NATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

Categorization of commodities according to their pest risk
2013

(This standard is approved by (the NPPO and) the Quarantine Committee of Nepal, chaired by the secretary of the Ministry of Agriculture Development on 1st December 2013 and, is notified to the WTO member states)

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Abbreviations (frequently used in the standard)

APPPC	–	Asia Pacific Plant Protection Commission
IPPC	–	International Plant Protection Convention
ISPM	–	International Standard for Phytosanitary Measures
NPPO	–	National Plant Protection Organization
NPQP	–	National Plant Quarantine Programme
NSPM	–	National Standards for Phytosanitary Measures
PC	–	Phytosanitary Certificate
PP	–	Plant Protection
PRA	–	Pest Risk Analysis
PPD	–	Plant Protection Directorate
RPPO	–	Regional Plant Protection Organization
RSPM	–	Regional Standard for Phytosanitary Measures
SPS	–	Sanitary and Phytosanitary
WTO	–	World trade organization

1. Introduction

1.1 Scope

This standard provides guidelines for National plant protection organization (NPPO) of Nepal to reduce the risk of pests moving with imported and exported commodities according to their categorization. This standard helps in identifying whether any phytosanitary measures have to be applied and if further pest risk analysis is required. NSPM preparation is based on guidelines and recommendations developed within the framework of the IPPC. This standard also adopted the principles, recommendations and format of ISPM to achieve international harmonization of phytosanitary measures with the aim to facilitate trade.

Categorization of commodities is based on:

- whether the product has been processed, and if so, the method and degree of processing to which it has been subjected before export and,
- the commodity's intended use after import and the consequent potential for the introduction and spread of regulated pests.

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

1.2 References

IPPC. 1997. *International Plant Protection Convention*. Rome, IPPC, FAO.

ISPM 5. *Glossary of phytosanitary terms*. Rome, IPPC, FAO.

ISPM 11. 2004. *Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*. Rome, IPPC, FAO.

ISPM 12. 2001. *Guidelines for phytosanitary certificates*. Rome, IPPC, FAO.

ISPM 15. 2002. *Guidelines for regulating wood packaging material in international trade*. Rome, IPPC, FAO. [revised; now ISPM 15:2009]

ISPM 16. 2002. *Regulated non-quarantine pests: concept and application*. Rome, IPPC, FAO.

ISPM 20. 2004. *Guidelines for a phytosanitary import regulatory system*. Rome, IPPC, FAO.

ISPM 21. 2004. *Pest risk analysis for regulated non-quarantine pests*. Rome, IPPC, FAO.

ISPM 23. 2005. *Guidelines for inspection*. Rome, IPPC, FAO.

ISPM 32. 2009. *Categorization of Commodities according to their pest risk*. Rome, IPPC, FAO.

NPQP. 2005. *Operations Manual for Import and Export Certification.* FAO/TCP/NEP/2903 A

Plant Protection Act, 2007, NPQP, PPD, Nepal

Plant Protection Regulation, 2010. NPQP, PPD, Nepal

WTO. 1994. *Agreement on the Application of Sanitary and Phytosanitary Measures*. Geneva, World Trade Organization.

1.3 Definitions

Definitions of phytosanitary terms used in the present standard can be found in ISPM 5 (*Glossary of phytosanitary terms*) and Plant Protection Act and Regulation.

1.4 Outline of requirements

The risks posed by exotic pests associated with traded commodities are increasing due to global trade. The standard intends to facilitate the safe trade as it a well understood that some types of commodities typically pose greater risks than other types of commodities.

Commodities can be a pathway for the pests introduction and establishment thus the categorization of commodities is to provide NPPO of Nepal for identifying the need for a pathway initiated Pest Risk Analysis (PRA) and to apply the appropriate measures to manage those risks.

The commodities are divided into four categories as per their level of pest risks.

Following annexes and appendixes are included in this standard.

Annex 1
Methods of commercial processing with resultant commodities that do not remain capable of being infested with pests
Annex 2
Methods of commercial processing with resultant commodities that remains capable of being infested with quarantine pests
Appendix 1
Flow chart illustrating categorization of commodities according to their pest risk
Appendix 2
Illustrating examples of commodities falling under category 1
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2. Background

Commodity products moving in international trade that have been subjected to process are considered to be of lower risk as the process often eliminates or kills the pest. Thus these commodities need not to be regulated (e.g. oils, fiber, canned or processed vegetables, etc.). In such commodities phytosanitary measures & phytosanitary certificates are not required, whereas the commodities after processing if pests are not eliminated then it has to be subjected to the appropriate phytosanitary measures (e.g. chipping of wood, chopping of nuts, fruits, post-harvest handling , freezing, etc.).

In general, commodities for which the intended use is consumption (e.g. fresh fruits & vegetables, some grains, etc.) are considered to have a lower risk than those which are intended for planting (e.g. plants & seeds for planting). Commodities like seeds, germplasm & plants intended for planting often have a higher risk than other categories.

The objective of this standard is to categorize commodities according to their level of pest risk. The National Plant Protection Organization (NPPO) of Nepal will decide whether there is a need of a

pathway-initiated PRA and facilitate the decision making process.

In both condition, WTO & IPPC member countries are obligated to base their standard measures on international standard or justify measures through risk analysis. This standard is based on ISPM No. 32 "Categorization of Commodities according to their pest risk" that provides additional guidelines on the categorization of commodities according their pest risk requirements.

Provisions of the IPPC regarding Categorization of Commodities
Article VI.1(b) 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 and can be technically justified by the contracting party concerned ". 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 12:2001, 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 15:2002, 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 23:2005, 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 11:2004, sections 2.2.1.5 and 2.2.3. When analyzing 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 12:2001, section 2.1. Different phytosanitary requirements may apply to the different intended end uses as indicated on the phytosanitary certificate.

- ISPM 16:2002, section 4.2. Risk of economically unacceptable impact varies with different pests, commodities and intended use.

- ISPM 21:2004, which uses extensively the concept of intended use.

Method and degree of processing together with intended use:

- ISPM 20:2004, 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 23:2005, section 1.5. One of the factors to decide the use of inspection as a phytosanitary measure is the commodity type and intended use

3. Requirements

The NPPO has to categorize the commodity according to its pest risk. For this, NPPO may request detail information on method and degree of processing (e.g. temperature, exposure time, size of commodity) to determine the category to which the commodity should be assigned and if phytosanitary measures may be required. NPPO should consider the intended use of the commodity & the level of processing prior to establishing phytosanitary measures for specific commodities. The phytosanitary requirements should take into account, in particular, the principles of technical justification, pest risk analysis, managed risk, minimal impact, harmonization and sovereignty.

Having evaluated the method and degree of processing taking into account the intended use, the NPPO should make 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).

3.1 Elements of categorization of commodities according to their pest risk

The method and degree of processing significantly changes the nature of the commodity reducing the capable of pest infestation. In such cases, the commodity does not require phytosanitary measures or phytosanitary certificate by NPPO.

If after processing a commodity may be capable of harboring a pest infestation, then the intended use has to be considered.

3. 1.1 Method and degree of processing before export

NPPO of Nepal may request detailed information from NPPOs of exporting countries on method and degree of processing (e.g. temperature, exposure time, size of commodity) to determine the commodity's category associated with pest risk.

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.

3.1.2 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 5). The intended use of a commodity may be for:

- planting: (e.g. cuttings, rooted plants, bulbs, seeds)
- consumption and other uses (e.g. crafts, decorative products, cut flowers):
- processing

The risk associated with a commodity imported from the same country of origin may vary depending on its intended use. For example, peas and beans imported for planting may carry a much higher probability of establishment of associated regulated pests than those imported for consumption. 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). Table1 shows the relationship between intended use and probability of establishment or spread of regulated pests.

Table 1. Intended use and probability of establishment of associated regulated pests in the importing country

Intended use	**Probability of establishment and spread**	**Phytosanitary action**
Plants for planting	high probability	-phytosanitary measures necessary
Consumption	medium/ low probability	-risk-based phytosanitary measures may be necessary
Processing	Medium /low probability	-intended use considered -risk-based phytosanitary measures may be necessary

4. Commodity categories

NPPO 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 in table, along with guidance on the need for phytosanitary measures.

Table 2 Categories of commodities

Category	**Degree of processing**	**Phytosanitary action**
Category 1	processed and not capable of being infested with Quarantine Pests (QPs)	- phytosanitary measures not required - phytosanitary certificate not required
Category 2	processed but capable of being infested with QPs	-risk-based phytosanitary measures may be required to determine - consideration should then be given to the intended use of the commodity
Category 3	unprocessed and for consumption or processing e.g. some fresh fruits and vegetables for consumption and cut flowers.	-risk-based phytosanitary measures required
Category 4	Unprocessed, for planting e.g. propagative material (e.g. cuttings, seeds, seed potatoes, plants in vitro, micropropagative plant material and other plants to be planted).	- risk-based phytosanitary measures required

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.

Annex 1 contd…

COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
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
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	
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

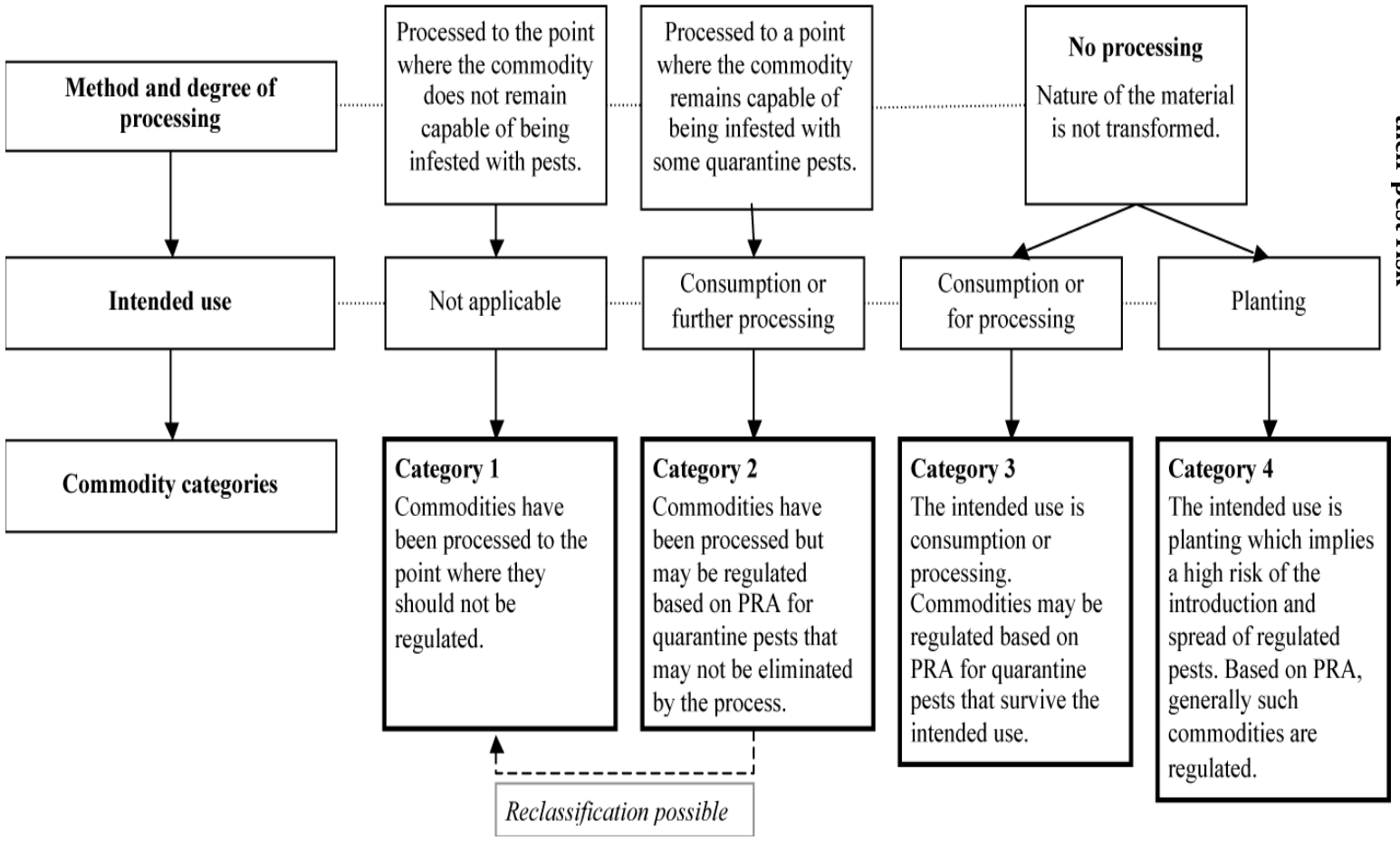
COMMERCIAL PROCESS	DESCRIPTION	EXAMPLE OF RESULTANT COMMODITY	ADDITIONAL INFORMATION
Quick freezing	Cooling quickly, ensuring that the temperature range of maximum ice crystallization is passed as quickly as possible to preserve the quality of fruits and vegetables	Frozen fruits and vegetables	Recommended 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 ºC or colder at all points in the cold chain, subject to permitted temperature tolerance." 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[1].

It is recommended not to regulate frozen fruits and vegetables.

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

Appendix 1: Flow chart illustrating categorization of commodities according to

CATEGORIZATION OF COMMODITIES ACCORDING TO THEIR PEST RISK



their pest risk

APPENDIX 2: EXAMPLES OF COMMODITIES WITHIN CAYEGORY 1								
Extracts	**Fibres**	**Foodstuffs ready for consumption**	**Fruits and vegetables**	**Grain and oilseed products**	**Liquids**	**Sugars**	**Wood products**	**Other**
– 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	– Cardboard – Cellulose cotton piece – Cotton cloth – Cotton lint – Paper – Plant fibre cloth and treads – Plant fibre for industrial production – Semi-processed plant fibres and related materials (e.g. sisal, flax, jute, sugarcane, bamboo, juncus, vimen, (raphia)	– 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	– Candied – Canned – Concentrates – Freeze-dried – Fruit pie filling – Glaceed – Hydrolyzed – In syrup – Pickled – Pomace – Precooked or cooked – Pulped	– 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 oilseed (and) leguminous derivatives) for food and feed – Hominy, corn grits – Rice (parboiled) – Corn soy blend, soy flour whey, soy meal, soy pellets, soy proteins	– Alcohols – Coconut water (packed) – Corn soy milk – Fruit drink juices (fruit and vegetable including concentrates, frozen, nectar) – Oils – Soft drinks – Soup – Vinegar – Wood turpentine	– 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	– Charcoal – Ice lolly sticks – Laminated beams – Match sticks – Plate board – Plywood boxes – Toothpicks – Wood pulp – Wood resin	– Brewer's yeast – Brewer's malt – Coffee (roasted) – Dietary formula – Enzymes – Gum turpentine – Humate – Rubber (crepe, gums) – Scents – Shellac – Tea – Vitamins

Appendix 3: Phytosanitary risk levels associated with imported commodities

The level of phytosanitary risk is measured by conducting an appropriate pest risk analysis by a team of expert designated for the purpose by the NPPO. This is carried out for the commodities which are of major concern for trade, and is regularly updated. The list of regulated pests comprising the quarantine pests and the regulated non quarantine pests needs to be notified by the NPPO. Even in the absence of a list of regulated pests inspectors may keep in mind the level of phytosanitary risk involved based on the nature of the commodity and the past experiences of interceptions made even elsewhere. The guidelines given below can be of some use.

Negligible to low risks : Commodities like flour for consumption, malt, manufactured/ painted wood, furniture, handicrafts etc, peat for growing substrate, dried fruits, nuts without husk, raisins, heat treated or kiln dried coniferous wood, etc

Medium to high risk : Non-certified small plants and cuttings, certified seeds/ plants/ cuttings, cut flowers and potted plants depending of country of origin, potato**,** fruits like apple, grapes, oranges for consumption, bulbs (onions etc), tubers and corms of ornamentals, unwashed root vegetables, nursery products, coniferous packing wood from pine wood nematode-countries, coniferous wood, debarked coniferous wood from Pine wood nematode countries, coniferous wood with bark, soil from the field.

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