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Sanitary and phytosanitary measures: an Australian perspective

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Introduction

Sanitary and Phytosanitary measures adopted by trading partners are designed to prevent the introduction and spread of pests of plants and plant products across international borders; however the interpretation and application of these measures often differ among trading partners.

The International Plant Protection Convention (IPPC) was ratified by Australia in 1952. All major grain importing and exporting countries are also members of the Convention. Its purpose is to secure common and effective action to prevent the introduction and spread of pests and diseases of plants and plant products in international trade and to promote measures for their control. The Articles of the Convention provide guidance on the responsibilities of the contracting parties to adopt legislative, technical and administrative measures to prevent the introduction and spread of pests. The International Standards for Phytosanitary Measures (ISPMs) provide guidelines and interpretive notes on the application of these measures by contracting parties. Why then, are there differences in the interpretation and application of these measures among trading partners?

One reason may be a change to the trading environment since the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The SPS Agreement

defined the rights and obligations of member of the World Trade Organisation (WTO) in the development and implementation of food standards and quarantine controls. Since the SPS Agreement there has been a rapid escalation of market access bids among trading partners and a significant increase in pest risk analyses and import risk assessments to accommodate these bids.

A further explanation perhaps lies within Article VII of the IPPC – requirements in relation to imports. Key points within this Article are that contracting parties have sovereign authority to regulate, in accordance with applicable international agreements, the entry of plants and plant products and other regulated articles, and may prescribe and adopt measures including inspection, treatment, and prohibition on importation. The measures must be technically justified, consistent with the pest risk involved, and represent the least restrictive measures available.

Each contracting party has a different disease and pest profile, and ‘sovereign authority’ to set their own level of protection (technically justified of course). Given this, it is not surprising that countries have differing views of pests and diseases and of measures to prevent introduction and spread of these pests.

Australia has a very conservative quarantine policy due to a natural environment that, compared to many other countries, is relatively free of many debilitating pests and diseases of

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humans, animals and plants. This privileged pest and disease status is of considerable benefit to Australia's export trade in terms of agricultural production and marketing and to the Australian community as a whole through reduction in the use of chemicals and the production of safe and wholesome foods.

Sanitary and phytosanitary measures are an indispensable element in the maintenance of this favourable pest and disease status and of the regulatory framework that governs trade between and within nations. It is important to Australia that due cognizance is taken by trading partners of Australia's obligations under IPPC.

Conversely governments of other nations require to be assured that Australian commodities will not carry pests and diseases in general, or pests and diseases specified in their quarantine legislation.

Australia uses a systems approach to underpin its export certification, with emphasis on hygiene and pest control at storage and handling facilities and inspection of product and transport units. ISPM 14 – the use of integrated measures in a systems approach for pest risk management – provides a blueprint for the promotion and use of such systems, and could be used more effectively both bilaterally and multilaterally among trading partners.

Trading environment

In the last fifteen (15) years, there have been a number of developments in world trade that have influenced trading nation's attitude towards the sanitary and phytosanitary status of imported and exported produce. These developments include:

- Conclusion of the Uruguay round of the General Agreement on Tariffs and Trade, which enhanced opportunities for international trade in agricultural commodities and increased trade expectations of exporting countries;

- The Agreement on the Application of Sanitary and Phytosanitary Measures, which defined the rights and obligations of members

of the World Trade Organisation (WTO) in the development and implementation of food standards and quarantine controls;

- Significant increases in demand for market access for agricultural commodities with a corresponding expectation of timely (and favourable) scientific risk assessments, pest risk analyses, and development of 'least trade restrictive' measures;

- Significant scientific advances in surveillance, diagnostics and identification procedures for plant pests and diseases;

- Increasing use of 'clean, green' marketing by food-exporting nations such as Australia as an international marketing tool, matched by 'fit for human consumption' certification demands by importing nations, in part reflecting increased consumer concern about food safety; and

- A significant increase in the volume of world trade and international passenger movements, placing increased pressure on border control measures intended to exclude exotic pests and diseases.

These developments have led to an increasing demand for assurances between importer and exporter that the traded commodity meets all quality parameters, including the overlay of government to government certification required to meet the sanitary and phytosanitary laws of the importing country.

Premises, product and transport units – a systems approach

A summary follows of Australia's systems approach that underpins its export legislation, and some examples whereby similar strategies are built into import conditions for grain and plant products.

Exports

Australia has legislation in place to ensure mandatory export inspection and certification of grain and fibre crops, with the objective of establishing a hygiene standard that will earn this

country a reputation as a reliable supplier, of high and consistent standard. This inspection and certification service is supplied by the Australian Government, through its agency, the Australian Quarantine and Inspection Service (AQIS), within the Department of Agriculture, Fisheries and Forestry (DAFF).

Whilst there are mandatory AQIS sampling and inspection procedures at the point of loading of export grain and fibre crops into transport units, growers, storage and handling companies and transport operators need to apply 'whole of chain' management incorporating best practice hygiene and pest control for the produce to meet the requirements of the legislation. As a result, the legislation:

- provides a systems approach to pest management ;
- protects public health; and
- meets the import country's quarantine requirements, in line with treaty obligations of the International Plant Protection Convention.

The Legislation covers registration of establishments, product standards, trade descriptions, export clearance, certification and inspection procedures. This provides a three stage approach to grain hygiene – premises, product and transport units. Prescribed grains are prohibited from export from Australia unless an inspection of the premises, product and transport unit has taken place. A summary of these measures follows.

Registration of Establishments

All premises used for storing, handling or inspecting prescribed grains and plant products, notably silos and terminals, must be registered. The conditions of registration include provision for cleanliness of the facility, pest control, freedom from insect and rodent pests, from harmful or undesirable contaminants. Operators must also maintain comprehensive records of grain and plant products received and loaded; and list hygiene and pest control measures, so that AQIS inspectors can monitor their effectiveness.

AQIS inspectors have authority to enter registered premises, at any time, to ensure

compliance with requirements laid down in the *Export Control Act*. Particular attention is paid to areas where infested residues may accumulate and spread infestations. Cell valves, conveyer belt ends, elevator boots, dust houses and dust extraction systems, silo precincts, silo cleanings and stevedoring equipment, are all potential sources of pest infestations.

Under the Act, an authorised officer may suspend operations, or, in extreme cases, de-register the premises, where operators continually fail to meet required standards of cleanliness.

Product Standards

General standards apply to prescribed grains. Samples taken from consignments must be free of live insects and rodents, be within prescribed tolerances for other contaminants, and be within prescribed tolerances for other contaminants such as:

- most *crotalaria* spp (rattlepod);
- *Datura* spp seeds (thornapple);
- *claviceps purpurea* (ergots of ryegrass and of the grain); and
- dead rodents and rodent dropping.

Specific standards may also apply where it is a phytosanitary requirement of the importing country. Such country standards may include freedom from snails, certain weed seeds, and contaminant seeds, which may be hosts of specific diseases.

Inspection of transport units

Before ships can be loaded with prescribed grain for export, they must be inspected by a marine underwriter surveyor, to certify that they are suitable to carry again. The surveyor focuses on conditions which could contaminate, wet or impart odours to the grain, such as mineral residues of a previous cargo, flaking rust, wet spots, insecure hatch covers and other structural damage likely to affect grain. A surveyor's certificate must be sighted by an AQIS inspector before a loading permit is issued.

Prior to issuing a loading permit, AQIS inspectors conduct an intensive inspection of the entire ship's structure, other than crew quarters,

to ensure there is no risk of cross infestation or contamination from residues of previous cargoes. Particular attention is paid to areas where infestable residues may pose a risk, such as deck beams and coamings, dunnage stores and ventilator shafts. In addition, some fittings may need to be removed for cleaning-out infestable residues.

Where inspectors find evidence of insects or rodents, the legislation sets down criteria for assessing the severity of infestations, and designate appropriate treatments. This involves either spraying with insecticides or fumigation with methyl bromide.

Shipping containers (container system units), intended for loading prescribed grains, are also inspected by AQIS staff to certify that the containers meet the required standards for loading. As with ships, containers must be in good condition and free of pests, residues and other contaminants that could adversely affect the grain.

Inspection of grain

There is a nil tolerance of live insect and rodent pests applied to all samples of export grain. This nil tolerance became policy following trade dissatisfaction with high levels of insect infestation in Australian cargoes in the late 1950's. It was introduced when wheat became subject to mandatory controls under the Exports (Grain) Regulations of 1963. At the same time, the insecticide malathion came on the market, making it both feasible and economical to store and ship grain free of insects.

The legislation details sampling and inspection procedures for prescribed grains and plant products, either in bulk or bagged, to be loaded into ships' holds, or into shipping containers.

Samples are sieved over a standard 1.70mm mesh, which allows the smaller particles, including insects, to pass through into the pan beneath, where they can be examined visually. The grain remaining above the screen is inspected for insect stages, and other contaminants. Automatic samplers, and mechanical sieves,

operate on a similar principle, and have proved to be very effective. The screen mesh size may be modified to suit particular grains and contaminants.

The sampling rate is 2.25 litres of grain per 33 tonnes (0.7 litres per 10 tonnes), irrespective of the type of grain, or where or how it is loaded. This rate was established when the Exports (Grain) Regulations were first introduced in 1963 and was considered a practical level that could be observed at all terminals using the manual sampling method universally employed at the time. Australia's rate of sampling is comparable to those used by other major exporting countries, and is more intensive than import inspection procedures used by plant quarantine services of major trading partners to ensure their plant health requirements are complied with.

Grain in bags is inspected, by examining the outside surfaces of the bags, and by sieving samples taken with a trier or spear. The legislation details the number of bags to be sampled, depending on the size of the consignment, and lays down rejection procedures for the whole or part of a consignment. Samples are generally taken at random, from at least every fifth bag, and only in larger bagged lots can part of a consignment be rejected.

Automatic samplers and sieves are installed at all export grain terminals, to enable efficient inspection of bulk grain streams, in circumstances where out loading capacity is in excess of 400 tonnes per hour. The samples are conveyed automatically to a central sampling room, where a single inspector can process more samples.

The main sampler in use is the diverter-type, which takes a transverse cut from the grain flow. Since it generally takes larger samples than are required by AQIS, a rotary sample-divider is needed to sub-sample (divide) the initial amount, before diverting excess grain back to the main stream.

For grain loaded in bulk into container system units, sample extraction systems must demonstrate equivalence with diverter type samplers. The systems must draw representative samples from the grain flow to the extent that

the equivalent amount to 2.25 litres is drawn from each 33 tonnes or part thereof.

Phytosanitary Certification

The legislation details the conditions for issuing phytosanitary certificates. The requirements are consistent with ISPM 12. Australian Phytosanitary Certificates comply with the model phytosanitary certificate as described in the new revised text of the IPPC. They certify that the plants, plant products or other regulated articles have been inspected and/or tested according to appropriate official procedures and are considered free from the quarantine pests specified by the importing contracting party and to conform to the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests. They are deemed practically free from other pests. However, there is no guidance set by the Convention to the level of inspection or testing required, beyond the requirement that any certificate issued shall be seen as a dependable document.

AQIS is concerned with phytosanitary requirements, and does not certify quality parameters. Moisture levels, protein content, or pesticide residue levels, for example, are the responsibility of the exporter, and certification can be obtained from commercial organizations.

AQIS is the only organisation in Australia authorised to issue phytosanitary certificates. Such certificates are not issued or intended for commercial usage. Although AQIS acknowledges that phytosanitary certificates are referred to in commercial transactions, exporters are strongly discouraged from agreeing to letters of credit that stipulate any endorsements on phytosanitary certificates.

Imports

For imports, Australia seeks certification and other documentary evidence that ‘whole of chain’ pest and disease mitigations (premises, produce and transport units) have occurred. The certification will be government to government and/or commercial depending on the nature of the certification required.

A typical import permit for grain for processing will require the following mitigations to occur in the country of origin.

- Certification from an approved third party certifier that; all transport units (railcars, trucks, barges) and the vessel prior to loading had been thoroughly cleaned of contamination with imported or local whole grain, stock feed or stockfeed ingredients, insect pests, and other infestable residues, soil, animal or avian remains, faeces or other extraneous contamination.

- An International Phytosanitary Certificate with appropriate additional declarations relevant to specific pests or diseases present in the country of origin. The additional declarations may state that the consignment has been found free from a particular disease based on the results of a test, or area or property freedom. A declaration that the consignment has been inspected and found apparently free from all species of the genus *Trogoderma* is also common.

- Certification from a third party certifier that the consignment contains a maximum of 1% of foreign material.

A typical import permit will also require an inspection by AQIS prior to discharge from the vessel. Currently grain for human consumption or for stockfeed may only be processed in the Metropolitan areas of the ports of entry.

Australia imports plant based stock feeds and stock feed ingredients such as soya bean meal. All plant based stock feeds, regardless of the country of origin are assessed against the Importation of Stockfeed and Stockfeed Ingredients – Finalised Risk Management Measures for Transmissible Spongiform Encephalopathies (TSE’s) policy document, and in conjunction with the Quarantine Requirements for the Importation into Australia of Processed Stock feeds and Stock feed Ingredients of Plant Origin policy document of 31 March 1999.

With the use of the risk matrix outlined in the TSE Policy, all stock feed manufacturing facilities are required to undergo a desk audit followed by a site inspection before an import permit is issued. When assessing plant based stockfeed applications a first tier assessment is

performed to see whether the commodity meets the basic criteria required by AQIS. Once it is confirmed that the product meets the requirements, detailed information is requested from the manufacturer in order to perform the desk audit. On completion of a successful desk audit the manufacturing facility and export pathway undergoes a site inspection.

As per the criteria specified in the TSE policy document, some stock feeds are required to undergo on-arrival random ruminant DNA testing on a sliding scale. In addition to the DNA testing some (manufactured) stock feeds undergo germination testing to check for viable weed seeds. All imported stock feed is subject to inspection on arrival and the integrity of the product and the packaging is checked. If during inspection the integrity of the product or packaging is questionable, the consignment may be subject to ruminant DNA testing.

As with grain imports, an import permit for stock feeds or stock feed ingredients will typically require:

- Certification from an approved third party certifier that; all transport units (railcars, trucks, barges) and the vessel prior to loading had been thoroughly cleaned of contamination with imported or local whole grain, stock feed or stockfeed ingredients, insect pests, and other infestable residues, soil, animal or avian remains, faeces or other extraneous contamination.

- An International Phytosanitary Certificate with appropriate additional declarations relevant to specific pests or diseases present in the country of origin. The additional declarations may state that the consignment has been found free from a particular disease based on the results of a test, or area or property freedom. A declaration that the consignment has been inspected and found apparently free from all species of the genus *Trogoderma* is also common.

Issues

Processed Grains

Australia often includes a requirement for an International Phytosanitary Certificate among

import conditions for processed commodities such as soya bean or corn gluten meal. This requirement has been questioned by some trading partners. They point out that ISPM 12 – Guidelines for Phytosanitary Certificates states that importing countries should not require phytosanitary certificates for plant products that have been processed in such a way that there is no potential for introducing regulated pests.

However, ISPM 12 – Guidelines for Phytosanitary Certificates also states that

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. A phytosanitary certificate may also be required for other regulated articles where phytosanitary measures are technically justified (e.g. empty containers, vehicles and organisms).

Australia's experience with regulating its grain export pathway shows that there is a high potential for cross infestation and cross contamination of processed plant products with pests and whole seeds. When this risk is explained to the National Plant Protection Organisation (NPPO) of the exporting country there is generally acceptance that Australia's request for phytosanitary certification is justified. In some circumstances however Australia will agree with the NPPO that there is sufficient post-processing security to maintain the quarantine integrity of the processed product and will withdraw its request for a phytosanitary certificate.

Fit For Human Consumption

There has been a proliferation of import conditions in recent years that require a declaration that the product is 'fit for human consumption'. In Australia's view such a broad declaration cannot be made for unprocessed grain or fibre crops. Without processing, all raw grain and fibre crops will contain contaminants in the admixture or traces of chemical that could be considered not 'fit for human consumption' even if those contaminants are within tolerances and/or maximum residue limits of the country of

importation or within Codex Standards.

In circumstances where government to government certification that a commodity is 'fit for human consumption' is requested, Australia will first ask the relevant authority in the importing country for guidance on what test or measure is required to enable such a declaration to be made. It has been Australia's experience that there are no tests or measures for raw, unprocessed commodities, even if an importing country has a comprehensive set of food standards to underpin their food health legislation. In the absence of any guidance from the importing country yet an insistence on a 'fit for human consumption' certificate, Australia will provide certification to the effect that the commodity is 'used for human consumption in Australia after processing, and such processing would be required to meet provisions of the Australian and New Zealand Food Standard Code'.

Quarantine Treatments

Importing countries may require specific treatments for specific pests of quarantine concern, or for regulated pests such as cosmopolitan storage pests. Often the details of the chemical to be used, dose rate, exposure time and temperature range are specified and required to be endorsed on the phytosanitary certificate. This is a simple process, easily managed and verified within the Australian inspection and certification procedures under the export legislation. However, given the predominance of cosmopolitan pests in the grain trade, and the nil tolerance for insects in Australian export grain, a mandatory treatment overlay should only be required if Australia has a particular pest of quarantine significance that is exotic to the country of importation.

Non-conforming Shipments

A systems approach to pest risk management such as that adopted by Australia for its grain exports, and within import conditions for grains and processed plant products, provides a level of assurance that even non-conforming shipments will have relatively low levels of infestation or contamination. Given this profile,

there would appear little justification for outright rejection of a non-conforming shipment, unless the infrastructure for appropriate treatment for the pest detected was not available at the port of entry.

Practical Tolerances

Soil is a regulated article under the International Plant Protection Convention (IPPC) and is a prohibited import by all countries. Soil includes but is not restricted to sands, loams, clay, organic matter, pebbles and minerals. Soil, as evidenced from the international restrictions and prohibitions concerning its movement, is considered to be a high risk pathway for spreading a wide range of pests including but not limited to: bacteria, fungi, insects, nematodes and weeds. Numerous soil-borne pests can survive for many years, with or without suitable hosts. Some of these pests can be detected visually while the detection of others requires sophisticated diagnostics.

Based on well-documented evidence from interception reports and published literature, most National Plant Protection Organizations (NPPO) prohibit the movement of soil that has not been treated to reduce the pest risk to an acceptable level that is permitted by the importing country authority. The acceptability of soil as a contaminant of other regulated articles will depend on the limits established by the NPPO of the importing country.

As a signatory to the IPPC, Australia has an obligation to enforce the quarantine requirements specified by an importing country. Some countries, notably Japan and New Zealand apply an "on arrival" tolerance for soil contamination (0.03 % and 0.05 % seed for sowing respectively). Australia applies a tolerance of 0.1% for soil as a contaminant of imported seeds. Other countries will accept soil as a component of an allowed percentage of foreign matter.

In the absence of an importing country declared tolerance, AQIS will reject grain or plant products when soil is superficially obvious in samples drawn for inspection. AQIS may be rejecting for superficially obvious levels of soil against broad importing country prohibitions for

soil, when there may be tolerances for soil as a contaminant.

AQIS has developed a soil contamination work instruction to address the issue of consistency and interpretation of tolerances of soil in export consignments.

Conclusion

The Articles and ISPMs of the IPPC provide adequate guidance to contracting parties to adopt measures that will prevent the introduction and spread of pests and diseases of grains and fibre crops across international borders. There is some confusion among trading partners in regard to whether government to government certification is required, and whether such certification should

be in the form of a phytosanitary (plant health) or other certificate (food safety). Whilst Codex Alimentarius Standards provide guidelines for food safety and food quality parameters, they do not at present adequately deal with certification of raw, unprocessed commodities such as grain and fibre crops.

Irrespective, the use of integrated measures in a systems approach for pest risk management as described in ISPM 14 is a satisfactory method of meeting the appropriate level of both sanitary and phytosanitary protection of the importing country. The degree of acceptance of these systems approaches will depend upon bilateral agreements on the efficacy of measurement and testing procedures at critical control points within the system.