



The Soybean Processors Association of India

About SOPA Knowledge Center Statistics Arbitration Member Area What's New Market Update





SOY CONCLAVE

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Presentations of International Soy Conclave

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Food Regulations for Packaged Soy food and Beverages in Light of FSSAI

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Soybean

The **soybean**, **soy bean**, or **soya bean** (*Glycine max*) is a species of legume native to East Asia, widely grown for its edible bean, which has numerous uses.

Traditional unfermented food uses of soybeans include soy milk, from which tofu and tofu skin are made. Fermented soy foods include soy sauce, fermented bean paste, nattō, and tempeh. Fat-free (defatted) soybean meal is a significant and cheap source of protein for animal feeds and many packaged meals. For example, soybean products, such as textured vegetable protein (TVP), are ingredients in many meat and dairy substitutes.

Soy beans contain significant amounts of phytic acid, dietary minerals and B vitamins. Soy vegetable oil, used in food and industrial applications, is another product of processing the soybean crop. Soybean is the most important protein source for feed farm animals (that in turn yields animal protein for human consumption).

Its 10000 year old crop

Reference to India

An impressive number of foods - flour and flour products, candy, milks, oils, meat and margarine - in which it is used suggests a steady increase in its dietary use because of its high protein, fat and vitamin contents."

Mahatma Gandhi
Harijan, 19-10-1935



Soybean is most nutritious food and India should adopt it

Dr Pandurang Khankhoje
 1911 - Maxico



Birth of Modern Regulations

Tort of Negligence -1932

- *Donoghue vs Stevenson* - 1923
- A fight of brave lady for 9 years against present system to evolve new regulations
- **Mother of all Control Orders & Consumer Protection Law**



Basis of Modern Regulations

Risk base approach.

Risk analysis

- Risk analysis is powerful tool for carrying out science based analysis and for reaching sound, consistent solution for food safety problem
- Risk is basically combination of two concepts
 - *Probability – How likely to happen -*
 - *Severity – How bad would it be if this did happen -*

Food Legislation – Milestones in India

1899 : States' / Provinces' own food laws with difference
in standards for the same commodity --
Conflicts in inter provincial trade.

1943 : Central Advisory Board for Central Legislation that brings in
uniformity throughout the country.

1954 : Central Legislation –
Prevention of Food Adulteration Act, 1954.
Rules and Standards framed under the Act 1955.

2006: FOOD SAFETY & STANDARDS ACT – 2006.

2011 : FSSRR 2011

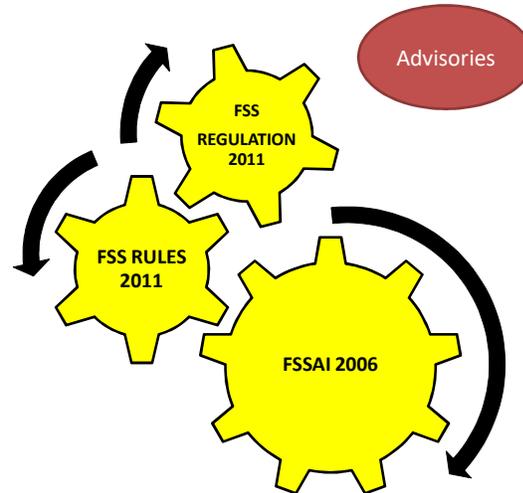
2012 – Import Regulation

2016- Nutraceutical Regulations /Product Recall

2019/20 – Claim regulations / Labelling



FSSAI Legislative Frame



Front of the Pack Labelling

- The consumer organizations were in support of warning labels and Industry expressed support towards monochrome GDA
- FSSAI has done the survey with IIM A
- **IIM Ahmedabad has given Health star rating as preferred choice of consumer**
- **Now the matter is under discussion**



FSSAI has proposed **INDIAN NUTRITION RATING** for foods
 ½ Star – **Least Healthy** 5 Star – **Healthiest**

New Labelling Regulations

2. New “e-commerce” labelling:

Impact: All mandatory labelling under these regulations are now required on e-commerce except online details

3. New “Front of Pack” definition

Impact: Veg / Non-veg logo and Name of the food (as per FSSAI) required of FOP

Traffic Light labelling (subject to future regulations)

4. “Use by/ Expiry” **replaces** “Best Before”

Impact: All food packs need to mention Expiry / Use by date and to be placed with manufacturing date



New Labelling Regulations

5. Changes in Nutritional Information– new insertions are

- Added Sugars, Cholesterol, Sodium mandatory (additionally MUFA, PUFA Omega- 3 and Omega 6 fatty acids for edible oils)
- Per serve % RDA for Energy, total fat, Saturated fat, trans fat, added sugars and sodium
- Serving size and number of serving per pack mandatory
- Tolerance limit to declared quantity is required as **maximum minus 10%**

6. Name and complete address for

- **Brand owner mandatory**
 - **Manufacturer voluntary**
- * FSSAI license number mandatory for all

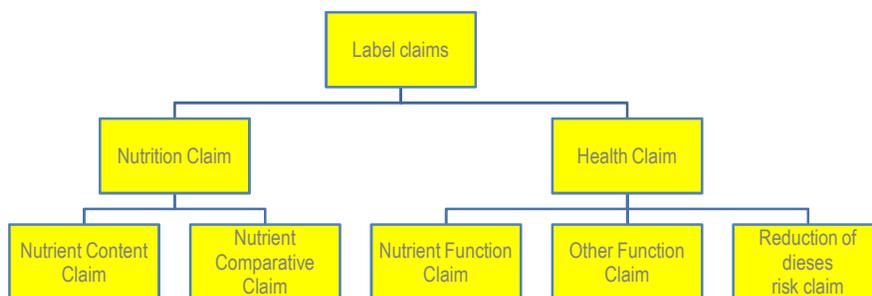
New Labelling Regulations

7. Allergen Labelling Mandatory for the first time

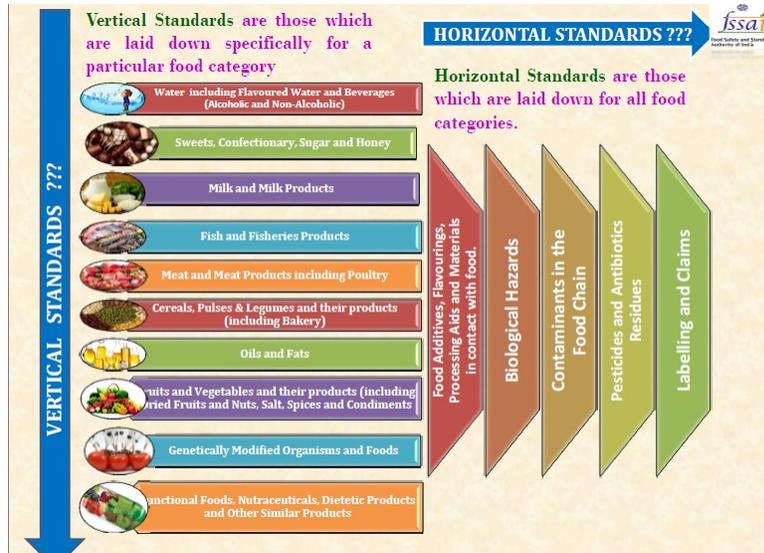


8. Stringent norms for Minimum Font Size for letter and numerals as per principal display panel –

Claim Classification



Packaging & Labeling is Horizontal Standard



18 Categories

- | | |
|--|--|
| 1.0 Dairy products and analogues | 2.0 Fats and oils, and fat emulsions |
| 3.0 Edible ices, including sorbet | 4.0 Fruits and vegetables |
| 5.0 Confectionery | 7.0 Bakery products |
| 6.0 Cereals and cereal products | 9.0 Fish and fish products |
| 8.0 Meat and meat products | 11.0 Sweeteners |
| 10.0 Eggs and egg products | 13.0 Foodstuffs intended for particular nutritional uses |
| 12.0 Salts, spices, soups, sauces, salads and protein products | 15.0 Ready-to-eat Savories |
| 14.0 Beverages | 17.0 Others |
| 16.0 Prepared Foods | |
| 99.0 Substances added to food | |

Soy Standard foods

Infant Foods

3. Milk-cereal based complementary food milk-cereal based complementary food commonly called as weaning food or supplementary food means foods based on milk, cereal and/or legumes (pulses), **soyabean**, millets, nuts and edible oil seeds, processed to low moisture content and so fragmented as to permit dilution with water, milk or other suitable medium.

Milk Cereal Base

Milk cereal based complementary food are obtained from milk, variety of cereals, pulses, **soyabean**, millets, nuts and edible oil seeds after processing. It may contain edible vegetable oils, milk solid, various carbohydrates such as sucrose, dextrose, dextrans/ maltodextrin, maltose and lactose, calcium salts; phosphates and citrates and other nutritionally significant minerals and vitamins. It shall contain a minimum of 10 per cent milk protein by weight of the product. It shall also contain minimum 5 per cent milk fat by weight. It shall not contain hydrogenated fats containing trans-fatty acids. It may contain fungal alfa amylase upto a maximum extent of 0.025 per cent. by weight, fruits and vegetables, egg or egg products. It may also include amino acids such as lysine, methionine, taurine, carnitine etc.

Soyabean- Oil

14. **Soyabean oil** means the oil expressed from clean and sound soyabeans (Soja max) from which the major portion of the gums naturally present have been removed by hydration and mechanical or physical separation. It shall be clear, free from rancidity, suspended or other foreign matter, separated water added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer

reading at 40 oC 58.5 to 68.0

Or

Refractive Index at 40oC 1.4649-1.4710

Saponification value 189 to 195

Iodine value 120 to 141

Unsaponifiable matter Not more than 1.5 per cent

Acid value Not more than 2.50

Phosphorus Not more than 0.02

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.0 ppm.

Weaning food

Processed cereal based complementary food commonly called as weaning food or supplementary food means foods based on cereal and/or legumes (pulses), **soyabean**, millets, nuts and edible oil seeds, processed to low moisture content and so fragmented as to permit dilution with water, milk or other suitable medium.

Soybean Sauce

2.3.29 Soyabean Sauce:

1. Soyabean Sauce means the product obtained from wholesome soyabeans, by fermenting the soyabean paste in which trypsin inhibitors have been inactivated & blending with salt, nutritive sweeteners. It may contain spices and condiments and other ingredients appropriate to the product preserved by using permitted preservative.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- | | | |
|------|---|----------------------------|
| (i) | Total Soluble solids (m/m)
Salt free basis | Not less than 25.0 percent |
| (ii) | Acidity as acetic acid | Not less than 0.6 percents |

Protein Rich (Paushtik) Atta

3. **Protein rich (paushtik) atta** means the product obtained by mixing wheat atta with groundnut flour "or soya flour", or a combination of both". flour up to an extent of 10.0 per cent. Soya flour which is a solvent extracted soya flour used in such mix shall conform to the standards of Soya flour laid down under 2.4.13 (1). It shall be free from insect or fungus infestation, odour and rancid taste. It shall not contain added flavouring and colouring agents or any other extraneous matter. It shall conform to the following standards:—

Moisture Not more than 14.0 per cent

Total ash Not more than 2.75 per cent on dry basis.

Ash insoluble in dilute HCl Not more than 0.1 percent on dry basis.

Total Protein (N x 6.25) Not less than 12.5 percent on dry basis

MACARONI PRODUCTS

2.4.10 MACARONI PRODUCTS:

1. ²⁶[**PASTA PRODUCTS:** means the product obtained from one or a combination of ingredients including suji , maida , rice flour, groundnut flour, tapioca flour, edible soy flour or flour of any other cereal referred to in sub-regulation 2.4 by kneading the dough and extending it or by any other process. It may contain one or more of the following ingredients either singly or in combination:

milk powder, fruit and vegetables and products thereof or their extracts; edible common salt, nutritive sweeteners, meat and products thereof; fish and products thereof; eggs and products thereof; spices, condiments and herbs including their extracts; vitamins and minerals; edible fats and oils; yeast extract, yeast and product thereof; hydrolysed plant protein and soy sauce powder. It may contain food additives specified in Appendix A appended to these regulations. It shall be free from dirt, insect's larvae and impurities or any other extraneous matter.

SOLVENT EXTRACT SOYA FLOUR

2.4.13 SOLVENT EXTRACTED FLOURS:

1. **SOLVENT EXTRACT SOYA FLOUR** means the product obtained from clean, sound healthy soyabeans by a process of cracking, dehulling, solvent extraction with food grade hexane and grinding. It shall be in the form of coarse or fine powder or grits, white to creamy white in colour of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from any added colour and flavour. It shall conform to the following standards, namely:—

- | | | |
|-----|-----------------------------|--|
| (a) | Moisture | Not more than 9.0 per cent by weight |
| (b) | Total ash | Not more than 7.2 per cent by weight on dry basis |
| (c) | Ash insoluble in dilute HCl | Not more than 0.4 per cent by weight on dry basis. |
| (d) | Protein (Nx6.25) | Not less than 48 per cent by weight on dry basis. |
| (e) | Crude fibre | Not more than 4.2 per cent by weight on dry basis. |
| (f) | Fat | Not more than 1.5 per cent by weight on dry basis |
| (g) | Total bacterial count | Not more than 50,000 per gm. |
| (h) | Coliform bacteria | Not more than 10 per gm. |
| (i) | Salmonella bacteria | Nil in 25 gm |
| (j) | Hexane (Food grade) | Not more than 10.00 ppm |

Bread

2. **BREAD** whether sold as white bread or wheat bread or fancy or fruity bread or bun or masala bread or milk bread or of any other name, shall mean the product prepared from a mixture of wheat atta, maida, water, salt, yeast or other fermentive medium containing one or more of the following ingredients, namely:—

Condensed milk, milk powder (whole or skimmed), whey, curd, gluten, sugar, gur or jaggery, khandsari, honey, liquid glucose, malt products, edible starches and flour, edible groundnut flour, edible soya flour, protein concentrates and isolates, vanaspati, margarine or refined edible oil of suitable type or butter or ghee or their mixture, albumin, lime water, lysine, vitamins, spices and condiments or their extracts, fruit and fruit product (Candied and crystallized or glazed), nuts, nut products , oligofructose (max 15%) and vinegar:

SEASONING

³²2.9.31 SEASONING

1. Description: (a) Seasoning is intended to enhance flavour.

(b) It may contain ingredients such as spices, condiments and herbs including their extracts, salt, fruits and vegetables or their products or extracts, dry fruits, nuts and raisins or their products, edible starches, yeast and its product including yeast extract, soya and its products, hydrolyzed protein or their products, meat, poultry ,marine, aquatic and their products, edible vegetable oils and fats, cereal and cereal products, milk and milk products, nutritive sweeteners or any other suitable ingredient whose standards are prescribed in Food Safety and Standards(Food Product Standards and Food Additives) Regulations, 2011

Soybean Sauce

4.2.2.3 Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera) and seaweeds in vinegar, oil, brine, or soybean sauce

Products prepared by treating raw vegetables with salt solution excluding fermented soybean products. Fermented vegetables, which are a type of pickled product, are classified in 4.2.2.7. Fermented soybean products are classified in 6.8.6, 6.8.7, 12.9.1, 12.9.2.1 and 12.9.2.3 such as pickled cabbage, pickled cucumber, olives, pickled onions, mushrooms in oil, marinated artichoke hearts, achars etc. Other examples include pickled ginger, pickled garlic, and chilli pickles etc.

6.2 Flours and starches (including soybean powder)

The basic milled products of cereal grains, roots, tubers, pulses, pith or softy core of palm tree or legumes sold as such or used as ingredients (e.g. in baked goods).

Soybean Flour

6.2.1 Flour

Flour is produced from the milling of grain, cereals and tubers (e.g. cassava) and seeds, pith or soft core of palm tree. Includes flour pastes for bread and flour confectionery, flour for bread, pastries, noodles and pasta, and flour mixes (physical mixtures of flours from different cereal or grain sources, which are different from mixes for bakery goods (dry mixes containing flour and other ingredients, categories 7.1.6 (mixes for ordinary bakery wares) and 7.2.3 (mixes for fine bakery wares) such as Atta, besan, suji, durum wheat flour, self-rising flour, enriched flour, instantized flour, corn flour, corn meal, kuttu-ka-atta, singhade-ka-atta, roasted soybean flour, konjac flour, and maida (refined wheat flour) and sago flour

Soybean Products

- 6.8 Soybean products (excluding soybean-based seasonings and condiments of food category 12.9)
- 6.8.1 Soybean-based beverages
- 6.8.2 Soybean-based beverage film
- 6.8.3 Soybean curd (tofu)
- 6.8.4 Semi-dehydrated soybean curd
 - 6.8.4.1 Thick gravy-stewed semi-dehydrated soybean curd
 - 6.8.4.2 Deep fried semi-dehydrated soybean curd
 - 6.8.4.3 Semi-dehydrated soybean curd, other than food categories 6.8.4.1 and 6.8.4.2
- 6.8.5 Dehydrated soybean curd
- 6.8.6 Fermented soybeans
- 6.8.7 Fermented soybean curd
- 6.8.8 Other soybean protein products

Soy Products

6.8 Soybean products (excluding soybean-based seasonings, and condiments of food category 12.9)

Includes dried, cooked, fried or fermented soybean products, and soybean curd products.

6.8.1 Soybean-based beverages

Products prepared from dried soybeans that are soaked in water, pureed, boiled and strained, or prepared from soybean flour, soybean concentrate, or soybean isolate. Also includes soybean products, such as soybean-based beverage powder

Soybean Products

6.8.2 Soybean-based beverage film

Film formed on the surface of boiling soybean-based beverage that is dried. It may be deep-fried or softened in water prior to use in soups or poached food.

6.8.3 Soybean curd (tofu)

Soybean curd is prepared from dried soybeans that are soaked in water, pureed, and strained to produce soybean-based beverages, which is then made into a curd with a coagulant, and placed in a mould. Soybean curds may be of a variety of textures (e.g. soft, semi-firm, firm).

6.8.4 Semi-dehydrated soybean curd

Soybean curd that has been pressed while being moulded into blocks so that some moisture has been removed, but so that it is not completely dried (see food category 6.8.5). Semi-dehydrated soybean curd typically contains 62% water, and has a chewy texture.

6.8.4.1 Thick gravy-stewed semi-dehydrated soybean curd

Partially dehydrated soybean curd that is cooked (stewed) with a thick sauce (e.g. miso sauce). The partially dehydrated soybean curd typically absorbs the sauce, and so regains its original texture.

Soybean Products

6.8.4.2 Deep fried semi-dehydrated soybean curd

Partially dehydrated soybean curd that is deep-fried. It may be consumed as such, or cooked (e.g. stewed in sauce) after frying.

6.8.4.3 Semi-dehydrated soybean curd, other than food categories 6.8.4.1 and 6.8.4.2

Partially dehydrated soybean curd prepared other than by stewing in thick (e.g. miso) sauce or by deep-frying. Includes grilled products and mashed products that may be combined with other ingredients (e.g. to make a patty or a loaf).

6.8.5 Dehydrated soybean curd

Soybean curd from which all moisture has been removed through the process of freezing, aging, and dehydrating. It may be reconstituted with water or sauce for consumption, or is used directly in prepared dishes. It may also be deep-fried or simmered in sauce.

6.8.6 Fermented soybeans

The product is prepared from soybeans that have been steamed and fermented with certain fungi or bacteria (starter). The soft, whole beans have a distinctive aroma and taste. It includes products such as Kinema (Darjeeling hills and Sikkim), Turangbai (Meghalaya), Bekang (Mizoram), Peruyyan (Arunachal Pradesh), Hawaijar (Manipur), and Aakhuni (Nagaland) and other like Natto, and Tempe etc.

Soybean Products

6.8.8 Other soybean protein products

Other products from soybeans composed mainly of soybean protein such as extruded, textured, concentrated, and isolated soybean protein.

Soybean Products

9.3.3 Salmon substitutes, caviar, and other fish roe products

The term “caviar” refers only to the roe of the sturgeon species. Caviar substitutes are made of roe of various sea and freshwater fish (e.g. cod and herring) that are salted, spiced, dyed and may be treated with a preservative such as salted salmon roe, processed, salted salmon roe, cod roe, salted cod roe and lumpfish caviar.

Occasionally, roe may be pasteurized. In this case, it is included in food category 9.4, since it is a fully preserved product. Roe products that are frozen, cooked or smoked are included in category 9.2.1, 9.2.4.1, and 9.2.5, respectively; fresh fish roe is found in category 9.1.1, 9.3.4. Semi-preserved fish and fish products, including molluscs, crustaceans, and echinoderms (e.g. fish paste), excluding products of food categories 9.3.1 – 9.3.3 such as fish or crustacean pates and traditional Oriental fish paste. The latter is produced from fresh fish or the residue from fish sauce production, which is combined with other ingredients such as wheat flour, rice or soybeans. The product may be further fermented. Cooked fish or crustacean pastes (surimi-like products) are found in 9.2.4.1 and 9.2.4.2, respectively.

Soybean Products

- 12.9 Soybean-based seasonings and condiments
 - 12.9.1 Fermented soybean paste
 - 12.9.2 Soybean sauce
 - 12.9.2.1 Fermented soybean sauce
 - 12.9.2.2 Non-fermented soybean sauce
 - 12.9.2.3 Other soybean sauces
- 12.10 Protein products other than from soybeans

Soybean Products

12.0 Salts, spices, soups, sauces, salads, protein products

This is a broad category that includes substances added to food to enhance its aroma and taste (12.1 – salt and salt substitutes; 12.2 – herbs, spices, seasonings and condiments (e.g. seasoning for instant noodles); 12.3 – vinegars; and 12.4 - mustards), certain prepared foods (12.5 – soups and broths; 12.6 – sauces and like products; and 12.7 – salads (e.g. macaroni salad, potato salad) and sandwich spreads, excluding cocoa and nut-based spreads of food categories 4.2.2.5 and 5.1.3)), and products composed primarily of protein that are derived from soybeans or from other sources (e.g. milk, cereal, or vegetables) (12.9 – soybean based seasonings and condiments; and 12.10 – protein products other than from soybeans).

Soybean Products

12.6.4 Clear sauces

Includes thin, non-emulsified clear sauces that may be water-based. These sauces may be used as condiments or ingredients rather than as finished gravy such as soy sauce and fish sauce.

12.9 Soybean-based seasonings and condiments

Includes products that are derived from soybeans and other ingredients intended for use as seasonings and condiments, such as fermented soybean paste and soybean sauces.

12.9.1 Fermented soybean paste

The product is made of soybeans, salt, water and other ingredients, using the process of fermentation (e.g. miso).

12.9.2 Soybean sauce

A liquid seasoning obtained by fermentation of soybeans, non-fermentation (e.g. hydrolysis) of soybeans, or by hydrolysis of vegetable protein.

Soybean Products

12.9.2.1 Fermented soybean sauce

A clear, non-emulsified sauce made of soybeans, cereal, salt and water by the fermentation process.

12.9.2.2 Non-fermented soybean sauces

Non-fermented soybean sauce, which is also known as non-brewed soybean sauce, may be produced from vegetable proteins, such as defatted soybeans that are acid-hydrolyzed (e.g. with hydrochloric acid), neutralized (e.g. with sodium carbonate), and filtered.

12.9.2.3 Other soybean sauce

Non-emulsified sauce made from fermented soybean sauce and/or non-fermented soybean sauce with or without sugar, with or without caramelization process.

12.10 Protein products other than from soybeans

Includes cereal or legume or vegetable protein products such as wheat gluten, vegetable protein analogues, and proteinaceous meat or milk and fish substitutes. Includes their isolates, concentrates and hydrolyses, single cell protein including Spirulina.

Soybean Products

15.1 Snacks - potato, cereal, flour or starch based (from roots and tubers, pulses and legumes)

Includes all savoury snacks, with or without added flavourings, but excludes unsweetened crackers (category 7.1.2) such as potato chips, popcorn, pretzels, rice crackers, flavoured crackers (e.g. cheese-flavoured crackers), bhujia (namkeen; snack made of a mixture of flours, maize, potatoes, salt, dried fruit, peanuts, spices, colours, flavours, and antioxidants), and papads (prepared from soaked rice flour or from black gram or cow pea flour, mixed with salt and spices, and formed into balls or flat cakes), khari, kara, murukku, namakpara, chiwda, palakayalu, ribbon or thattupakoda, dalmoth or mixtures, soya nuts, nimki, fali (e.g. cholafali), other fried or baked snacks or savouries, uppuseedai, appam, bhel-mix, sev, gathiya, shankarpali, farsan, kurmura, murmura, papadi, crisps, chakli, etc. Also includes sweet snacks e.g. chikki, gajak, murrunda, gudchana, sugar coated dals and other sweet dal snacks (dals coated with jaggery, sugar, honey and other ingredients).

Proprietary food

Non standard soy food can be prepared under proprietary food

Conclusion

- Soy food has huge demand in market
- Indian food regulatory covers most of the soy food
- Regulatory changes are dynamic
- Consumers are empowered through social media
- Compliance is hygiene
- Cost of regulatory (non compliance) will be high



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