



International Life Sciences Institute
SOUTHEAST ASIA REGION

ILSI Japan/MAFF Project
Investigation of Commodity Food Standards
and Analytical Methods in Asia

**Malaysia, Singapore &
Philippines**

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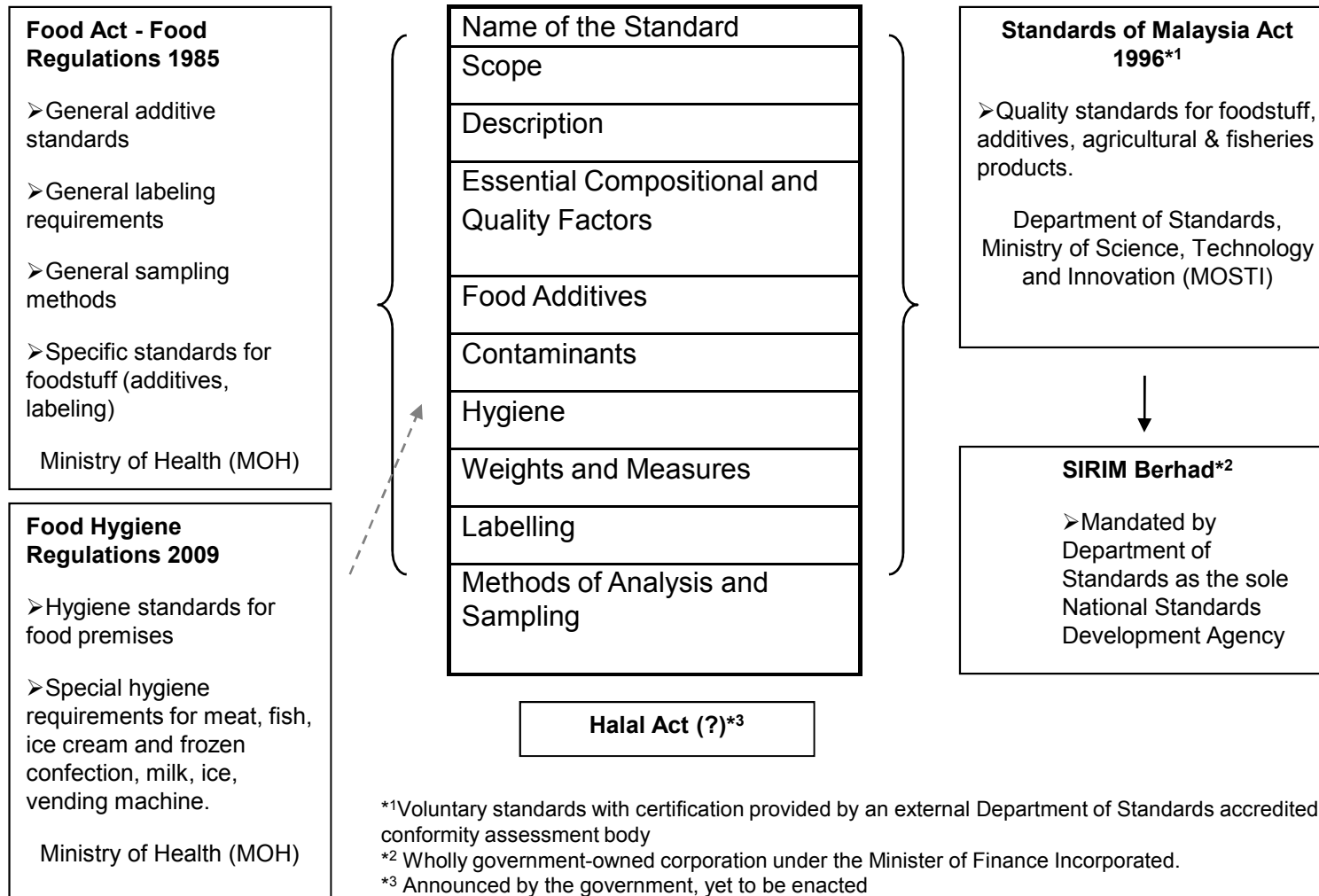
International Life Sciences Institute
SOUTHEAST ASIA REGION

**ILSI Japan/MAFF Project
Investigation of Commodity Food
Standards and Analytical Methods
in Asia**

Malaysia



Malaysian Commodity Standards





Malaysia: Food Laws

- Food Act 1983
 - General food law in Malaysia
 - Allows MOH to make further subsidiary regulations
- Food Regulation 1985
 - Compilation of subsidiary regulations that cover
 - Sampling procedure
 - Food labeling
 - Food additive and nutrient supplements
 - Food packaging
 - Contaminants
 - Technical standards for food commodities in food additive usage and labeling
- Food Hygiene Regulations
 - Hygiene requirements for handling, preparing, packaging, serving, storing of foods
- In the near future: Halal Act???
 - Impact on production, regulation and trade of food commodities



Malaysia: Food Safety Administration

- Food Safety & Quality Division (FSQD) under MOH is the main food safety authority
 - Covers processed foods, agricultural products, meat, dairy & fisheries products
- MoA is not involved in regulating food safety and standards
 - Only upstream, i.e. pesticide use
 - Animal health by DVS



Malaysia: Malaysian Standards (MS)

- Issued under the **Standard of Malaysia Act 1996** by the Department of Standards under **Ministry of Science, Technology and Innovation**
 - Voluntary quality standards known as Malaysian Standards (MS)
- Dept. of Standards has assigned SIRIM Berhad to draft MS Standards
 - Wholly government-owned privatized corporation
 - Sole National Standards Development Agency
- Agriculture: 581 standards
- Food and food products: 63 standards



Malaysia: MS Standards

- MS Standards in principle are voluntary
 - Can become mandatory if referenced by law
 - For example, Food Regulations 1985 re: labeling of organic food requires compliance to MS 1529: The production, processing, labeling and marketing of organically produced foods
- Certification provided by 3rd party CABs – mainly by SIRIM Quality Assurance Services (QAS)
 - A subsidiary of SIRIM Berhad



Case study 1: Instant Noodles

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 526:2009	MS 1112:1988
Name of the Standard	Pasta	Instant Wheat Noodles	Instant Beehoon
Scope	Noodles, beehoon, laksa, macaroni and spaghetti	Fried noodles, non-fried noodles	Instant beehoon (instant rice vermicelli)
Description	Any product that is obtained by extruding or moulding units of dough.	A product prepared from wheat as the main ingredient and other flour/starches, with or without the addition of other ingredients and packed with suitable packaging material. It may be treated by alkaline agents. It is characterised by the use of pregelatinisation process and dehydration either by frying or by other methods.	Made up principally of rice flour and other wholesome food with or without the incorporation of seasoning.
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ Principally of a cereal meal ▪ May contain carbohydrate foods, egg solids, salt and any other food 	<ul style="list-style-type: none"> ▪ Free from dirt, foreign matter and insects. ▪ Acceptable in term of appearance, texture, aroma, taste and colour and be free from any undesirable off-flavours and odours. ▪ To qualify for the concept of 'instant', the noodle shall be cooked or soaked in not more than four minutes in boiling water. ▪ Essential ingredients are: <ul style="list-style-type: none"> a) wheat flour and other flour or staches; b) water; and c) common salts or alkaline salts. The permitted alkaline salts are sodium, potassium, or calcium salt of carbonates, phosphates and/or hydroxides. ▪ Moisture: 10% (fried), 14% (non-fried) ▪ Cooking or soaking time: 4 minutes (friend and non-fried) ▪ Protein content: 8.5% (fried and non-fried) ▪ Acid value: 2.0 mg KOH/g (fried), Not applicable (non-fried) 	<ul style="list-style-type: none"> ▪ In the form of solid strands and shall be free from mould, off-flavour, insect infestation or other spoilage. ▪ To qualify for the concept of 'instant', the product must be cooked in not more than four minutes in boiling water. ▪ Moisture: 12% ▪ Cooking time: 4 minutes ▪ Total protein: 5.7% ▪ Total ash: 1.0%

Case study 1: Instant Noodles

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 526:2009	MS 1112:1988
Food Additives	<ol style="list-style-type: none"> 1. Permitted colouring substance 2. Transglutaminase, sulphur dioxide or sulphites (as permitted food conditioner): <200mg/kg <ul style="list-style-type: none"> ▪ Subject to general requirements concerning food additives. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ May contain food additives but not contain any added preservatives.
Contaminant	<ol style="list-style-type: none"> 1. Arsenic (As): <1mg/kg 2. Lead (Pb) : <2 mg/kg 3. Tin (Sn): <40 mg/kg 4. Mercury (Hg): <0.05 mg/kg 5. Cadmium (Cd): <1 mg/kg 6. Antimony (Sb): < 1mg/kg 7. 3-monochloropropane-1,2-diol (3-MCPD) for all foods containing acid hydrolysed protein (solid foods): 0.05 mg/kg 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.
Hygiene	<ul style="list-style-type: none"> ▪ Harmful, damaged packages prohibited ▪ No pathogenic microorganisms ▪ Aflatoxin or any other mycotoxins: <5 µg/kg ▪ Food Hygiene Regulations 2009 	<ul style="list-style-type: none"> ▪ Packed in suitable packaging materials which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product. ▪ Packaging materials shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substances or undesirable odour or flavour. ▪ Processed and packed under hygienic conditions in premises licensed in accordance with MS1514 – Good Manufacturing Practices. 	<ul style="list-style-type: none"> ▪ Processed and packed under hygienic conditions.

Case study 1: Instant Noodles

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 526:2009	MS 1112:1988
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ol style="list-style-type: none"> 1. If labelled with the word “egg” or any word of similar meaning: >4% egg solids calculated on water-free basis <ul style="list-style-type: none"> ▪ Subject to general requirements for labelling ▪ Nutrient labelling is mandatory (regulation 18B of the Food Regulations 1985) 	<ol style="list-style-type: none"> 1. The following information shall appear clearly on each package: <ol style="list-style-type: none"> a) name of product; b) name and address of the manufacturer and/or distributor or trade mark owner; c) net weight (in grams); d) list of ingredients and additives; e) date of manufacture or manufacturer’s code; f) date of expiry; and g) method of preparation. <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985. 	<ol style="list-style-type: none"> 1. The following information shall appear clearly on each package: <ol style="list-style-type: none"> a) name of product; b) list of ingredients and added additives; c) name of manufacturer and/or supplier; d) guaranteed net weight in grams; e) date of manufacture or manufacturer’s code; <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Moisture: oven-drying method ▪ Protein content: Kjeldahl method ▪ Acid value: Titrimetric method ▪ Cooking time 	<ul style="list-style-type: none"> ▪ Moisture: oven-drying method ▪ Protein content: Kjeldahl method ▪ Ash content: Direct method ▪ Cooking time

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 601:1994
Name of the Standard	Flavoured drink	Ready-to-drink beverages (carbonated and non-carbonated)
Scope	Flavoured drink	Ready-to-drink beverages including fruit drinks and flavoured drinks
Description	Flavoured drink shall be the soft drink composed of potable water and permitted flavouring substances, with or without sugar, glucose, high fructose glucose syrup or edible portions of extract of fruit or other plant substance. It may contain carbon dioxide.	A non-alcoholic beverage and is saturated with carbon dioxide. It is prepared from comminuted fruit or fruit juices or concentrates and/or fruit or plant extracts, permitted sweeteners, potable water with or without the addition of the following ingredients: a) acidity regulators; b) permitted food conditioners; c) permitted flavouring substance; d) permitted preservatives; e) permitted colouring substance; f) permitted nutrient supplement like vitamin C; g) salts.
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Free from insect, rodent contamination and foreign particles as well as visibly free from seeds and skins. ▪ Have the flavour and aroma characteristic of the fruits, vegetables or flavours for which it is claimed or implied. Foreign flavours and odours shall not be present. ▪ Carbon dioxide – industrial grade free from hydrogen sulphide, sulphur dioxide and other noxious gases, mineral oils and also free from foreign odour. ▪ Flavouring agents: <i>Comminuted fruit and fruit juices or concentrates</i> – Extracted from natural and properly washed fruits and fit for consumption. They may either be freshly prepared or concentrated and preserved either by pasteurization or addition of permitted chemical preservatives. <i>Essential oils and fruit/plant extracts</i> – Essential oils and fruit/vegetable extracts are compounds obtained from fruit or plants and shall be safe for human consumption. <i>Flavouring substances</i> – Substance either naturally present in fruit/plant or added capable of imparting flavour to the product and shall be safe for consumption.

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 601:1994
Food Additives	<ol style="list-style-type: none"> 1. May contain permitted preservative, permitted colouring substances and permitted food conditioner including: ester gum <150 mg/litre; and β-cyclodextrin <500 mg/litre 2. May contain caffeine-containing plant extract as permitted flavouring substance: < 200 mg/litre 3. Preservative: Sulphur dioxide: <140 mg/kg Benzoic acid: <350 mg/kg Sorbic acid: <350 mg/kg 4. Flavouring substance: Agaric aid: <20 mg/kg Total hydrocyanic acid: <1 mg/kg Pulegone: <1 mg/kg Quassin: <5 mg/kg Quinine: <85 mg/kg Thujones: <0.5 mg/kg <ul style="list-style-type: none"> ▪ Subject to general requirements concerning food additives. 	<ol style="list-style-type: none"> 1. Acid regulators - The following acids and the sodium, potassium, calcium salt of the acids may be used: a) citric acid; b) phosphoric acid; c) lactic acid; d) malic acid; e) acetic acid; f) fumaric acid; g) tartaric acid. 2. Food colours, nutritive and non-nutritive sweeteners as per Food Regulations. 3. Mineral salts – sodium carbonate and sodium bicarbonate 4. Preservatives: Sulphuric dioxide: <140 ppm Benzoic acid: <350 ppm Sorbic acid: <350 ppm 5. Flavouring agents (if used): Caffeine: <150 ppm Quinine: 40-85 ppm Vitamin C (ascorbic acid): 10 mg/100ml
Contaminant	<ol style="list-style-type: none"> 1. Arsenic (As): <0.1mg/kg 2. Lead (Pb) : <0.2 mg/kg 3. Tin (Sn): <40 mg/kg (<250 mg/kg if packed in can) 4. Mercury (Hg): <0.05 mg/kg 5. Cadmium (Cd): <1 mg/kg 6. Antimony (Sb): < 0.15 mg/kg 	<ul style="list-style-type: none"> ▪ Metal contaminants: Copper: <1.0 ppm Arsenic: <0.02 ppm Lead: <0.2 ppm
Hygiene	<ul style="list-style-type: none"> ▪ Harmful, damaged packages prohibited ▪ Any glass bottle that has previously been used for another food ▪ No pathogenic microorganisms ▪ Aflatoxin or any other mycotoxins: <5 μg/kg ▪ Food Hygiene Regulations 2009 	<ul style="list-style-type: none"> ▪ Total colony count: <50 per ml ▪ Viable yeast and moulds: <10 per ml ▪ Presumptive coliform organism: negative ▪ Shall be prepared under strict hygienic conditions in accordance with Good Manufacturing Practices and relevant public health requirements currently enforced.
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 601:1994
Labelling	<ol style="list-style-type: none"> 1. Not allowed to use "beer", "lager", "champagne" or "wine" or other words suggesting that the product is an alcoholic beverage other than ginger beer, ginger ale and root beer. 2. Declare with words "flavoured syrup" or "flavoured cordial" or "flavoured drink", or the name of such flavour, for respective flavoured syrup or flavoured cordial or flavoured drink. 3. The label on the package of a flavoured syrup or flavoured drink shall not include – <ol style="list-style-type: none"> (a) any expression, pictorial representation or design that suggests or implies that the syrup or drink consists wholly or partly of fruit juice; or (b) a pictorial representation or design of a plant or part of a plant or a floral design that suggests or implies the presence of a plant in the syrup or drink 4. Declare presence of caffeine in beverage, if present. 5. Declare with words "flavour" or "flavoured" , if permitted fruit flavouring substance is added. 6. Where fruit juice drink, fruit drink or flavoured drink is carbonated, there shall be written in the label on a package containing such drink – <ol style="list-style-type: none"> (a) the word "carbonated fruit juice drink" or "carbonated fruit drink" or "carbonated flavoured drink" as the case may be; or (b) the words "carbonated (state the name of the fruit) juice drink" or "carbonated (state the name of the fruit) fruit drink" or "carbonated (state the name of the flavour) flavoured drink", as the case may be. 7. Where flavoured drink or botanical beverage contains quinine in a proportion exceeding 40 mg/litre – <ol style="list-style-type: none"> (a) the proportion of quinine added in mg/litre shall be stated on the label; and (b) such product may be labelled as "tonic water". <ul style="list-style-type: none"> ▪ Subject to general requirements for labelling ▪ Nutrient labelling is mandatory (regulation 18B of the Food Regulations 1985) 	<ol style="list-style-type: none"> 1. Each container shall be suitably labelled with the following information: <ol style="list-style-type: none"> a) name and trade-mark of the product; b) name and address of the manufacturer and/or packer; c) guaranteed net volume in ml; d) list of ingredients in descending order of proportions; e) code number indicating batch and/or date of manufacture; ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Caffeine: HPLC method ▪ Quinine: spectrophotometric method ▪ Ascorbic acid (vitamin c): titrimetric method ▪ Copper, arsenic, lead: Atomic absorption spectrophotometric method ▪ Total colony count: pour plate method ▪ Yeast & moulds: pour plate method ▪ Coliforms: MPN method ▪ Sulphur dioxide: Rankin method ▪ Benzoic acid and sorbic acid: HPLC method

Case study 3: Frozen Prepared Foods

Standard Item	MS 1125:2003	MS 1126:2003
Name of the Standard	Meat Frankfurters	Meat Burgers
Scope	Chilled and frozen meat frankfurters made from comminuted meat (beef, lamb and mutton, poultry, pork) with or without meat by-products in the form of a sausage	Chilled and frozen meat burgers made from comminuted meat (beef, lamb and mutton, poultry, pork).
Description	Frankfurters shall be sausages that are either raw or cooked with or without smoking. The product is prepared from comminuted meat, seasoned with salt, herbs and spices, mixed with food additives, filler and binders and packed into casings made from cellulose, collage or intestines of animals. The frankfurters unless otherwise specified shall be skinless or skin on and uniform in size and shape.	Meat burgers shall be the meat product prepared from comminuted meat with or without the addition of fillers, binders, herbs and spices, salt, sweeteners and other food additives, and is sold in various shapes and sizes.

Case study 3: Frozen Prepared Foods

Item	Standard MS 1125:2003	Standard MS 1126:2003
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughterhouse and poultry processing plant. ▪ Trimmings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used. ▪ Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used. ▪ Binders – Other non-meat proteins from soya bean or dairy products may be used. ▪ Fat – only wholesome, edible vegetable or animal fat derived from the same species of animal used in the product, may be used. ▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985. ▪ Salt – edible white refined salt shall be used. ▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used. ▪ Finished product – either raw or thoroughly cooked or smoked, or flavoured and cooked and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery. ▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour. ▪ Texture – shall be a good uniform texture, characteristic of the product. ▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. ▪ Poisonous or deleterious substance shall not be present. ▪ Contain >65% by weight of meat. ▪ May contain meat by-products which include hearts, tongues, diaphragm meat and wesands up to a limit of 15% calculated on the weight of all ingredients with the exception of the added water. ▪ Salt, sugar and seasoning all together shall not exceed 4% by weight. ▪ Moisture content: max. 60% by wet weight ▪ Total fat content: max. 30% by wet weight ▪ Protein content: min. 11% by wet weight 	<ul style="list-style-type: none"> ▪ All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughterhouse and poultry processing plant. ▪ Trimmings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used. ▪ Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used. ▪ Binders – Other non-meat proteins from soya bean or dairy products may be used. ▪ Fat – only wholesome, edible vegetable or animal fat derived from the same species of animal used in the product, may be used. ▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985. ▪ Salt – edible white refined salt shall be used. ▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used. ▪ Finished product – uniform in size and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery. ▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour. ▪ Texture – shall be a good uniform texture, characteristic of the product. ▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. Poisonous or deleterious substance shall not be present. ▪ Contain >65% by weight of meat. ▪ May contain meat by-products which include hearts, tongues, diaphragm meat and wesands up to a limit of 15% calculated on the weight of all ingredients with the exception of the added water. ▪ Salt, sugar and seasoning all together shall not exceed 4% by weight. ▪ Moisture content: max. 60% by wet weight ▪ Total fat content: max. 30% by wet weight ▪ Protein content: min. 15% by wet weight

Case study 3: Frozen Prepared Foods

Standard Item	MS 1125:2003	MS 1126:2003
Food Additives	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.
Contaminant	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.
Hygiene	<ul style="list-style-type: none"> ▪ After processing, frankfurters may be chilled before freezing and the freezing completed at -12°C or lower within 24 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period. ▪ Prepared and handled under strict hygienic conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480. ▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, frankfurters shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers. ▪ Mesophilic aerobic plate count (at 37°C for 48h): <10⁴ (cooked), <10⁵ (raw) per gram ▪ Coliform count (at 37°C for 48h): <50 per gram ▪ <i>E. coli</i>: negative ▪ <i>Salmonellae</i>: negative ▪ <i>S. aureus</i>: negative ▪ <i>Clostridia</i>: negative 	<ul style="list-style-type: none"> ▪ After processing, the meat burgers may be chilled before freezing and the freezing completed at -12°C or lower within 8 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period. ▪ Prepared and handled under strict hygienic conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480. ▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, meat burgers shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers. ▪ Mesophilic aerobic plate count (at 37°C for 48h): <2.5 x 10⁵ per gram ▪ Coliform count (at 37°C for 48h): <100 per gram ▪ <i>E. coli</i>: negative ▪ <i>Salmonellae</i>: negative ▪ <i>S. aureus</i>: <100 per gram

Case study 3: Frozen Foods

Standard Item	MS 1125:2003	MS 1126:2003
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ol style="list-style-type: none"> 1. Each package shall be suitably labelled with the following: <ol style="list-style-type: none"> a) the name of the product; b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived; c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them; d) minimum net weight in grams; e) list of ingredients in descending order of proportions used by weight in the product; f) storage instructions; g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one year in normal conditions of storage and sale, adequate storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given; h) country of origin. <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985. 	<ol style="list-style-type: none"> 1. Each package shall be suitably labelled with the following: <ol style="list-style-type: none"> a) the name of the product; b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived; c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them; d) minimum net weight in grams; e) list of ingredients in descending order of proportions used by weight in the product; f) storage instructions; g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one year in normal conditions of storage and sale, adequate storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given; h) country of origin. <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Moisture content: oven-drying method (MS 954:Part 1:2000) ▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985) ▪ Protein content: Kjeldahl method (MS 954: Part 11:1986) ▪ <i>Salmonellae</i>: detection (MS 1110:Part 1:1988) ▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989) ▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989) ▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989) ▪ <i>Clostridia</i>: detection (MS 1110:Part 5:1992) 	<ul style="list-style-type: none"> ▪ Moisture content: oven-drying method (MS 954:Part 1:2000) ▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985) ▪ Protein content: Kjeldahl method (MS 954: Part 11:1986) ▪ <i>Salmonellae</i>: detection (MS 1110:Part 1:1988) ▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989) ▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989) ▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989) ▪ <i>Clostridia</i>: detection (MS 1110:Part 5:1992)

Case study 4: Food Additives

- General guidelines for usage of food additives in the Food Regulations 1985 & Schedules
- Food additives are classified into seven main categories under the Regulations:
 - Preservative;
 - Antimicrobial agent;
 - Colouring substance;
 - Flavouring substance;
 - Flavour enhancer;
 - Antioxidant; and
 - Food conditioner

Case study 4: Food Additives

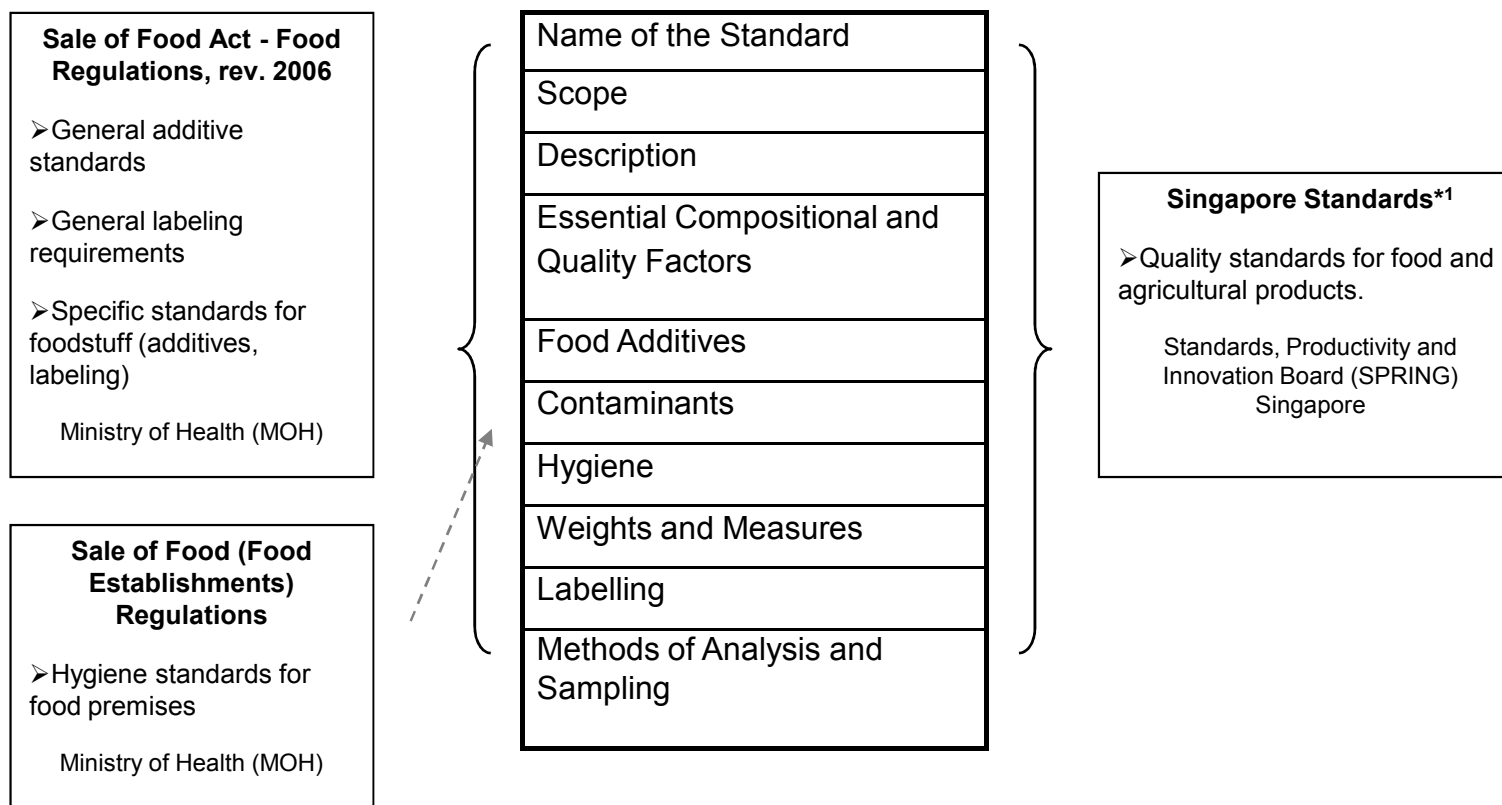
- Under the main category of 'food conditioner', there are a further ten sub-categories:
 - Emulsifiers;
 - Anti-foaming agents;
 - Stabilizers;
 - Thickeners;
 - Modified starches;
 - Gelling agents;
 - Acidity regulators;
 - Enzymes;
 - Solvents; and
 - Anti-caking agents
- Specific requirements for food additives are also found in standards for particular food commodities described within the Regulations
- Food additives in foods intended for consumption by infants and young children regulated separately within the Regulations
- Nutritive and non-nutritive sweetening substances are covered as particular food categories (sub-regulation 132A, 133 and 134) and not included as part of the general guidelines for food additives

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Standards and Analytical Methods
in Asia

Singapore



Singaporean Commodity Standards



*1 Voluntary standards with certification provided by an external SPRING Singapore accredited conformity assessment body



Singapore: Food Laws

- Sale of Food Act 2002
 - Allows relevant authority to administer Food Act and to formulate subsidiary regulations
 - Under direction and jurisdiction of Minister of Health
- Food Regulations
 - Provided for within the Act
 - Cover general requirements for food labeling, food additives, food packaging, contaminants, food irradiation, technical standards
- Sale of Food (Food Establishment) Regulations
 - Hygiene requirements for food handlers and food establishments



International Life Sciences Institute
SOUTHEAST ASIA REGION

Singapore: Food Safety Administration

- **Agri-food and Veterinary Authority (AVA)** is the sole agency for food safety
- Covers all processed foods, agricultural products, meat, dairy & fisheries products



Singapore: Singapore Standards (SS)

- Voluntary standards known as Singapore Standards are issued by **SPRING Singapore**
 - Under Ministry of Trade and Industry
 - Voluntary in nature, but may become mandatory if “used by government bodies in regulations or administrative requirements for safety, environmental and health issues”
- Agricultural products: none
- Food and food products: 70 standards
- Certification by 3rd party CABs accredited by Singapore Accreditation Council (SAC) managed by SPRING Singapore

Case study 1: Instant Noodle Standards

Standard Item	Food Regulations (as at 1 st September 2006)	SS 219:1979
Name of the Standard	Pasta	Dried noodles and pasta products
Scope	<ul style="list-style-type: none"> ▪ Noodles of various types, including products which are commonly known as “mee” (“mian”) or other “mee” products. ▪ Noodles including “spaghetti”, “macaroni” and the product commonly known as “mee sua” (“mian xian”). ▪ Rice noodles of various types, including products which are commonly known as “kuay teow” (“guo tiao”), “bee tai mak” (“mi shai mu”) and “hor fun” (“he fen”), “bee hoon” (“mi fen”). 	<ul style="list-style-type: none"> ▪ Dried noodle products covering noodles, instant noodles and “mian xian”.
Description	Any product which is prepared by drying of extruded or moulded units of dough or by steaming of slitted dough with or without drying.	Prepared from wheat flour, with or without the addition of sodium chloride, sodium bicarbonate, permitted colouring, flavouring matters and other food additives. The instant noodles could be flavoured separately by means of the soup base sachets. This group of products shall be subjected to a sheeting process. The products shall be in the form of rods or ribbons except for “mian xian” which shall be in the form of long thin threads.
Essential Composition and Quality Factor	<ol style="list-style-type: none"> 1. Principally of a cereal meal. 2. May contain common salt, eggs, various kinds of starch, edible fats and oils, and any other foodstuffs. 3. Noodles except those with <20% moisture (includes “mee” and “mee products”): >50% flour 4. Noodles with <20% moisture (includes “spaghetti”, “macaroni” and “mee sua”): >70% wheat flour 5. Rice noodles except those with <20% moisture (including “kuay teow”, “bee tai mek” and “hor fun”): >50% rice flour 6. Rice noodles with <20% moisture: >80% rice flour 	<ol style="list-style-type: none"> 1. Made from raw materials which are clean, wholesome and free from evidence of insect and rodent infestation and other objectionable matter. 2. The finished product shall be of good colour and reasonably free from broken units and dark specks. 3. When cooked, the products shall be tender and firm and possess a good characteristic flavour and odour. 4. Instant noodles shall be cooked within 3 minutes. 5. Protein content: min. 9.0% on dry weight basis 6. Moisture content: max. 13% 7. Total solids in gruel: max. 8% 8. Free fatty acids, as oleic acid of extracted oil (applies only to noodles products which have been deep fried in edible oils during processing): max. 0.8% 9. Peroxide value of extracted oil (applies only to noodles products which have been deep fried in edible oils during processing): 10.0 per kg oil

Case study 1: Instant Noodles

Standard Item	Food Regulations (as at 1 st September 2006)	SS 219:1979
Food Additives	<ol style="list-style-type: none"> 1. Permitted flavouring agents 2. Permitted colouring matters <ul style="list-style-type: none"> ▪ Subject to general requirements for food additives. 	<ul style="list-style-type: none"> ▪ Not specified
Contaminant	<ol style="list-style-type: none"> 1. Arsenic (As): <1 ppm 2. Lead (Pb): <2 ppm 3. Copper (Cu): <20 ppm 4. Tin (Sn): <250 ppm 5. Cadmium (Cd): <0.2 ppm 6. Antimony (Sb): <1 ppm 7. Selenium (Se): <1 ppm 	<ul style="list-style-type: none"> ▪ Not specified
Hygiene	<ul style="list-style-type: none"> ▪ Package or container made with compounds known to be carcinogenic, mutagenic, teratogenic or any other poisonous or injurious substance. ▪ Mycotoxins: negative ▪ Total Count at 37°C for 48 hours: Not more than 1000,000 per mg ▪ Sale of Food (Food Establishments) Regulations 	<ul style="list-style-type: none"> ▪ The product shall be suitably packaged to protect the contents from contamination and deterioration under normal conditions of storage and transport.
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ol style="list-style-type: none"> 1. If labelled with the word "egg" or any word of similar meaning: >4% egg solids calculated on dry basis <ul style="list-style-type: none"> ▪ Subject to general requirements for labelling. ▪ Nutrient labelling is necessary if a nutrition claim is made (regulation 8A of the Food Regulations) 	<ol style="list-style-type: none"> 1. The packet shall be legibly marked as follows: <ol style="list-style-type: none"> a) Name and type of the product b) Name and address of the manufacturer and/or his registered trade mark c) Batch or code number d) Net weight
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Food additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Protein content: Improved Kjeldahl method ▪ Moisture content: Air-oven method ▪ Total solids in gruel ▪ Free fatty acids and peroxide value of extracted oil

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations (as at 1 st September 2006)	SS 62:1997
Name of the Standard	Soft drinks	Carbonated and non-carbonated beverages
Scope	<ol style="list-style-type: none"> 1. Any flavoured drink ready for consumption without dilution 2. Soda water, Indian or quinine tonic water, and any carbonated water whether flavoured or unflavoured; 3. Ginger beer and any beverage made from any harmless herbal or botanical substance; 4. Fruit drink or fruit crush. 	<ol style="list-style-type: none"> 1. Fruit-flavoured carbonated beverages 2. Flavoured carbonated beverages 3. Beverages containing natural extracts 4. Non-flavoured and unsweetened carbonated beverages
Description	Soft drink shall be any substance in liquid or solid form intended for sale as drink for human consumption, either with or without dilution	Non-alcoholic carbonated beverages are beverages prepared from refined sugar, or syrup base, flavours and/or acidulants with or without fruit juices and are artificially charged with carbon dioxide in sealed packages.
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Potable water – colourless, clear, odourless, pleasant to taste and safe for human consumption. ▪ Carbon dioxide – minimum purity of 99.5 (v/v) carbon dioxide. It shall be colourless and odourless and shall not contain any extraneous mineral or organic substances. ▪ Sugar – pure, white, crystalline solids giving a polarization reading of at least 99.8°S and should be free from moulds and yeasts. Sugar may be substituted with syrup base. ▪ Fruit concentrates – of a quality that gives a satisfactory flavour and colour ▪ Flavourings – natural flavourings are those obtained from fruits or plants by extraction, distillation, expression or any other suitable process. Artificial flavours are those obtained from chemical synthesis. ▪ Finish product – free from dust, dirt, extraneous fibres, hairs, rags, insect and rodent contamination, fragments of cork or glass or other foreign matter. ▪ Flavour – have a well-balanced and pleasant flavour. They shall be free from off-flavours and off-odours. ▪ Sugar content – min. 5 °Brix ▪ Fruit juice content – min. 5% ▪ Carbonation – 1.5 volume

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations (as at 1 st September 2006)	SS 62:1997
Food Additives	<ol style="list-style-type: none"> 1. May contain: ester gum: <100 ppm sucrose acetate isobutyrate: <300 ppm dimethyl polysiloxane: <10 ppm dimethyl dicarbonate: <250 ppm sulphur dioxide: <70 ppm benzoic acid: <160 ppm methyl or propyl para-hydroxy benzoate: < 160 ppm sorbic acid: <300 ppm quillaia: <200 ppm <ul style="list-style-type: none"> ▪ Subject to general requirements for food additives. 	<ul style="list-style-type: none"> ▪ Acidulants – Include citric acid, tartaric acid, malic acid, lactic acid, phosphoric acid, ascorbic acid, acetic acid, adipic acid, fumaric acid, hydrochloric acid, <u>dl</u>-lactic acid, <u>dl</u>-malic acid, <u>ortho</u>-phosphoric acid and L (+) tartaric acid. ▪ Permitted food colours, clouding agents, foaming agents, emulsifying and stabilising agents, and preservatives.
Contaminant	<ol style="list-style-type: none"> 1. Arsenic (As): <0.1 ppm 2. Lead (Pb): <0.2 ppm 3. Copper (Cu): <2 ppm 4. Tin (Sn): <250 ppm 5. Cadmium (Cd): <0.2 ppm 6. Antimony (Sb): <1 ppm 7. Selenium (Se): <1 ppm 	<ul style="list-style-type: none"> ▪ Arsenic – <0.1 mg/kg ▪ Lead – <0.2 mg/kg ▪ Copper – <2 mg/kg
Hygiene	<ul style="list-style-type: none"> ▪ Package or container made with compounds known to be carcinogenic, mutagenic, teratogenic or any other poisonous or injurious substance. ▪ Mycotoxins: negative ▪ <i>Escherichia coli</i>: 20 per ml ▪ Total Count at 37°C for 48 hours: Not more than 100,000 per ml ▪ Sale of Food (Food Establishments) Regulations 	<ul style="list-style-type: none"> ▪ Processing site for carbonated and non-carbonated beverages shall be kept hygienically clean and shall be free from flies, bees, other insects and rodents. ▪ Total bacteria count: 200 per 20ml; 10 per ml ▪ Coliform count: Negative per 20ml; Negative per 10ml ▪ Yeast and mould count: Negative per 20ml; Negative per ml

Case study 2: Carbonated Water-based Beverages

Standard Item	Food Regulations (as at 1 st September 2006)	SS 62:1997
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ol style="list-style-type: none"> 1. The term “non-alcoholic” shall be reserved only for those products which contain not more than 0.5% (v/v) alcohol at 20°C. 2. Any drink for human consumption without dilution which incorporates the name of a fruit, vegetable or flower in its name but does not use the juice of that fruit, vegetable or flower shall be labelled in the following manner: <ol style="list-style-type: none"> (a) (Name of fruit, vegetable or flower)–ade (b) (Name of fruit, vegetable or flower) flavoured drink; and (c) Imitation (name of fruit, vegetable or flower) drink. <ul style="list-style-type: none"> ▪ Subject to general requirements for labelling ▪ Nutrient labelling is necessary if it a nutrition claim is made (regulation 8A of the Food Regulations) 	<ul style="list-style-type: none"> ▪ Each package shall be legibly and indelibly marked as follows: <ol style="list-style-type: none"> a) Name of product; b) Name and address of manufacturer, packer or vendor and/or his registered trademark; c) Net volume; d) Batch or code number; e) Date marking.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Food additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Sugar content: hydrometer or refractometer method ▪ Gas volume ▪ Total colony count: Membrane filter enumeration method ▪ Coliforms: Membrane filter enumeration method ▪ Coliforms (for pulpy sample): MPN method ▪ Yeast & moulds: Membrane filter enumeration method ▪ Yeast & moulds (for pulpy sample): Spread plate method ▪ Arsenic, lead, copper: Atomic absorption spectrophotometric method

Case study 3: Frozen Prepared Foods

- Currently no standards available

Case study 4: Food Additives

- General guidelines found in the Food Regulations & Schedules
- Food additives are classified into thirteen main categories as follows:
 - Anti-caking agents
 - Anti-foaming agents
 - Anti-oxidants
 - Artificial sweetening agents
 - Chemical preservatives
 - Colouring matters
 - Emulsifiers or stabilizers
 - Flavouring agents
 - Flavour enhancers
 - Humectants
 - Nutrient supplements
 - Sequestrants
 - General purpose food additives

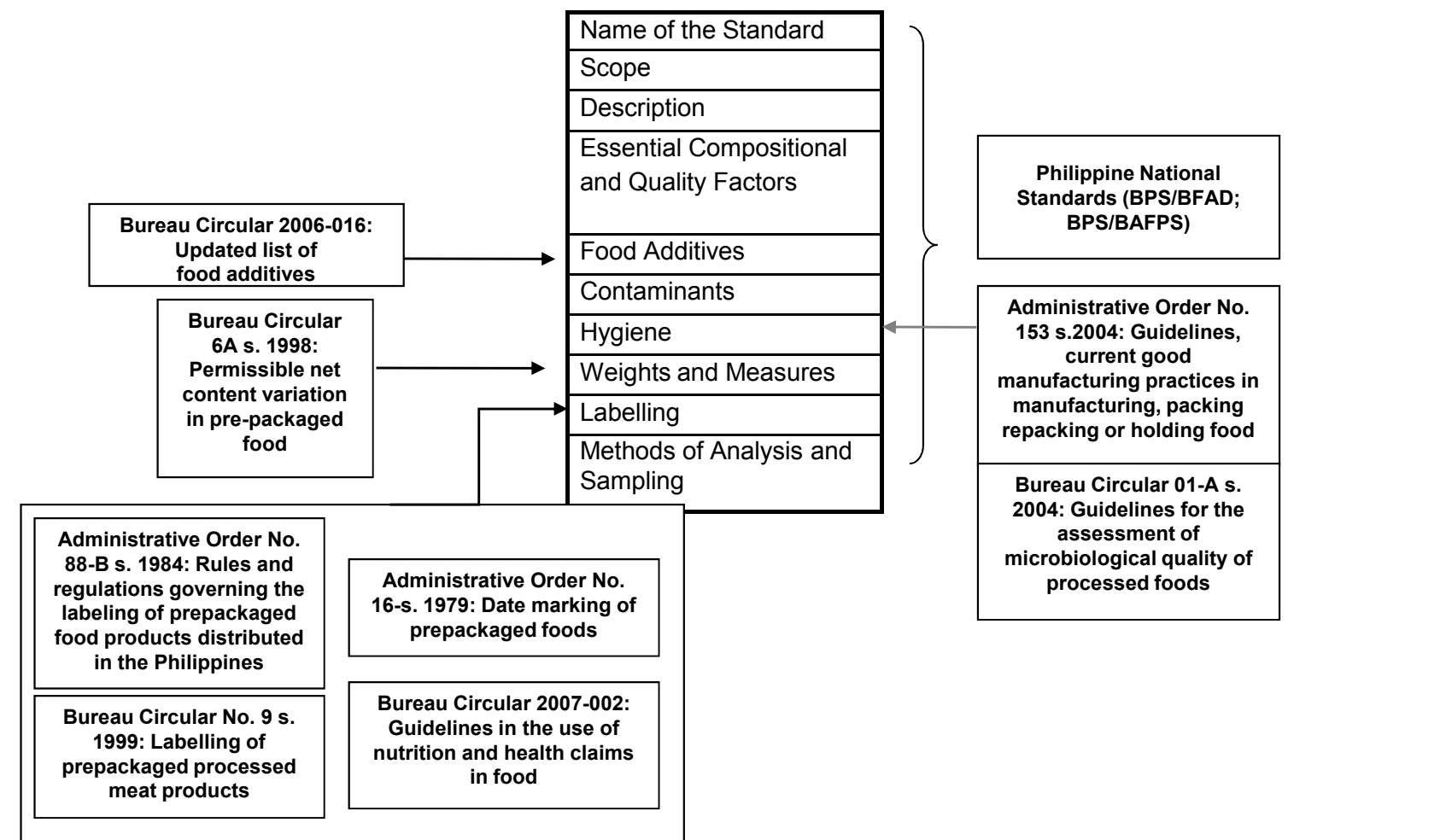
ILSI Japan/MAFF Project
Investigation of Commodity Food
Standards and Analytical Methods
in Asia

Philippines



Philippine Commodity Standards

1987 Constitution of the Philippines; Food, Drugs and Devices, and Cosmetics Act; Food and Drug Administration Act 2009; Consumer Act of the Philippines





Philippines: Food Laws

- **1987 Constitution of the Philippines:**

“The State shall establish and maintain an effective food and drug regulatory system and undertake the appropriate health, manpower development, and research, responsive to the country’s health needs and problems.”

- Main foundation of food laws in the Philippines



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Philippines: Food Laws

Food-related laws enacted by Congress:

- **Consumer Act of the Philippines**
 - Provide mandate to Dept of Health to elaborate standards related to food, drug, cosmetics and devices
- **Food, Drug and Devices, and Cosmetics Act**
 - Main food law of the Philippines
 - Delegates responsibility to **Bureau of Food and Drug(BFAD)** to administer and enforce food law
 - Mandates BFAD to elaborate regulations, standards etc
- **Food and Drug Administration Act 2009**
 - Renames and reorganizes BFAD to **FDA**



Philippines: Food Laws

FDA empowered to issue regulations related to food standards:

- **Food additives**

- Bureau Circular 2006-016: Updated list of food additives

- **Hygiene**

- Administrative Order No. 153 s.2004: Guidelines, current good manufacturing practices in manufacturing, packing repacking or holding food;
- Bureau Circular 01-A s. 2004: Guidelines for the assessment of microbiological quality of processed foods

- **Labelling**

- Administrative Order No. 16-s. 1979: Date marking of prepackaged foods;
- Administrative Order No. 88-B s. 1984: Rules and regulations governing the labeling of prepackaged food products distributed in the Philippines;
- Bureau Circular No. 9 s. 1999: Labelling of prepackaged processed meat products;
- Bureau Circular 2007-002: Guidelines in the use of nutrition and health claims in food

- **Weights and measures**

- Bureau Circular 6A s. 1998: Permissible net content variation in pre-packaged food



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Philippines: Food Laws

Other food-related laws enacted by Congress:

- **Agriculture and Fisheries Modernization Act of 1997**
 - Mandates **Bureau of Agriculture and Fisheries Product Standards (BAFPS)** to draft agriculture standards and enforcement
- **The Meat Inspection Code of the Philippines**
 - Mandates the **National Meat Inspection Services (NMIS)** as the sole national controlling authority for meat and meat products



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Philippines: Food Safety Administration

- Responsibilities split between Dept. of Health & Dept. of Agriculture
- DoH: BFAD/FDA
 - All food products apart from agricultural, fisheries & meat
- DoA:
 - BAFPS : agricultural & fisheries
 - NMIS : meat & meat products



Philippines: Mandatory Standards

- FDA elaborates mandatory standards for processed foods through regulations
 - AO 132 s. 1970 Regulation prescribing the Standard of Identity and Quality of Milk and Milk Products
 - AO154 s. 1971 Regulation B-4 Definition and Standards of Identity of Foods: 4.14 Meat and Meat Products, 4.14.01 Sausages
 - AO 136-B s. 1985 Standards for Soluble Coffee with Added Carbohydrates
 - AO 2005-018 Philippine National Standards on Ethnic Food Products



Philippines: Philippines National Standards (PNS)

- Developed jointly by **Bureau of Product Standards** (BPS), in consultation with FDA or BAFPS
- Agriculture (PNS-BAFPS): 73
Food and food products (PNS-BFAD): 21



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Philippines: PNS Standards

- Voluntary in nature, though can become mandatory if products affect the life, health and property of its users
 - Food and agricultural products
- PNS-BFAD, PNS-BAFPS standards used by authorities for regulatory purposes – mandatory
- Certification provided by BPS
 - PS Quality Mark



Case study 1: Instant Noodles

Standard Item	PNS/BFAD 18:2008
Name of the Standard	Flour sticks (<i>pancit canton</i>)
Scope	Processed flour sticks (<i>pancit canton</i>) for human consumption
Description	Flour sticks or 'pancit canton' are molded and fried noodle strands, which can be consumed with or without prior cooking preparation, made from wheat flour, singly or in combination with other flours and/or starches, water and salt with or without added optional ingredients.
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ Basic Ingredients: wheat flour; potable water; salt; cooking oil ▪ Optional Ingredients: other flours and starches; fresh eggs or egg powder; fresh or powdered fruit and vegetables; seasoning and condiments. ▪ General requirements – Moisture content: <8%; Free fatty acids: 0.5% (as oleic acid); Sensory properties: uniform size of noodle strands with acceptable color, no rancid odor and taste and crispy texture. ▪ Types of defects – Foreign matter: any matter which has not been derived from the components or constituents of ingredients used in the product; does not pose a threat to human health and can be recognized without magnification or is present at a level determined by a method including magnification that indicates non-compliance with good manufacturing and sanitation practices. Appearance: (a) Brownish or blackish specks or discoloration that affects > 5% of the weight of the sample unit after manufacture; (b) Loose or broken noodle strands present in weights >5 % of the weight of the sample unit after manufacture. Odor and flavour: (a) Objectionable odor and flavor indicative of deterioration or contamination (like rancidity, fermentation or taints) on uncooked and cooked noodles; (b) Pronounced burnt odor on uncooked and cooked noodles.

Case study 1: Instant Noodles

Item	Standard PNS/BFAD 18:2008
Food Additives	<ul style="list-style-type: none"> ▪ In accordance to BFAD Bureau Circular No. 2006-016, the Codex Alimentarius Commission and/or authority for these products. ▪ Permitted food additives to be used: <ul style="list-style-type: none"> <u>Acid regulator</u> NaOH – GMP <u>Antioxidant</u> BHA – Max: 100 mg/kg; BHT – Max: 200 mg/kg; Tocopherol – GMP <u>Color</u> FD&C Yellow #5 (Tartrazine) – Max: 300 mg/kg; FD&C Yellow #6 (Sunset Yellow) - Max: 300 mg/kg <u>Flour treatment agent</u> Phosphates (as Na or K Phosphates) – Max: 2,200 mg/kg <u>Raising agent/stabilizer</u> Na₂CO₃ – Max: 2,600 mg/kg; K₂CO₃ – Max: 2,600 mg/kg ▪ Carry-over of other food additives not listed shall be allowed provided they are approved by BFAD regulation and in accordance to Section 5.2 of the “Codex Principles Relating to the Carry-Over of Food Additives into Foods (CAC/Volume 1 1991)”.
Contaminant	<ul style="list-style-type: none"> ▪ Not specified
Hygiene	<ul style="list-style-type: none"> ▪ Prepared and handled in accordance to “ Codex Recommended International Code of Practice – General Principles of Food Hygiene” and/or “BFAD A.O. No. 153 s. 200 – Guidelines on the Current Good Manufacturing Practices in Manufacturing , Packing, Repacking or Holding Food” and processed according to the “Recommended Code of Practice for the Processing of Flour Sticks (<i>Pancit Canton</i>) (PNS 19:2008)”. ▪ When tested by appropriate methods of sampling and examination: <ul style="list-style-type: none"> a) free from filth that may pose a hazard to health; b) free from parasites which may represent a hazard to health; c) not contain any substance originating from microorganisms in amounts which may represent a hazard to health; and d) free from spoilage or pathogenic microorganisms capable of survival and multiplication under normal storage conditions ▪ The product shall be packed in suitable hygienic primary and secondary packages that will maintain its quality during storage and transport.

Case study 1: Instant Noodles

Item	Standard PNS/BFAD 18:2008
Weight and Measures	<ul style="list-style-type: none"> ▪ The average net weight of sample unit may exceed declared net weight; however, no individual package shall be <95% of the declared net weight.
Labelling	<ul style="list-style-type: none"> ▪ Labelling of retail packages/container – each retail container shall be labelled and marked with the information according to BFAD Labelling Regulations and shall contain the following information: <ul style="list-style-type: none"> a) The name of the product. The name of the product shall be “Flour Sticks” or “Pancit Canton”. The product may be called by other common names like: “Wheat Flour Sticks”, “Wheat Noodles”, “Wheat Flour Noodles”, “C(K)anton Noodles” or “Panc(s)it C(K)anton Noodles”, provided such name is accepted in the country of distribution. b) The Name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the food. c) The complete list of ingredients and food additives used in the preparation of the product in descending order of proportion. d) The net content by weight in metric system. Other systems of measurement required by importing countries shall appear in parenthesis after metric system unit. e) The words “Best/Consume Before”/“Use by date”, indicating end of period at which the product shall retain its optimum quality attributes at define storage conditions. f) Lot identification marked in code identifying product lot. g) The words “Product of the Philippines” or similar expressions, or the country of origin if imported. h) Additional requirements – a pictorial representation of the product(s) on the label should not mislead the consumer with respect to the product so illustrated. ▪ Labelling of non-retail, bulk containers – The name of the product, lot identification code and the name and address of the manufacturer or packer shall appear in the container. However, the name and address of the manufacturer may be replaced by identification marks provided that such mark is clearly identified with accompanying documents. ▪ Nutrition labelling – Nutrition labelling shall conform to established regulations by the BFAD.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Method sampling – shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods (CAC/RM 42-1969) ▪ Determination of moisture – according to method of AOAC (2005, 18th edition) using the Oven Method ▪ Determination of free fatty acids (FFA) – according to the method of AOAC (2005, 18th edition) using the Titrimetric Method ▪ Determination of net weight

Case study 2: Carbonated Water-based Beverages

Item	Standard PNS/BFAD 11:2007
Name of the Standard	Citrus beverage products
Scope	Philippine <i>calamansi</i> (<i>Microcarpa Bunge</i>) and <i>dalandan</i> (<i>Citrus aurantium</i>) beverages including ready-to-drink (RTD) beverages made from sound and mature <i>calamansi</i> or <i>dalandan</i> preserved exclusively by physical means. Preservation by physical means does not include ionizing radiation. Other citrus cultivars may also be used provided they conform to the standard stated herein.
Description	Carbonated drink (soda) – A ready-to-drink beverage prepared by mixing carbonated water and sweetening agent or agents with citrus sugar-concentrate or extract.
Essential Composition and Quality Factor	<ul style="list-style-type: none"> ▪ Basic Ingredients – Citrus: <i>Calamansi</i> or <i>dalandan</i> – fruit to be used shall be fresh, sound, clean and mature from any cultivated variety suitable to the characteristics of the fruits of <i>Microcarpa Bunge</i> or <i>Citrus aurantium</i> variety. Other cultivars of citrus may also be used. Potable water: Water fit for human consumption. Sweetening agent: One or more of the sugars, honey, high intensity sweeteners or artificial sweeteners. Other ingredients: Other food-grade ingredients may be added. ▪ General requirements – the citrus beverage product shall have the characteristic colour, aroma and flavour of the variety of citrus fruit from which it is made and shall be free from objectionable sensory characteristics. ▪ pH and titrable acidity – the pH of the extract for <i>calamansi</i>: >2.0, <i>dalandan</i>: >2.50; titrable acidity (as % citric acid) for <i>calamansi</i>: >4.5%, <i>dalandan</i>: >0.7% ▪ Soluble solids – the soluble solids content of the extract (exclusive of added sweetening agent/s) for <i>calamansi</i>: >6.0% m/m, for <i>dalandan</i>: >7.0% m/m, as determined by refractometer at 20°C, uncorrected for acidity and read as °Brix on the International Sucrose Scales. ▪ Sweetening agent – one or more of the sugars, honey, high intensity sweeteners and artificial sweeteners may be added in amounts according to regulations set by BFAD, the Codex Alimentarius Commission and/or authority for these products. ▪ Ethanol content – the ethanol content shall not exceed 3 g/kg. ▪ Volatile acids – traces of volatile acids may be present. ▪ Sensory properties – the product shall have the characteristic colour, aroma and flavour of the citrus fruit (<i>calamansi</i> or <i>dalandan</i>) used. ▪ Types of defects – Foreign matters: any matter, which has not been derived from the citrus fruit (<i>calamansi</i> or <i>dalandan</i>), does not pose a threat to human health and is readily recognized without magnification or is present at a level determined by magnification method or any equivalent methods that indicates non-compliance with good manufacturing practices and sanitation practices. Odour/flavour/colour: a sample unit affected by objectionable odours or flavours indicative of decomposition and unacceptable discolouration due to product deterioration.

Case study 2: Carbonated Water-based Beverages

Item	Standard	PNS/BFAD 11:2007
Food Additives		<ul style="list-style-type: none"> ▪ In accordance to BFAD Bureau Circular No. 2006-016, the Codex Alimentarius Commission and/or authority for these products. ▪ Permitted food additives to be used: <ul style="list-style-type: none"> <u>Acid regulator</u> Citric acid; malic acid; calcium carbonate; adipates <u>Anticaking agent</u> Calcium aluminium silicate (synthetic); microcrystalline cellulose; aluminium silicate; carnauba wax <u>Antioxidant</u> Ascorbic acid; calcium ascorbate; erythorbic acid; potassium ascorbate; sodium ascorbate; sodium erythroate <u>Color</u> Carotenoids; chlorophylls, copper complexes; curcumin; riboflavin; sunset yellow; tartrazine <u>Preservatives</u> Benzoates; hydrobenzoates; sorbates; sulphites; carbon dioxide; phosphates; EDTA <u>Processing aids</u> <ul style="list-style-type: none"> a. Antifoaming agents – polydimethylsiloxane b. Clarifying agents/filtration aids/flocculating agents – adsorbent clays; adsorbent resins; activated carbon (only from plants); bentonite; cellulose; chitosan; colloidal silica; diatomaceous earth; gelatine (from skin collagen); ion exchange resins (cation and anion); kaolin; perlite; polyvinylpyrrolidone; rice hulls; silicasol; tannin c. Enzyme preparations – pectinases (for breakdown of pectin); proteinases (for breakdown of proteins); amylases (for breakdown of starch); cellulases (limited use to facilitate disruption of cell walls) d. Packing gas – nitrogen, carbon dioxide <u>Stabilizer/thickener</u> Calcium chloride; carob bean gum; carrageenan; gellan gum; guar gum; gum arabic; karaya gum; lactic and fatty acid esters of glycerol; pectins; potassium alginate; sodium alginate; tara gum; tragacanth gum; xanthan gum; agar; konjac flour; sodium carboxymethylcellulose <u>Sweetener</u> Acesulfame potassium; aspartame; saccharin; sucralose
Contaminant		<ul style="list-style-type: none"> ▪ Pesticide residues – amount of residue shall comply with those maximum residue limits for pesticides established by the Codex Alimentarius Commission and/or authority for these products. ▪ Heavy metal contamination – the citrus beverage products covered by the provisions of this standard shall comply with those maximum residue levels for heavy metal contamination established by the Codex Alimentarius Commission and/or authority for these products.

Case study 2: Carbonated Water-based Beverages

Item	Standard
Hygiene	<p style="text-align: center;">PNS/BFAD 11:2007</p> <ul style="list-style-type: none"> ▪ Prepared and handled in accordance with the appropriate sections of the “Codex Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1 -1969, Rev. 4-2003)” and/or “BFAD A.O. No. 153 s.2004 – Guidelines, Current Good Manufacturing Practices in Manufacturing, Packing, Repacking or Holding Food” and processed according to the “Recommended Code of Practice for the Processing and Handling of Citrus Beverage Products (PNS/BFAD 12:2007)”. ▪ When tested by appropriate methods of sampling and examination: <ul style="list-style-type: none"> a) free from filth that may pose a hazard to health; b) free from parasites which may represent a hazard to health; c) not contain any substance originating from microorganisms in amounts which may represent a hazard to health; d) free from spoilage or pathogenic microorganisms capable of survival and multiplication under normal storage conditions; and e) free from container integrity defects which may compromise the hermetic seal
Weight and Measures	<ul style="list-style-type: none"> ▪ Minimum fill – the citrus beverage product shall occupy not less than 90% of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C, which the sealed container will hold when completely filled. A container that fails to meet the requirement for minimum fill (90% container capacity) shall be considered “slack filled”.

Case study 2: Carbonated Water-based Beverages

Item	Standard PNS/BFAD 11:2007
Labelling	<ul style="list-style-type: none"> ▪ Each container shall be labelled and marked with the following information in accordance with current BFAD's Labelling Regulation: <ul style="list-style-type: none"> a) The name of the product shall be "[Name of citrus fruit + Type of beverages product]" (ex. <i>Calamansi</i> Juice; <i>Dalandan</i> Juice Powder); b) Products using artificial sweetener/s shall have statement/s referring to its low and/or reduced caloric value and the possibility of hypersensitivity to some of its components; c) The complete list of ingredients and food additives used in the preparation of the products in descending order of proportion; d) The net quantity of content by weight in the metric system. Other systems of measurement required by importing countries shall appear in parenthesis after the metric system unit; e) The name and address of the manufacturer, packer and/or distributor of the food; f) Open date marking: The word "Best/Consume before"/"Use by date", indicating end of period at which the product shall retain its optimum quality attributes at defined storage conditions; g) Lot or code number identifying product lot; h) The words "Product of the Philippines", or the country of origin if imported; i) Additional requirements – A pictorial representation of fruit(s) on the label should not mislead the consumer with respect to the fruit so illustrated; j) Direction for use should be indicated in the label; k) Storage instructions – where the citrus beverage product requires to be kept under conditions of refrigeration, there shall be information for storage and, if necessary, thawing of the product. Where practicable, storage instructions should be in close proximity to the open date marking; ▪ Nutrition labelling – nutrition labelling shall conform to established regulations of BFAD.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Measurement of pH – according to AOAC Official Methods of Analysis, Method No. 981.12, 16th ed., 1995. ▪ Determination of titrable acidity – According to AOAC Official methods of Analysis No. 942.15, 16th ed., 1995. ▪ Determination of total soluble solids – According to AOAC Official methods of Analysis No. 932.14C, 16th ed., 1995. ▪ Determination of alcohol in fruit products – According to AOAC Official methods of Analysis No. 920.150, 16th ed., 1995 ▪ Method of sampling – Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods – CAC/RM 42-1969, Codex Alimentarius Volume 13, 1994. ▪ Determination of lead using atomic absorption spectrophotometer – According to AOAC Official methods of Analysis No. 972.25, 16th ed., 1995. ▪ Determination of tin using atomic absorption spectrophotometer – According to AOAC Official methods of Analysis No. 985.16, 16th ed., 1995.

Case study 3: Frozen Prepared Foods

- **Currently no standards available**

Case study 4: Food Additives

- Regulations on the application of food additives are found in “Bureau Circular 2006-016: Updated list of food additives”, which adopts the format of the Codex GSFA
- Food additives in the Philippines are categorized into 25 categories, as follows:
 - Acidity regulator
 - Anticaking agent
 - Antifoaming agent
 - Antioxidant
 - Bleaching agent
 - Bulking agent
 - Carbonating agent
 - Color
 - Color retention agent

Case study 4: Food Additives

- Food additives in the Philippines are categorized into 25 categories, as follows:
 - Emulsifier
 - Emulsifying salt
 - Firming agent
 - Flavor enhancer
 - Flour treatment agent
 - Foaming agent
 - Gelling agent
 - Glazing agent
 - Humectant
 - Preservative
 - Propellant
 - Raising agent
 - Sequestrant
 - Stabilizer
 - Sweetener
 - Thickener

ILSI Japan/MAFF Project
Investigation of Commodity Food
Standards and Analytical Methods in
Asia

**Next Step: Indonesia,
Thailand and Vietnam?**



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Fostering Harmonization in a Diverse Region

- **Need for greater harmonization in scientific understanding, regulations and decision making in ASEAN region**
- **ILSI SEA Region identified key issues and areas relevant to region to be harmonized**
 - **Food Safety Standards**
 - **Nutrition labeling and claims**
 - **Scientific substantiation approach**
 - **Regulatory framework**



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Food Standards in ASEAN - Not Harmonized

- **Need for greater harmonization in scientific understanding, regulations and decision making in ASEAN region**
- **ILSI SEA Region identified key issues and areas relevant to region to be harmonized**
 - **Food Safety Standards**
 - **Nutrition labeling and claims**
 - **Scientific substantiation approach**
 - **Regulatory framework**



Harmonization of Food Safety Standards 2001

- **ILSI SEA Region collaborated with FAO/WHO to explore potential for reaching consensus to bring national food safety standards in line with Codex**
 - **Organized 1st ASEAN Food Safety Standards Harmonization Workshop**
 - Facilitate exchange of scientific information and knowledge that is essential to harmonization process
 - Discussion between regulators within ASEAN on the science behind food safety standards
 - Discuss rationale underlying the differences in current national safety standards



Harmonization of Food Safety Standards

2001

- Establish an ASEAN Working Group on Food Safety Standards Harmonization
 - Consists of key food regulators from 10 ASEAN countries

2001-2008

- A series of 7 ASEAN Workshops have been organized
 - Updates on scientific information on chemical and microbial risk assessment approach, exposure assessment, etc
 - Provide training and information on how to perform risk assessments
 - Member countries provided updates on their national food safety standards regulations
 - Progress of harmonization towards Codex standards reported
 - Done through the use of online database
- 2009
 - 8th ASEAN Workshop



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Harmonization of Food Safety Standards

Online Food Safety Database

- **ILSI SEA Region set up and continue to manage an on-line ASEAN Food Safety Standards database**
 - Consists of Codex GSFA and 10 ASEAN countries' standards on 45 selected food additives
 - Facilitate systematic review and periodical updating by participating ASEAN countries
 - Helpful tool to track harmonization status



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Harmonization Progress (2003-2009)

- **45 Substances**
 - **22 Preservatives**
 - **17 Colourings**
 - **6 Sweeteners**
- **10 ASEAN countries**
- **GSFA reference: Y 2007**
- **Food categories:**
239 ⇒ 268

Microsoft PowerPoint - [Approach Toward Harmonization of Food Regulations ILSI SEA Region Experience May 2008.ppt]

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http://www.aseanfssdatabase.com/admin/byharmonise.php

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Member Listing

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My Profile

By Country

By Harmonisation

FEMA

Logout

By Harmonisation

Step 1 > Choose by Additives OR by Food Category

By Additives By Food Category

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ASEAN Food Safety Standards Database

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ASEAN Food Safety Standards Database

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Comparison Listing by Additive
Country : Singapore
Additive Type: Colouring Agent
Substance Name: Brilliant Blue

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Food Cat Nos.	Food Description	GSFA	Country Value	Status
01.0.0.0	DAIRY PRODUCTS AND ANALOGUES, EXCLUDING PRODUCTS OF FOOD CATEGORY 02.0	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠
01.1.0.0	Milk and dairy-based drinks	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠
01.1.1.0	MILK AND BUTTERMILK (PLAIN)	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠
01.1.1.1	Milk (plain)	Not Permitted	Not Permitted	😊
01.1.1.2	Buttermilk (plain)	Not Permitted	Not Permitted	😊
01.1.2.0	DAIRY-BASED DRINKS, FLAVOURED AND/OR FERMENTED (e.g., CHOCOLATE MILK, COCOA, EGGNOG, DRINKING YOGHURT, WHEY-BASED DRINKS)	150	GMP	⚠
01.2.0.0	Fermented and renneted milk products (plain), excluding food category 01.1.2 (dairy-based drinks)	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠
01.2.1.0	FERMENTED MILKS (PLAIN)	150	Not Permitted	⚠
01.2.1.1	Fermented milks (plain), not heat-treated after fermentation	Not Permitted	Not Permitted	😊
01.2.1.2	Fermented milks (plain), heat-treated after fermentation	Not Permitted	Not Permitted	😊
01.2.2.0	RENNETED MILK (PLAIN)	Not Permitted	Not Permitted	😊
01.3.0.0	Condensed milk and analogues (plain)	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠
01.3.1.0	CONDENSED MILK (PLAIN)	Not Permitted	Not Permitted	😊
01.3.2.0	BEVERAGE WHITENERS	Not Permitted	Product Is Not Defined Under The Food Regulations, But Colours May Be Allowed If Use Is Justified.	⚠
01.4.0.0	Cream (plain) and the like	Not Permitted	Not Permitted Unless Otherwise Specified.	⚠

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ASEAN Food Safety Standards Database

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http://www.aseanfssdatabase.com/report_harmonise.php

Comparison Listing by Additive
Additive Type: Sweeteners
Substance Name: Acesulfame-K

Back [Export to Excel](#)

Food Cat Nos.	Food Description	GSFA	Singapore	Malaysia	Brunei Darussalam	Thailand	Indonesia	Philippines	Vietnam	Laos	Cambodia	Myanmar
01.0.0.0	DAIRY PRODUCTS AND ANALOGUES, EXCLUDING PRODUCTS OF FOOD CATEGORY 02.0	Not Permitted	⊕	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.1.0.0	Milk and dairy-based drinks	Not Permitted	⊕	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.1.1.0	MILK AND BUTTERMILK (PLAIN)	Not Permitted	⊕	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.1.1.1	Milk (plain)	Not Permitted	☺	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.1.1.2	Buttermilk (plain)	Not Permitted	☺	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.1.2.0	DAIRY-BASED DRINKS, FLAVOURED AND/OR FERMENTED (e.g., CHOCOLATE MILK, COCOA, EGGNOG, DRINKING YOGHURT, WHEY-BASED DRINKS)	500	⊕	⊕	⊕	⊕	☺	☺	☺	⊕	⊕	☺
01.2.0.0	Fermented and renneted milk products (plain), excluding food category 01.1.2 (dairy-based drinks)	GMP	⊕	⊕	⊕	⊕	⊕	☺	☺	⊕	⊕	☺
01.2.1.0	FERMENTED MILKS (PLAIN)	Not Permitted	⊕	☺	☺	☺	☺	☺	☺	⊕	⊕	☺
01.2.1.1	Fermented milks (plain), not heat-treated after fermentation	Not Permitted	⊕	☺	☺	☺	☺	☺	☺	⊕	⊕	☺

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Plans and Next Step

- **To continue updating the database on coloring, sweeteners, and preservatives, and plan to add new food additives mentioned below**
 - Antioxidants
 - Stabilizers
 - Emulsifiers
 - Thickeners
 - Acidity regulators
- **To extend the database with contaminants in food?**



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Thank you
ありがとうございます
谢谢
감사합니다