICELLI, NOODLES) shall be the products obtained by drying formed units of dough made from wheat flour, with or without the addition of ingredients like kurakkan flour, soya flour, manioc flour, milk powder, egg solids, spices, vitamins and minerals. They are food items made from a dough principally of wheat flour and water. They may be presented in the form of:

(i) Noodles – solid rods of minimum length 200 mm and diameter of between 1.0 mm and 2.0 mm
   - ribbons of minimum length 200 mm, width 1.5 mm to 2.5 mm and thickness 1.0mm to 2.0 mm
(ii) Macaroni – tubes of minimum length 250 mm and diameter of 2.5 mm to 7.0 mm could also be in the form of various but defined forms such as shell, stars and squares etc.

(iii) Spaghetti – solid rods of minimum length 250 mm and minimum diameter 1.6 mm

(iv) Vermicelli – solid rods of minimum length 250 mm and diameter of between 0.5 mm and 1.25 mm.

Noodles may be made from rice flour with or without the addition of other edible flours. The rice flour content shall be not be less than 80%, if the noodles is to be labelled as rice flour noodles.

Eggs may be incorporated in noodles and the egg content shall be not less than 3.0% m/m egg solids if the noodle is to be labelled as egg noodles.

Pasta products shall not contain

(a) more than 12.0% m/m moisture
(b) more than 12% m/m total solids in gruel except for rice noodles where this value shall not be more than 6% m/m
(c) more than 1.0% m/m total ash on dry basis. If salt is added this value shall not be more than 1.5%.
(d) more than 0.05% m/m acid insoluble ash on dry basis
(e) more than 0.8% m/m free fatty acid expressed as oleic acid of the extracted oil.
(f) Peroxide value more than 10 milliequivalents oxygen per kilogram of extracted oil
(g) Any extraneous flour or starch or any other extraneous matter.

43. SOY PROTEIN PRODUCTS shall be the products obtained by the reduction or removal from soybeans of certain of the major non protein constituents such as water, oil and carbohydrates.

(h) Soy protein products shall not contain

(a) more than 10.0% m/m moisture
(b) more than 8.0% m/m total ash on dry basis.

(ii) Crude protein content shall be for the soy products shall be

(a) Soy protein flour – not less than 50% m/m and not more than 65% m/m
(b) Soy protein concentrate – not less than 65% m/m and not more than 90% m/m
(c) Soy protein isolate – more than 90% m/m

Protein value is obtained by multiplying the percentage by the factor 6.25 (N% x 6.25) on dry basis.
(iii) **LABELLING**

(a) Soy protein products shall be labelled in accordance with the Food (Labelling and Advertising) Regulations

(b) The name of the product to be declared on the label shall be:

“Soy protein flour” or “soya protein flour” when the protein content is more than 59% and less than 65%

“Soy protein concentrate” or “soya protein concentrate” when the protein content is more than 65% and less than 90%

“Soy protein isolate” or “soya protein isolate” or “isolated soy protein” or “isolated soya protein” when the protein content is 90% or more.

(c) The name may include a term which accurately describes the physical form of the product e.g. “granules” or “bits”

(d) When the soy protein product is subjected to a texturization process, the name of the product may include as appropriate qualifying term such as “textured” or “structured”

**44. INSTANT (X) MIX** shall be mixtures of cereal flours, and/or legumes flours, salt (sodium chloride) and a leavening agent to be used in preparing traditional foods such as hoppers, thosai, string hoppers. They may contain acidulants, buffering salts, flavour enhancers, releasing agents and sugars

Instant mixes shall not contain

(a) more than 12.0 % m/m moisture
(b) more than 3.5 % m/m total ash on dry basis
(c) more than 0.3% m/m acid insoluble ash on dry basis
(d) a peroxide value of more than 10 milliequivalent oxygen per kilogram of extracted oil

**45. CAKES** shall be the baked product obtained from a batter containing essentially wheat flour, sugar and sugar products, shortening, baking powder, eggs and other ingredients. The other ingredients may be dried or preserved fruits, cocoa powder, edible starches, semolina, soya flour, milk and milk products, spices, herbs, desiccated coconut, sorbitol, aerating agents, flavouring essences, potable water, permitted emulsifiers and stabilisers, whipping agents, permitted colouring matters and permitted preservatives.

(i) Cakes shall have the flavour, aroma and colour characteristics of the typical well baked cake and shall be free from any evidence of rancidity or other objectionable tastes or odours

(ii) Cakes shall be free from extraneous matter and insects and/or mould infestation
(iii) In fruit cake, the fruits and nuts content shall not be less than 7% m/m of the batter.

46. **BAKING POWDER** shall be the product obtained from the combination of sodium bicarbonate and acidic component incorporated in an edible starch. It shall be capable of yielding carbon dioxide under conditions of baking.

The acidic components may be

(a) tartaric acid or its salts or both
(b) acid salts of phosphoric acid- sodium, potassium or calcium
(c) any combination of (a) and (b)

Baking powder shall yield

(a) not less than 8.0% m/m available carbon dioxide
(b) not more than 1.5% m/m residual carbon dioxide