



**INTERNATIONAL STANDARDS FOR
PHYTOSANITARY MEASURES**

ISPM No. 32

***CATEGORIZATION OF COMMODITIES
ACCORDING TO THEIR PEST RISK***

(2009)

CONTENTS

INTRODUCTION

SCOPE

REFERENCES

DEFINITIONS

OUTLINE OF REQUIREMENTS

BACKGROUND

REQUIREMENTS

1. Elements of Categorization of Commodities according to their Pest Risk

1.1 Method and degree of processing before export

1.2 Intended use of the commodity

2. Commodity Categories

ANNEX 1

Methods of commercial processing with resultant commodities that do not remain capable of being infested with quarantine pests

ANNEX 2

Methods of commercial processing with resultant commodities that remain capable of being infested with quarantine pests

APPENDIX 1

Flow chart illustrating categorization of commodities according to their pest risk

APPENDIX 2

Illustrating examples for commodities falling under category 1

INTRODUCTION

SCOPE

This standard provides criteria for National Plant Protection Organizations (NPPOs) of importing countries on how to categorize commodities according to their pest risk when considering import requirements. This categorization should help in identifying whether further pest risk analysis is required and if phytosanitary certification is needed.

The first stage of categorization is based on whether the commodity has been processed and, if so, the method and degree of processing to which the commodity has been subjected before export. The second stage of categorization of commodities is based on their intended use after import.

Contaminating pests or storage pests that may become associated with the commodity after processing are not considered in this standard.

REFERENCES

- Glossary of phytosanitary terms*, 2008. ISPM No. 5, FAO, Rome.
- Guidelines for a phytosanitary import regulatory system*, 2004. ISPM No. 20, FAO, Rome.
- Guidelines for inspection*, 2005. ISPM No. 23, FAO, Rome.
- Guidelines for phytosanitary certificates*, 2001. ISPM No. 12, FAO, Rome.
- Guidelines for regulating wood packaging material in international trade*, 2002. ISPM No. 15, FAO, Rome.
- International Plant Protection Convention*, 1997. FAO, Rome.
- Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*, 2004. ISPM No. 11, FAO, Rome.
- Pest risk analysis for regulated non-quarantine pests*, 2004. ISPM No. 21, FAO, Rome.
- Regulated non-quarantine pests: concept and application*, 2002. ISPM No. 16, FAO, Rome.

DEFINITIONS

Definitions of phytosanitary terms used in the present standard can be found in ISPM No. 5 (*Glossary of phytosanitary terms*, 2008).

OUTLINE OF REQUIREMENTS

The concept of categorization of commodities according to their pest risk takes into account whether the product has been processed, and if so, the method and degree of processing to which it has been subjected and the commodity's intended use and the consequent potential for the introduction and spread of regulated pests.

This allows pest risks associated with specific commodities to be assigned to categories. The objective of such categorization is to provide importing countries with criteria to better identify the need for a pathway-initiated pest risk analysis (PRA) and to facilitate the decision-making process regarding the possible establishment of import requirements.

Four categories are identified, which group commodities according to their level of pest risk (two for processed commodities, two for unprocessed commodities). Lists of the methods of processing and the associated resultant commodities are provided.

BACKGROUND

As a result of the method of processing to which some commodities moving in international trade have been subjected, the probability of entry of pests has been removed and so should not be regulated (i.e. phytosanitary measures and phytosanitary certificates are not required). Other commodities, after processing, may still present a pest risk and so may be subject to appropriate phytosanitary measures.

Some intended uses of commodities (e.g. planting) result in a much higher probability of introducing pests than others (e.g. processing) (further information is contained in ISPM No. 11: *Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*, 2004, section 2.2.1.5).

The concept of categorization of commodities according to their pest risk firstly takes into account if the commodity is processed or not and if so, the effect of the method and degree of processing to which a commodity has been subjected. Secondly, it takes into account the intended use and consequent potential as a pathway for introduction of regulated pests.

The objective of this standard is to categorize commodities according to their pest risk to provide National Plant Protection Organizations (NPPOs) of importing countries with criteria to identify more accurately whether there is a need for a pathway-initiated PRA and facilitate the decision-making process.

Article VI.1b of the IPPC states: “Contracting parties may require phytosanitary measures for quarantine pests and regulated non-quarantine pests, provided that such measures are ... limited to what is necessary to protect plant health and/or safeguard the intended use ...” This standard is based on the concepts of intended use of a commodity and the method and degree of its processing, which are also addressed in other ISPMs as outlined below.

Method and degree of processing:

- ISPM No. 12 (*Guidelines for phytosanitary certificates*, 2001), section 1.1, states: “Importing countries should only require phytosanitary certificates for regulated articles. ...
“Phytosanitary certificates may also be used for certain plant products that have been processed where such products, by their nature or that of their processing, have a potential for introducing regulated pests (e.g. wood, cotton). ...
“Importing countries should not require phytosanitary certificates for plant products that have been processed in such a way that they have no potential for introducing regulated pests, or for other articles that do not require phytosanitary measures.”
- ISPM No. 15 (*Guidelines for regulating wood packaging material in international trade*, 2002), section 2, states: “Wood packaging made wholly of wood-based products such as plywood, particle board, oriented strand board or veneer that have been created using glue, heat and pressure, or a combination thereof, should be considered sufficiently processed to have eliminated the risk associated with the raw wood. It is unlikely to be infested by raw wood pests during its use and therefore should not be regulated for these pests.”
- ISPM No. 23 (*Guidelines for inspection*, 2005), section 2.3.2, states: “Inspection can be used to verify the compliance with some phytosanitary requirements.” Examples include degree of processing.

Intended use:

- ISPM No. 11 (*Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*, 2004), sections 2.2.1.5 and 2.2.3. When analysing the probabilities of transfer of pests to a suitable host and of their spread after establishment, one of the factors to be considered is the intended use of the commodity.
- ISPM No. 12 (*Guidelines for phytosanitary certificates*, 2001), section 2.1. Different phytosanitary requirements may apply to the different intended end uses as indicated on the phytosanitary certificate.
- ISPM No. 16 (*Regulated non-quarantine pests: concept and application*, 2002), section 4.2. Risk of economically unacceptable impact varies with different pests, commodities and intended use.
- ISPM No. 21 (*Pest risk analysis for regulated non-quarantine pests*, 2004), which uses extensively the concept of intended use.

Method and degree of processing together with intended use:

- ISPM No. 20 (*Guidelines for a phytosanitary import regulatory system*, 2004), section 5.1.4, indicates that PRA may be done on a specific pest or on all the pests associated with a particular pathway (e.g. a commodity). A commodity may be classified by its degree of processing and/or its intended use.
- ISPM No. 23 (*Guidelines for inspection*, 2005), section 1.5. One of the factors to decide the use of inspection as a phytosanitary measure is the commodity type and intended use.

REQUIREMENTS

The use of the categories by NPPOs in determining any phytosanitary regulations should take into account, in particular, the principles of technical justification, pest risk analysis, managed risk, minimal impact, harmonization and sovereignty.

When the import requirements for a commodity need to be determined, the importing country may categorize the commodity according to its pest risk. Such categorization may be used to distinguish between groups of commodities for which further analysis is required from those that do not have the potential to introduce and spread regulated pests. In order to categorize the commodity, the following should be considered:

- method and degree of processing
- intended use of the commodity.

Having evaluated the method and degree of processing taking into account the intended use, the NPPO of the importing country makes a decision on the import requirements for the commodity.

This standard does not apply to cases of deviation from intended use after import (e.g. grain for milling used as seed for sowing).

1. Elements of Categorization of Commodities according to their Pest Risk

To identify a commodity's associated pest risk, the method and degree of processing to which a commodity has been subjected should be considered. The method and degree of processing, by itself, could significantly change the nature of the commodity, so that it does not remain capable of being infested with pests. Such a commodity should not be required by an NPPO of an importing country to be accompanied by a phytosanitary certificate¹.

However, if, after processing, a commodity may remain capable of being infested with pests, the intended use should then be considered.

1.1 Method and degree of processing before export

The primary objective of the processes addressed in this standard is to modify a commodity for other than phytosanitary purposes, but processing may also have an effect on any associated pest, and hence affect the potential of the commodity to be infested with quarantine pests.

In order to categorize a given commodity, NPPOs of the importing countries may require information on the method of processing undertaken from NPPOs of exporting countries. In some cases it is also necessary to know the degree of processing (e.g. temperature and heating duration) that affects the physical or chemical properties of the commodity.

¹ The presence of contaminating pests, as defined in ISPM No. 5 (*Glossary of phytosanitary terms*, 2008), or infestation by other pests that may become associated with the commodity after processing (e.g. storage pests) is not considered in the pest risk categorization process outlined in this standard. However, it is important to note that the methods of processing described in this standard will, in most cases, render the commodity free of pests at the time of processing, but that some such commodities may have the capacity to become subsequently contaminated or infested. Common contaminating pests may be detected during inspection.

Based on the method and degree of processing, commodities can be broadly divided into three types as follows:

- processed to the point where the commodity does not remain capable of being infested with quarantine pests
- processed to a point where the commodity remains capable of being infested with quarantine pests
- not processed.

If an assessment of the method and degree of processing concludes that a commodity does not remain capable of being infested with quarantine pests, there is no need to consider intended use and the commodity should not be regulated. However, if an assessment of the method and degree of processing concludes that a commodity remains capable of being infested with quarantine pests, the intended use should then be considered.

For non-processed commodities the intended use should always be considered.

1.2 Intended use of the commodity

Intended use is defined as the declared purpose for which plants, plant products or other articles are imported, produced or used (ISPM No. 5: *Glossary of phytosanitary terms*, 2009). The intended use of a commodity may be for:

- planting
- consumption and other uses (e.g. crafts, decorative products, cut flowers)
- processing.

The intended use may affect a commodity's pest risk, as some intended uses may allow for the establishment or spread of regulated pests. Some intended uses of the commodity (e.g. planting) are associated with a higher probability of a regulated pest establishing than others (e.g. processing). This may result in the application of different phytosanitary measures for a commodity based on its intended use (e.g. soybean seed for sowing and soybean grain for human consumption). Any phytosanitary measures applied should be proportional to the pest risk identified.

2. Commodity Categories

NPPOs may categorize a commodity by taking into account if it has been processed or not, the method and degree of processing and where appropriate the intended use.

Each commodity category is described below, along with guidance on the need for phytosanitary measures.

The analytical process outlined in this ISPM is illustrated in the flow chart of Appendix 1.

Category 1. Commodities have been processed to the point where they do not remain capable of being infested with quarantine pests. Hence, no phytosanitary measures should be required and such a commodity should not be deemed to require phytosanitary certification with respect to pests that may have been present in the commodity before the process. Annex 1 provides examples of processes and the resultant commodities that can meet the criteria for category 1. Furthermore, Appendix 2 provides some illustrative examples of commodities meeting the criteria for category 1.

Category 2. Commodities have been processed but remain capable of being infested with some quarantine pests. The intended use may be, for example, consumption or further processing. The NPPO of the importing country may determine that a PRA is necessary. Annex 2 provides examples of processes and the resultant commodities that can meet the criteria for category 2.

Although commodities in category 2 have been processed, the processing method may not completely eliminate all quarantine pests. If it is determined that the method and degree of processing do not eliminate the pest risk of quarantine pests, consideration should then be given to the intended use of the commodity in order to evaluate the probability of establishment and spread of the quarantine pests. In this case, a PRA may be needed to determine this.

To facilitate the categorization, exporting countries should, on request, provide detailed information on method or degree of processing (such as temperature, exposure time, size of particles) in order to assist importing countries in determining to which category the commodity should be assigned.

In cases where the evaluation of the effect of the method and degree of processing has determined that the processed commodity presents no pest risk and therefore should not be subject to phytosanitary measures, the commodity should be reclassified into category 1.

Category 3. Commodities have not been processed and the intended use is for a purpose other than propagation, for example, consumption or processing. PRA is necessary to identify the pest risks related to this pathway.

Examples of commodities in this category include some fresh fruits and vegetables for consumption and cut flowers.

Because commodities in categories 2 and 3 have the potential to introduce and spread quarantine pests, determining phytosanitary measures may be required based on the result of a PRA. The phytosanitary measures determined through a PRA may differ depending on the intended use of the commodity (e.g. consumption or processing).

Category 4. Commodities have not been processed and the intended use is planting. PRA is necessary to identify the pest risks related to this pathway.

Examples of commodities in this category include propagative material (e.g. cuttings, seeds, seed potatoes, plants in vitro, micropropagative plant material and other plants to be planted).

Because commodities in this category 4 are not processed and their intended use is for propagation or planting, their potential to introduce or spread regulated pests is higher than that for other intended uses.

ANNEX 1

**METHODS OF COMMERCIAL PROCESSING WITH RESULTANT COMMODITIES THAT
DO NOT REMAIN CAPABLE OF BEING INFESTED WITH QUARANTINE PESTS**

COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
Carbonization	Anoxic combustion of an organic material to charcoal	Charcoal	
Cooking (boiling, heating, microwaving, including rice parboiling)	Preparing food items for consumption by heating, primarily transforming the physical structure of items	Cooked items	Frequently involves chemically transforming a food, thus changing its flavour, texture, appearance, or nutritional properties
Dyeing	Colouring of textile fibres and other materials by which the colour becomes an integral part of the fibre or material under the influence of pH and temperature changes plus interaction with chemical products	Dyed vegetable fibres and textiles	
Extraction	Physical or chemical process to obtain specific components from plant-based raw materials, usually through mass-transfer operations	Oils, alcohol, essences, sugar	Normally done under high temperature conditions
Fermentation	Anaerobic or anoxic process changing food/plant material chemically, often involving micro-organisms (bacteria, moulds or yeasts) and e.g. converting sugars to alcohol or organic acids	Wines, liquors, beer and other alcoholic beverages, fermented vegetables	May be combined with pasteurization
Malting	A series of actions allowing the germination of cereal seeds to develop enzymatic activity to digest starchy materials into sugars and cessation of enzymatic activity by heating	Malted barley	
Multi-method processing	A combination of multiple types of processing such as heating, high pressure.	Plywood, particle board, wafer board	
Pasteurization	Thermal processing in order to kill undesirable or harmful micro-organisms	Pasteurized juices, alcoholic beverages (beer, wine)	Often combined with fermentation and followed by refrigeration (at 4 °C) and proper packaging and handling. Process time and temperature depends on type of product.
Preservation in liquid	Process of preserving plant material in a suitable liquid medium (e.g. in syrup, brine, oil, vinegar or alcohol) of a particular pH, salinity, anaerobic or osmotic state	Preserved fruits, vegetables, nuts, tubers, bulbs	Proper conditions of pH, salinity, etc. must be maintained

COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
Pureeing (including blending)	Making homogenized and spreadable fruit and/or vegetable tissues, e.g. by high-speed mixing, screening through a sieve or using a blender	Pureed items (fruits, vegetables)	Normally combined with pulping of fruits or vegetables and methods to preserve the puree (e.g. pasteurization and packing)
Roasting	Process of drying and browning foods by exposure to dry heat	Roasted peanuts, coffee and nuts	
Sterilization	Process of applying heat (vapours, dry heat or boiling water), irradiation or chemical treatments in order to destroy micro-organisms	Sterilized substrates, juices	Sterilization may not change the condition of the commodity in an evident way, but eliminates micro-organisms
Sterilization (industrial)	Thermal processing of foods that leads to shelf-stable products in containers by destruction of all pathogenic, toxin-forming and spoilage organisms	Canned vegetables, soups; UHT (ultra-high temperature) juices	Process time and temperature for canned products depends on type of product, treatment and geometry of container. Aseptic processing and packaging involves industrial sterilization of a flowing product and then packaging in sterile environment and package.
Sugar infusing	Action of coating and infusing fruits with sugar	Crystallized fruit, fruit infused with sugar, nuts coated with sugar	Usually combined with pulping, boiling, drying
Tenderizing	Process to rehydrate dried or dehydrated items by the application of steam under pressure or submerging in hot water	Tenderized fruits	Usually applied to a dried commodity. Can be combined with sugar infusing.

ANNEX 2

**METHODS OF COMMERCIAL PROCESSING WITH RESULTANT COMMODITIES THAT
REMAIN CAPABLE OF BEING INFESTED WITH QUARANTINE PESTS**

COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
Chipping (of wood)	Wood reduced to small pieces	Chipped wood	The probability of infestation is related to the species of wood, the presence of bark, and the size of the chips
Chopping	To cut into pieces	Chopped fruit, nuts, grains, vegetables	
Crushing	Breaking plant material into pieces by application of mechanical force	Herbs, nuts	Usually applied to dried products
Drying/ dehydration (of fruits and vegetables)	Removal of moisture for preservation, or to decrease weight or volume	Dehydrated fruit, vegetables	
Painting (including lacquering, varnishing)	To coat with paint	Painted wood and canes, fibres	
Peeling and shelling	Removal of the outer or epidermal tissues or pods	Peeled fruits, vegetables, grains, nuts	
Polishing (of grain and beans)	To make smooth and shiny by rubbing or chemical action removing the outer layers from grains	Polished rice and cocoa beans	

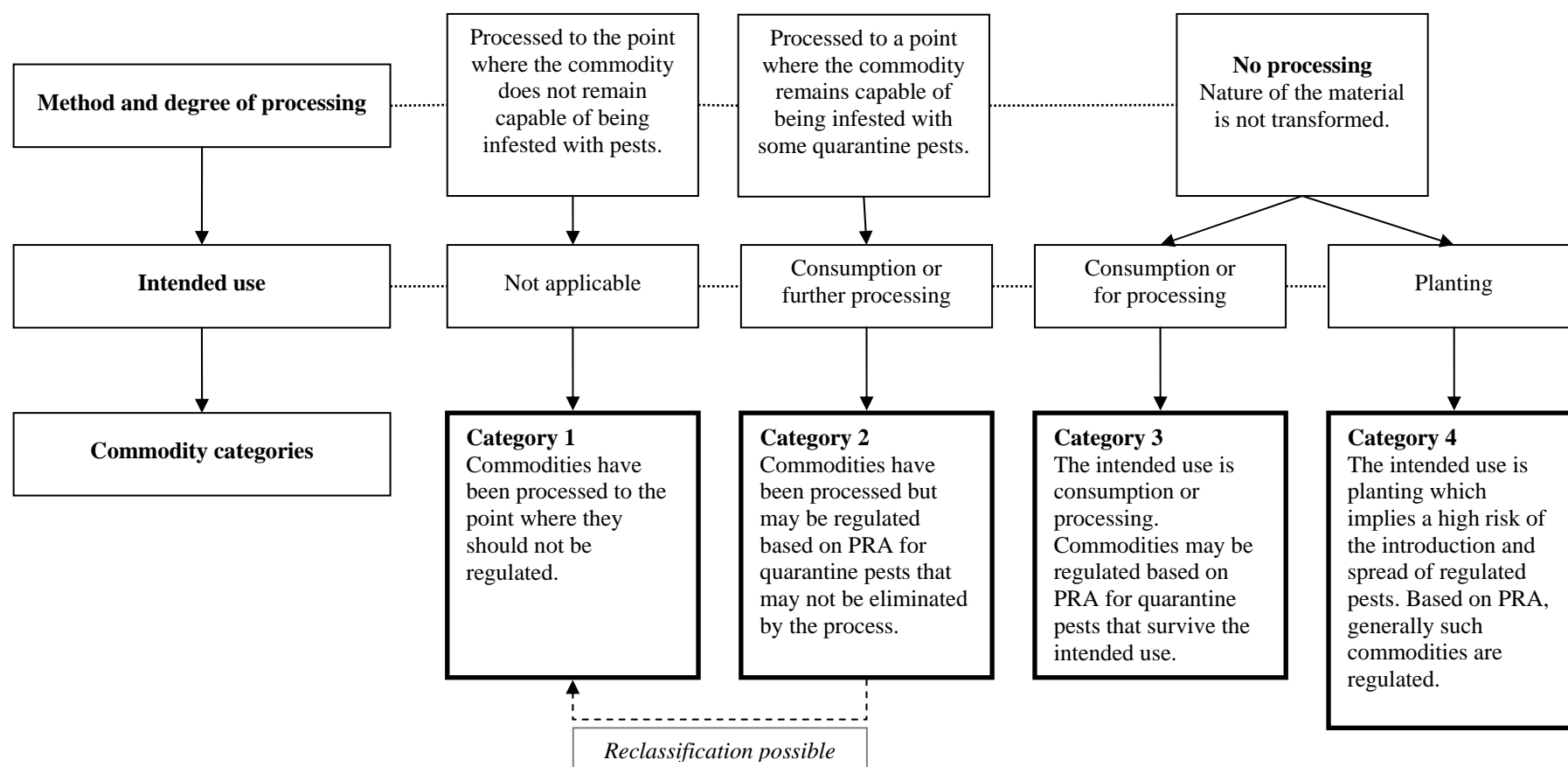
COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
Post-harvest handling (of fruits and vegetables)	Operations such as grading, sorting, washing or brushing, and/or waxing fruits and vegetables	Graded, sorted, washed, or brushed and/or waxed fruit and vegetables	Usually carried out in packing houses
Quick freezing	Cooling quickly, ensuring that the temperature range of maximum ice crystallization is passed as quickly as possible to preserve the quality of fruits and vegetables	Frozen fruits and vegetables	<p>Recommended international code of practice for the processing and handling of quick frozen foods, 1976 CAC/RCP 8-1976 (Rev 3, 2008), Codex Alimentarius, FAO, Rome, states that “food which has been subjected to a quick freezing process, and maintained at -18 °C or colder at all points in the cold chain, subject to permitted temperature tolerance.”</p> <p>Quick freezing of fruits and vegetables kills insects in particular. Frozen fruits and vegetables are prepared for direct consumption and will decay quickly after thawing. Therefore the pest risks associated with such products is considered very low.²</p>

² It is recommended that countries do not regulate frozen fruits and vegetables.

APPENDIX 1

This appendix is for reference purposes only and is not a prescriptive part of the standard.

FLOW CHART ILLUSTRATING CATEGORIZATION OF COMMODITIES ACCORDING TO THEIR PEST RISK



APPENDIX 2

This appendix is for reference purposes only and is not a prescriptive part of the standard.

EXAMPLES OF COMMODITIES WITHIN CATEGORY 1

Extracts	Fibres	Foodstuffs ready for consumption	Fruits and vegetables	Grain and oilseed products	Liquids	Sugars	Wood products	Other
<ul style="list-style-type: none"> - Extracts (e.g. vanilla) - Fruit pectin - Guar bean derivative - Hop extract - Hydrolyzed vegetable protein - Margarine - Mineral plant extracts - Soybean lecithin - Starch (potato, wheat, maize, cassava) - Yeast extract 	<ul style="list-style-type: none"> - Cardboard - Cellulose cotton piece goods - Cotton cloth - Cotton lint - Paper - Plant fibre cloth and threads - Plant fibre for industrial production - Semi-processed plant fibres and related materials (e.g. sisal, flax, jute, sugarcane, bamboo, juncus, vimen, raphia) 	<ul style="list-style-type: none"> - Cacao powder - Cakes and biscuits - Catsup (ketchup) - Chocolate - Condiments - Dessert powder - Dips - Food colouring - Food flavouring - Food seasoning - Food supplements - French fries (frozen) - Frozen food - Fruit sauces - Jelly (jam, marmalade) - Mashed potatoes (dried) - Nut butter - Pastes (e.g. cocoa, quince, peanut butter) - Pie filling - Relish - Salad dressing - Sandwich spread - Sauce, sauce mix - Seasoning, seasoning mix - Soup (dried) - Vegetable flavouring 	<ul style="list-style-type: none"> - Candied - Canned - Concentrates - Freeze-dried - Fruit pie filling - Glaceed - Hydrolyzed - In syrup - Pickled - Pomace - Precooked or cooked - Pulped 	<ul style="list-style-type: none"> - Baby cereal - Bakery mixes - Bread products - Breakfast cereals - Bulgur wheat (parboiled, dried and ground) - Cassava products (tapioca, fermented and/or fried derivatives for food) - Cooked cereal - Corn chip pellets - Flour and industrial products made of cereal or oilseeds (and leguminous derivatives) for food and feed - Hominy, corn grits - Rice (parboiled) - corn soy blend, soy flour whey, soy meal, soy pellets, soy proteins 	<ul style="list-style-type: none"> - Alcohols - Coconut water (packed) - Corn soy milk - Fruit drink juices (fruit and vegetable including concentrates, frozen, nectar) - Oils - Soft drinks - Soup - Vinegar - Wood turpentine 	<ul style="list-style-type: none"> - Beet sugar - Corn starch glucose - Corn syrup - Dextrine - Dextrose - Dextrose hydrate - Fructose - Granulated (sugar) - Glucose - Maltose - Maple sugar - Maple syrup - Molasses - Sucrose - Sugar - Sweetener - Syrup - Treacle 	<ul style="list-style-type: none"> - Charcoal - Ice lolly sticks - Laminated beams - Match sticks - Plasterboard - Plywood boxes - Toothpicks - Wood pulp - Wood resin 	<ul style="list-style-type: none"> - Brewer's yeast - Brewer's malt - Coffee (roasted) - Dietary formula - Enzymes - Gum turpentine - Humate - Rubber (crepe, gums) - Scents - Shellac - Tea - Vitamins