

Workshop on the Review of Drafts of Regional Standards for Phytosanitary Measures

14-20 July 2008, Bangkok, Thailand

1. Introduction

Participants from Bangladesh, China, Indonesia, Malaysia, New Zealand, Republic of Korea and Thailand attended the APPPC Standard Committee meeting from 14 to 20 July 2008 in Bangkok, Thailand for reviewing drafts of regional standards for phytosanitary measures.

The meeting was opened by Dr He Changchui, Regional representative, Assistant Director-General for the Asia Pacific region for FAO, Bangkok. He welcomed the participants to the meeting noting the heavy workload included in the agenda.

Dr He noted the developments in FAO with the series of reviews and evaluations to improve the capacity and efficiency of the organisation. He went on to mention the input of the CPM into capacity development and the forthcoming open-ended working group meeting on developing strategy for phytosanitary capacity building.

Following a brief description of the CPM standard development and adoption programme, with the present adoption this year of the 31st standard, Dr He discussed the usefulness of the APPPC regional standards for phytosanitary measures in that they helped APPPC members with regional plant protection work and export endeavours.

Dr He noted the development of the programme for collaboration on strategic issues initiated at the 25th session of the APPPC in Beijing. The first meeting in this programme took place prior to CPM 3 in Rome.

The three draft standards to be considered at the present meeting were listed by Dr He. He also noted the development of the SALB PRA in relation to the draft standard on guidelines for protection against SALB.

Dr He wished the participants a successful meeting and an enjoyable stay in Bangkok.

2. Update on APPPC and CPM activities

Mr Piao informed the meeting about the process for the week and then updated on activities within the APPPC and CPM. Dr John Hedley noted the three standards that would be covered over the next week.

3. Discussion of the Draft regional standards

a) Review and discussions of a draft RSPM on “Container Cleanliness”

The subject was introduced by Mr Paul Hallett Team Manager, (MAFBNZ, New Zealand). He gave a power point presentation on containers, covering the environment, hitchhikers and issues in developing an international standard.

Dr Jong-ho Lee presented a short paper on the proposed container cleanliness standard and the issues surrounding it as listed below noting the:

- relatively low risk associated with containers,
- possible considerable interference with trade (8 million containers in 2007 in Korea) if every container having to be inspected,
- verification of container cleanliness is not the role of an NPPO; it is the exporters, importers, shippers that are responsible,
- Many traders cleaned anyway,
- problems if all countries do this which could be barrier in international trade.

He made the suggestion that the draft standard be postponed – but noted if we proceed we should construct the document in the form of guidelines.

Other members of the group felt there was a need for a guideline on how to keep containers clean but no requirement for a certificate for all containers. It was suggested that all containers do not need to be inspected and certified as the risk is very low and NPPOs have limited staff and resources. After some discussion it was agreed to move ahead with the draft although it was recognised that some countries might not be able to implement the provisions of a container cleanliness standard.

Further discussion noted that similar problems had been discussed when the standard for wood packaging was being proposed. It was pointed out that we should do the best we can with limited resources. Is container cleanliness feasible with a large number of containers? One group member reminded the group that CPM had put up this topic for consideration and a number of countries regarded it as an area of concern. It was suggested that we look at the standard as guideline for system development for those countries that want to follow it and general guidance for others. The group agreed with this suggestion.

There followed discussion on a number of major points. One of these concerned whether or not a list of pests of concern as container contaminants should be included in the standard. Agreement was reached on having extended lists as an appendix. Concern centred on the immense number of containers and lack of resources within NPPOs to undertake activities around container cleanliness.

There was discussion on who is responsible for ensuring containers are clean. The issuing of certificates was discussed (Phytosanitary certificate, Special purpose and electronic) and that the standard should be focused on what is possible now – not the future.

The problems of how to maintain the cleanliness of the containers after inspection or if the container has to travel distances to get to the port and who is responsible for ensuring the container does not get contaminated, were discussed.

The title of document was changed to “guidelines for the exterior cleanliness of containers”. It was noted that, hopefully, non-APPPC countries also would make use of the guidelines. It was agreed to keep the standard referring to general cargo and specific-cargo containers as per the definitions.

The group discussed what incentives or disincentives could be place to encourage exporters, importers and shippers to follow the guidelines. It was agreed that any system needs to be flexible enough to be adopted by different ports.

Discussion covered “approved third party” definition and approval processes for the companies undertaking the work. Concern was raised that third parties are not appropriate as they may not have access to wharves and they might not have systems in place. It was agreed that instead of “approved third parties” it would be “approved parties”. This enables port companies, exporters to do this work as part of their daily processes.

Appendix 1 covers pests of concern associated with containers. Questions were asked how this list would be established. It was suggested that the list should stay in for the time being and members be asked to contribute the names of pests known to contaminate containers for addition to the list.

The draft was revised and the amended draft is presented in Annex 3.

b) Guidelines for Protection Against South American Leaf Blight of Rubber

The draft standard was introduced to the meeting by Mr Mazlan Saadon, Crop Protection and Plant Quarantine Division, Department of Agriculture, Malaysia. It was noted that the guidelines need to be straightforward and direct and meet the requirements of the SPS Agreement regarding which countries could implement measures against the disease.

The group noted that the guidelines did not mention rubber wood as did the PRA but Malaysia stated this was due to rubber wood being of negligible risk. Later discussion focused on how regional partners should assist to help exclude this disease - for example how Singapore could help protect Malaysia. One group member stated that there should be co-operation even from non-rubber growing countries.

There was discussion around whether the standard should mention the prohibition of all planting material in some circumstances. It was noted that the PRA did not mention prohibition but covered processes that could be used to allow importation. It was acknowledged that if the PRA says that risks are high and a country cannot manage them, then prohibition is the acceptable measure.

The group discussed diagnostic standards and protocols involved in identification of SALB. It was noted that some diagnostic laboratories would not be able to meet ISO standards. The group agreed that there should be future work on a diagnostic protocol standard for SALB.

The survivability of the spores of *M. ulei* on non-host material during transportation was discussed. The PRA noted the spores would most likely not survive on non-host products. One member questioned the PRA in stating this, and suggested countries review this during standard development. It was highlighted that the PRA has been accepted, but if countries have other information contrary to it then this should be used to technically justify additional measures.

Reference was made to *ISPM 6* for surveillance systems. It was agreed that *ISPM 6* should be used as a basis for SALB surveillance, both general and specific.

The group felt that some parts of the standard were too detailed and could be reduced. Duplications occurred within the standard and appendices. The structure of a national SALB committee in countries was discussed. It was commented that setting up a national committee just for SALB would be difficult and that the NPPO should be able to undertake the functions of the committee. It was noted that each country would have different approaches in regard to the NPPO and committee roles and providing accountability to ensure the continuity of information and knowledge.

It was noted that there are five key areas mentioned in the beginning of the standard although not all were covered within the document. The group worked through the document and ensured each area was covered.

The group discussed the need for cooperation between SALB and non-SALB countries which should include exchange of information, training and development of safe mechanisms for transfer of germplasm and systems and added language to this effect.

The PRA outcomes were further commented on with specific mention in regard to why it did not mention prohibition of planting material (either as a measure or why it was removed). It was questioned if there would be an opportunity to revisit the PRA. One member mentioned that the process has already taken a number of years already and would mean that the PRA would have to be redone. It was apparent that some members felt that the PRA was deficient in some areas and needed improvement especially in risk measures section, while some members disagreed with this.

Agreement was reached to include prohibition in section 3.1.1 if effective measures were not available. Further discussion occurred on the measures for on planting material, foliage, passengers (from SALB endemic countries) and inanimate goods.

The group further commented on the inclusion of SALB PRA sections within the standard. Agreement was reached that some limited excerpts would be left in the standard for further discussion.

The draft was revised and the amended draft is presented in Annex 4.

c) Review and discussion to approval of a draft RSPM on “Land border plant quarantine”

Mr Yang Song, AQSIQ, China introduced the standard and described the problems and challenges facing countries with land borders. The group generally supported this draft and recognised the need for a standard.

It was commented that despite supporting the draft it should be noted that you can really have only one type of entry point facility regardless of where it is based – at a sea port, air port or border entry point. At border entry points, the quarantine services of two countries are next to each other and this provides opportunities for liaison and the harmonisation of procedures.

The group discussed the differences and similarities between sea port and border entry point operations. The main difference was in the presence of local trade at border entry points. A definition for local trade was devised which introduced the term specific border region for the area near entry points where local trade can be facilitated. The subject of land borders was discussed and how this would be described. No solution to this problem was found.

The use of other measures to supplement or partially replace phytosanitary import requirements for local trade were investigated. These included the limitation of the sale of local trade commodities to specific border regions, the setting of size limitations on consignments, the listing of allowed commodities, and the use of surveillance to check on the health of local trade commodities. These measures were discussed at length and included into the sections of the draft.

The background of the document was covered and agreed on with discussions covering harmonisation processes.

The draft was revised and the amended draft is presented in Annex 5.

4. Recommendations for 26th session of APPPC

The Standards Committee decided that the present drafts will be sent out for consultation by contracting parties. The drafts will be amended as appropriate and then presented to the 26th session for adoption.

5. Preparation and adoption of the APPPC Standards Committee report

The draft report was considered, amended and adopted.

6. Other business

It was decided that the request for names of container contaminants to add to Appendix 1 of the container cleanliness would be appended to the draft standard in the consultation process.

Mr Piao noted the need for the continued development of regional standards. He also described the present situation regarding mandatory contributions. Mr Piao mentioned that countries could consider supplying small contributions to the APPPC funds to assist with the funding of meetings. One member noted that meetings could be jointly funded.

The opportunities for using the APPPC as a focal point for discussions on dealing with problems in the phytosanitary area were briefly discussed. The APPPC Secretariat is seen as an efficient coordinating influence. The regional workshop on draft ISPMs are useful in this regard. The pre-CPM meeting of APPPC members also helped with regional understanding of CPM issues.

7. Closure

The meeting closed at noon on Sunday 20th July.

Timetable

Workshop on the Review of the Draft of Regional Standards for Phytosanitary Measures

14-20 July 2008, Bangkok, Thailand

Monday 14 July 2008

8.30-9.00 Registration

Opening Session

9.00-9.15 Opening Address
Dr. He Changchui, Regional Representative
(Group Photo)

9.15-9.30 Update on APPPC and CPM activities

9.30-9.45 Coffee break

9.45-9.50 Introduction : report of the preparation of the draft RSPMs

9.50-12.00 Review and discussions of a draft RSPM on “Sea Container”

12.00-13.30 Lunch

13.30-15.30 Continue discussion on the draft

15.30-15.50 Coffee break

15.50-17.30 Continue discussion on the draft

Tuesday 15 July 2008

8.30-10.00 Continue discussion on the draft

10.00-10.20 Coffee break

10.20-12.00 Continue discussion on the draft

12.00-13.30 Lunch

13.30-15.30 Continue discussion on the draft

15.30-15.50	Coffee break
15.50-17.30	To prepare recommendations for the 26th Session of the APPPC on the approval of the draft Continue discussion on the draft

Wednesday 16 July 2008

8.30-10.00	Review and discussion to approval of a draft RSPM on “SALB”
10.00-10.20	Coffee break
10.20-12.00	Continue discussion on the draft
12.00-13.30	Lunch
13.30-15.30	Continue discussion on the draft
15.30-15.50	Coffee break
15.50-17.30	Continue discussion on the draft

Thursday 17 July 2008

8.30-10.00	Continue discussion on the draft
10.00-10.20	Coffee break
10.20-12.00	Continue discussion on the draft
12.00-13.30	Lunch
13.30-15.30	Continue discussion on the draft.
15.30-15.50	Coffee break
15.50-17.30	To prepare recommendations for the 26th Session of the APPPC on the approval of the draft

Friday 18 July 2008

Field trip

Saturday 19 July 2008

8.30-10.00	Review and discussion to approval of a draft RSPM on “Land border plant quarantine”
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10.00-10.20	Coffee break
10.20-12.00	Continue discussion on the draft
12.00-13.30	Lunch
13.30-15.30	Continue discussion on the draft
15.30-15.50	Coffee break
15.50-17.30	Continue discussion on the draft

Sunday 20 July 2008

8.30-10.00	Continue discussion on the draft
10.00-10.20	Coffee break
10.20-12.00	Continue discussion on the draft
12.00-13.30	Lunch
13.30-15.30	To prepare recommendations for the 26th Session of the APPPC on the approval of the draft
15.30-15.50	Coffee break
15.50-16.30	To prepare recommendations for the 26th Session of the APPPC on the approval of the draft
16.30-17.30	16Preparation and adoption of the APPPC Standard Committee report
17.30-18.00	Other business and closing of the meeting

List of Participants

Workshop on the Review of the Draft of Regional Standards for Phytosanitary
Measures

14-20 July 2008, Bangkok, Thailand

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**APPPC Draft RSPM
Guidelines for the Exterior Cleanliness of Containers**

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INTRODUCTION

Scope

The standard provides guidelines for member countries of APPPC on the development of systems to maintain or improve the cleanliness of containers in international trade. The system applies only to the exterior of both empty and loaded containers. Critical aspects of decontamination and the prevention of re-contamination are noted.

This standard only deals with general or special cargo containers but these guidelines may also be useful for maintaining the cleanliness of air freight or other containers.

References

- Freight containers – Vocabulary*, 1999. ISO 830:1999
Glossary of phytosanitary terms, 2007. ISPM No.5, FAO, Rome.
Guidelines for the notification of non-compliance and emergency action, 2001. ISPM No.13, FAO, Rome.
Monitoring Research and Pathway review: Sea Containers, 2006. Biosecurity Monitoring Group, MAF Biosecurity New Zealand.

Definitions of terms

Except where noted, the definitions are from ISPM No. 5, *Glossary of phytosanitary terms*.

approved party – an organisation approved by an NPPO for examination of containers, or systems for handling containers, and the issuance of special purpose certificates. (New definition.)

certificate – An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations [FAO, 1990]

contamination – Presence in a commodity, storage place, conveyance or container, of pests or other regulated articles, not constituting an infestation (see infestation) [CEPM, 1997; revised CEPM, 1999]

freight container – article of transport equipment which is; of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the carriage of goods by one or modes of transport, without intermediate reloading; fitted with devices permitting its ready handling, particularly its transfer from one mode of transport to another; so designed as to be easy to fill and empty, having an internal volume of at least 1m³. [ISO, 1990]

general cargo container – freight container that is not intended for use in air transport, nor primarily intended for the carriage of a particular category of cargo such as cargo, requiring temperature control, liquid or gas cargo, dry solids in bulk or cargoes such as automobiles (cars) or livestock [ISO, 1990]

inspection – Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly inspect]
NPPO- National Plant Protection Organisation [FAO, 1990; ICPM, 2001]

pest – Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997]

removable equipment – refrigerating and/or heating appliance, power generation unit or other equipment designated primarily for attaching to or detaching from the (thermal container [ISO, 1990]

specific-cargo container – general term applied to those types of containers which are primarily intended for the carriage of particular categories of cargo [ISO, 1990]

Outline of requirements

Because of the risk of moving quarantine pests and soil to other countries on the exterior of containers, all containers should be clean before being moved between countries. Although the cleanliness of containers is the responsibility of shippers and exporters, NPPOs may provide assistance in the form of guidelines on how to maintain the cleanliness of containers

If the container is found to have contamination, immediate removal using scraping brushing or washing may be used to clean the container. Good practice that supports the cleanliness of storage or loading areas is required. Appropriate measures should be taken to ensure re-contamination of the exterior surfaces does not occur.

Where the NPPO of an importing country requires the exporting country to verify the cleanliness of a container, the exporting country should undertake an inspection. If the container exterior is found to be clean, verification documentation should be issued. It is most efficient if inspection takes place as the containers enter the port prior to shipping. This inspection of the exterior of general cargo containers and specific purpose containers should be carried out by NPPO inspectors or approved parties.

The responsibilities of importing NPPOs include the nomination of quarantine pests where this is necessary, the verification of compliance, and the notification of non-compliance if this occurs. Cooperation between NPPOs of importing and exporting countries may involve the establishment of bilateral arrangements and the exchange of information on the cleaning of containers.

BACKGROUND

Millions of empty and loaded general cargo and specific-cargo containers are moved around the world each year. These containers provide a potential pathway for pests to be dispersed between trading countries. While many pests are already widespread or are not serious pests, there are a number of quarantine pests that have the potential to move as contaminants on the exterior of containers.

A recent survey of empty and loaded general cargo containers and specific-cargo containers from all over the world (MAF 2006) indicated that around 16% of empty and loaded containers had exterior contamination. This exterior contamination constitutes approximately half of the total contamination load (i.e. both the internal and exterior contamination) and 62% of arthropods and 85% of eggs were located on the underside exterior surfaces. Even if only a small proportion of this contamination could be classed as high-consequence pests, the large number of containers moving in international trade suggests that significant numbers of high-consequence pests are introduced by this means.

Some of the contaminating pests on containers are serious plant pests, and preventing their spread from containers clearly fits within the APPPC framework.

It is also recognised that some importing countries facilitate the movement of containers through ports by the use of appropriate certification and this can lead to a reduction in direct and indirect costs.

PURPOSE

The purpose of this standard is to describe measures to prevent of the spread of quarantine pests by the contamination of the exterior surfaces of containers. The measures include:

- maintaining the pest-free cleanliness of the exterior of containers, whatever type - general or specific-cargo, by exporters, shippers and port authorities

and if required by the NPPO of importing countries on the basis of technical justification:

- verification of this cleanliness by inspection
- issuance of certification to inform NPPOs of the cleanliness of the container.

This standard will apply particularly where there are recognised risks regarding contamination with egg masses, snails, ants or soil. Some countries may have additional requirements where there is evidence for particular risks that are not adequately managed by the measures of this standard. However, additional standards for the non-plant pests, such as spiders, should not be required as this standard addresses the general cleanliness of the exterior of containers.

REQUIREMENTS

1. Cleanliness of containers

Because of the risk of moving quarantine pests and soil to other countries on the exterior of containers, all containers should be clean before being moved between countries. Exporters or shippers of containers have the responsibility to maintain the cleanliness of the exterior of each container to avoid contamination with pests or contamination that could carry pests (e.g. soil). NPPOs may provide assistance in the

form of guidelines on how to maintain the cleanliness of containers. NPPOs should support port authorities in encouraging the implementation of cleanliness systems.

1.1 Cleaning of the exterior of containers

If the container is found to have contamination, immediate mechanical removal may be an appropriate way to clean the container.

Where contamination is not easily removed, a more vigorous treatment such as pressure washing equipment may be used to remove the contaminants. Where washing is ineffective in container de-contamination, brushing or scraping may be employed followed by washing.

1.2 Cleanliness of the storage or loading areas

Good practice that supports the cleanliness of storage or loading areas includes:

- storage or loading areas should be clean
- hard surfaces, such as concrete pads, should be used to avoid contamination with soil, snails, ants or other pests
- insect repellents or specific lighting should be used to reduce insect populations to low levels
- potential pest habitats, such as vegetation, food sources or rubbish should be removed from around container storage areas
- pest populations within a minimum of 10 metres of these facilities should be managed to avoid contamination.

2. Prevention of exterior re-contamination

Appropriate measures should be taken to ensure re-contamination of the exterior surfaces does not occur. This should include:

- storing the container an appropriate distance away from pest habitats or resident pest populations (the distance will depend on the pest),
- storing the clean container in areas free of risk from re-contamination by vegetation, soil, or free standing water,
- taking species specific measures where quarantine pests are nominated by importing countries.

Where containers are moved to a storage /loading area or to a port of loading or transiting through another country, prevention measures should be taken to avoid contamination.

3. Verification of cleanliness

Where the NPPO of an importing country requires, based on technical justification, the exporting country to verify the cleanliness of a container, the NPPO of the exporting country or its approved party should undertake an inspection. If the container exterior is found to be clean, the NPPO or its approved party should issue verification documentation such as a phytosanitary certificate or special purpose certificate or electronic file (such as a BAPLIE file).

3.1 Inspection of the exterior of containers

Inspection of the exterior surfaces of containers is usually undertaken at the port of export prior to shipping. It is most efficient if this takes place as the containers enter the port. The NPPO inspector or the approved party (in the case of a special purpose certificate) should visually check the following areas for potential contaminants:

- base structure
- sides walls, end walls and roof,
- doors
- all four corner structures
- removable equipment.

Equipment to aid inspection, such as strong torches, mirrors on poles, roof access structures, and pole mounted remote cameras, may be used by the inspectors when necessary.

If a container has no visible contamination the exterior shall be considered clean.

3.2 Certification system for the external inspection of containers

The inspection of the exterior of general cargo containers and specific purpose containers must be carried out by NPPO inspectors or approved third parties. When the exterior of the container is found free from contamination, a record of the container identification details along with cleanliness status should be taken.

If the container is to be certified as clean, only the NPPO or the approved party will be able to:

- issue a phytosanitary certificate attesting to the cleanliness of the container (only NPPOs can do this)
- issue a special purpose certificate used for assurance of container cleanliness (by an approved party) – see Appendix 2.
- use an electronic file. An example of this could involve the attachment of a special ‘quarantine’ code to each container entry in an electronic file (such as the BAPLIE file that travels with the vessel from port to port).

4. Guidance for importing countries

4.1 Quarantine pests

Importing countries may nominate quarantine pests that can contaminate containers as requiring particular measures for exporting countries to take note of.

4.2 Inspection for verification

Inspection by the NPPO of the importing country may be needed to verify the cleanliness of the container.

Containers that have been appropriately certified as being free of visual, external contamination by the NPPO/approved party of the exporting country may not have be subjected to the same on arrival inspection procedures as containers not having this certification.

4.3 Notifications

Notification of any significant non-compliances should follow the requirements of ISPM No. 13.

4.4 Non-compliance

Where non-compliance occurs, the importing country may take phytosanitary action as noted in section 5.1.6.1 of ISPM No. 20..

5. Cooperation

Cooperation between the NPPOs of importing and exporting countries may include:

- negotiation on bilateral arrangements on the cleanliness of containers
- improvement of the cleanliness measures when non-compliances found
- research on risk contaminants and the development of prevention methods
- information exchange including inspection results
- bilateral consultation on the future use of phytosanitary measures on containers.

Examples of pests of concern that can be moved around the world on the exterior of containers

- Gypsy moth (*Lymantria dispar*)
- Giant African snail (*Achatina fulica*).
- Ants, including red imported fire ant (RIFA – *Solenopsis invicta*) and yellow crazy ants (*Anopolepis gracilipes*).
- Soil-associated organisms.

(TO BE ADDED TO)

**Example of a special purpose certificate: Cleanliness Declaration to Accompany
Export Sea Containers**

APPROVED PARTY LETTERHEAD

Packer or Exporter

Cleanliness Declaration for Containers

Vessel Name:

Voyage Number:

Origin port:

Container Number(s):

“All exterior surfaces of the container/s have been checked, cleaned as necessary and are free of contamination.”

I certify that the above is true and correct.

Signed

Name

Designation

Date

Draft RSPM
Guidelines for Protection against South American Leaf Blight of Rubber

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Guidelines for Protection against South American Leaf Blight of Rubber

INTRODUCTION

Scope

This standard provides guidelines for members of the APPPC, particularly rubber growing countries, to improve or develop their phytosanitary measures, including prevention, eradication and control, against South American leaf blight of rubber (SALB). It covers all the areas of plant health dealing with the protection of member countries rubber industries from SALB.

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Definitions and abbreviations

Except where noted, the definitions are from ISPM No. 5, *Glossary of phytosanitary terms*.

control - Suppression, containment or eradication of a pest population [FAO, 1995]

devitalization - A procedure rendering plants or plant products incapable of germination, growth or further reproduction [ICPM, 2001]

eradication - Application of phytosanitary measures to eliminate a pest from an area [FAO, 1990; revised FAO, 1995; formerly eradicate]

exclusion measures - Measures taken at the point of origin to prevent pest from entering PRA area (New definition)

inspection - Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly inspect]

intermediate quarantine - Quarantine in a country other than the country of origin or destination [CEPM, 1996]

pathway - Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO, 1995]

Pest Risk Analysis (PRA) - The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it [FAO, 1995; revised IPPC, 1997; ISPM No. 2, 2007]

phytosanitary import requirements - Specific phytosanitary measures established by an importing country concerning consignments moving into that country [ICPM, 2005]

phytosanitary procedure - Any official method for implementing phytosanitary measures including the performance of inspections, tests, surveillance or treatments in connection with regulated pests [FAO, 1990; revised FAO, 1995; CEPM, 1999; ICPM, 2001; ICPM, 2005]

surveillance - An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures [CEPM, 1996]

treatment - Official procedure for the killing, inactivation or removal of pests, or for rendering pests infertile or for devitalization [FAO, 1990, revised FAO, 1995; ISPM No.15, 2002; ISPM No.18, 2003; ICPM, 2005]

Outline of requirements

In providing protection against SALB, APPPC rubber growing countries should consider five major areas: the prevention of the introduction of SALB into Asia and Pacific region; the establishment of eradication or control programmes in case of entry of SALB; the development of training programmes on inspection and diagnostic methods, surveillance, eradication and control programmes; the minimum requirements for personnel and facilities; and the establishment of coordination and cooperation activities for SALB programmes.

Systems for preventing the introduction of SALB include the establishment of import requirements for host material (stumps and bud wood, seeds *in vitro* plants and foliage), and non-host material (inanimate good or non-host organic material, passengers from SALB endemic countries and other items). Risk management methods that can be used include methods such as inspection for freedom from infection, surface sterilisation and post-entry quarantine for plants for planting, seed treatment for seeds and removal, destruction or heat treatment for contamination of non-viable host material. The operational structures supporting the prevention of the introduction of SALB include points of entry inspection systems, a laboratory diagnostic system and SALB surveillance systems.

Rubber growing countries should also, within their SALB protection programme, develop and establish contingency plans for eradication or control programmes in case the disease is found in a country. Training programmes for inspection, diagnostic and

disinfection procedures, surveillance, eradication and control measures, and staff management need to be developed. A minimum level of personnel and facilities should be established. In managing the SALB protection programme, NPPOs should ensure that a centralised committee is set up to coordinate activities and that appropriate links are made with other related bodies to exchange information and establish regional programmes where necessary.

Background

The South American leaf blight (SALB) is caused by the fungus *Microcyclus ulei* (P.Henn) v. Arx and is the most destructive disease of rubber. It has been a major constraint in the production of rubber in South America. The disease could also cause great economic damage to the rubber growing countries of South East Asia if it were to be introduced into the area. Countries of the region recognised this, when establishing the Plant Protection Agreement for the Asia and Pacific region in 1956, with the promulgation of Article IV and Appendix B to the agreement which dealt specifically with SALB. This instructed members to prohibit the import of plants or seed of the genus *Hevea* from outside the region; or plant material of genus *Hevea* not capable of further growth or propagation (such as fresh or dried herbarium specimens; and any plants of other than genus *Hevea* from SALB endemic areas into their countries.

When revising the agreement in 1999, the 1956 provisions relating to SALB were found inconsistent with the SPS Agreement. APPPC decided that a pest risk analysis (PRA) on SALB be developed by APPPC members countries. This PRA is the guideline used to develop the standard on SALB.

The PRA for SALB was completed and accepted by the 25th Session of the APPPC in August 2007 (subsequently referred to as the SALB PRA).

Purpose

This standard aims to assist APPPC member countries to protect the region against SALB.

There are five major areas:

- the prevention of the introduction of SALB into Asia and Pacific region
- the establishment of eradication or control programmes in case of entry of SALB
- the development of training programmes on inspection and diagnostic methods, surveillance, eradication and control programmes
- the description of minimum requirements for personnel and facilities
- the establishment of coordination and cooperation activities for SALB programmes

REQUIREMENTS

1. The prevention of the introduction of SALB

The prevention of the introduction of SALB into rubber growing countries can be achieved by an integrated programme including:

- strict import requirements (enabled through legislation) that reduce any potential risk from imports to an acceptable level
- an inspection system at points of entry that ensures compliance with import requirements
- laboratory diagnostic system
- an efficient surveillance system that detects any occurrences before an outbreak takes place

1.1 Import requirements

Import requirements should be based on the SALB PRA which describes the pathways of entry and the relative risks of those pathways.

The SALB PRA noted the pathways for the entry of the pathogen as:

- stumps and budwood
- foliage (stem and leaf material not for planting)
- flowers, fruit and seeds
- plants *in vitro*
- rubber wood
- inanimate goods or non-host organic material (contaminated by spores)
- inanimate goods or non-host organic material contaminated by host plant material

Table 1 of the PRA supplies a summary of the assessments of introduction, spread and consequences. This is reproduced in Appendix 1.

The NPPO of each rubber growing member country should consider import requirements as follows:

1.1.1 Host material (*Hevea* spp.)

Planting material of *Hevea* from SALB endemic countries (see Appendix 2) is categorised as high risk. Importing countries should apply measures as necessary. Measures are described in the SALB PRA and include the following:

Stumps and bud wood

- restriction of import to government research institutes
- restriction of quantity based on the capacity of the PEQ facility
- restriction of the length of budwood sticks to less than 1 metre
- pre-export inspection and treatment
- measures applied on arrival (in an appropriately secure facility)
- post-entry quarantine or intermediate quarantine for at least one year and certified free from SALB by a SALB expert
- prohibition of import, when an importing country does not have the capacity to apply effective measures to mitigate risk to an acceptable level

Seeds

- only healthy seeds should be selected for export. They should be washed with a surface sterilant and dressed with a fungicide immediately prior to export. Restrictions on the quantities of seed imported may be considered.

In vitro plants

- grown aseptically on agar for more than three months.

Foliage

- Foliage of *Hevea* from SALB countries should be prohibited unless a treatment is applied which removes the risk.

The entry of high risk material should be limited to designated entry points.

1.1.2 Non-host material (SALB endemic countries)

Inanimate goods or non-host organic material

Cargo such as machinery that has been used in rubber plantations as well as household tools effects (gardening equipment) in SALB endemic countries may be contaminated with non-viable host material carrying the pathogen. Measures as noted in the SALB PRA may be applied.

Passengers from SALB endemic countries

Passengers should make a declaration to the NPPO point of entry inspector if they have visited a SALB endemic country in the last 21 days and if they have visited a rubber plantation. Special care should be taken with such items such as camping equipment and hiking boots, farm equipment, and decorative plant material as these are more likely to contain or be contaminated by non-viable host material greater than 1 cm². Measures may include cleaning, disinfection or destruction.

Other items

Other items such as planting material and foliage of non-SALB hosts may need to be assessed for possible SALB contamination and treated accordingly.

1.1.3 Risk management methods

A number of risk management methods were outlined in section 4 of the SALB PRA. Some of this information is shown in Appendix 3.

1.2 Points of entry inspection systems

All consignments, including hand carried items, from SALB endemic countries should be subjected to inspection by NPPO inspectors at points of entry.

Points of entry inspection systems should ensure that consignments and passengers comply with import/entry requirements..

NPPOs should follow the general guidelines provided in ISPM No. 23: *Guidelines for inspection*.

Specific points relating to inspection for risk items concerning SALB include:

- examination of documents associated with consignments to ensure that all permitted planting material has the correct certification
- examination of manifests to identify inanimate goods or non-host organic material that might be contaminated with the spores of the pathogen or host material that need to be inspected
- inspection of consignments, including used machinery, that have been in the rubber plantations of SALB infected countries
- phytosanitary action, as noted in ISPM No. 20 section 5.1.6.1, should be taken where non-compliance occurs or SALB is detected
- trained personnel to be stationed at entry points to recognize live and dead plant material of *Hevea*
- equipment and chemicals for disinfection and disposing of any suspect material or non compliance consignment should be available to q inspectors. (As in section 6.)
- systems for packing and transporting suspect material to diagnostic laboratories should be used with appropriate security

1.3 Laboratory diagnostic system

This may include the following:

- diagnostic facilities for the identification of suspect fungal isolates. These laboratories should be established at or near the designated entry points where possible.
- the laboratories should follow standard procedures for the diagnosis of the pathogen(s) on specimens.

1.4 SALB surveillance systems

NPPOs should establish and maintain national systems for surveillance for SALB – see ISPM No. 6. It is essential that the pathogen is detected in a country before it establishes and becomes widespread. Also, additional surveillance programme may be set up in countries if the disease occurs in another country in the region or is intercepted at an entry point. Specific surveillance systems are described in Appendix 4. Such surveillance systems would be ongoing.

2. Eradication or control programmes

NPPOs should develop and establish contingency plans for eradication or control programmes in case the disease is found in a country according to ISPM No. 9. The plans would include a system for preventing the movement of potentially infected or contaminated materials within and out of infected areas and simulated outbreak exercises. Such plans could include the following components:

Operational procedures

- undertaking of a delimiting survey of the affected area
- undertaking other surveys as necessary
- documenting records of occurrences
- carrying out an eradication feasibility study
- establishing and undertaking the eradication programme including surveillance, containment, treatment and/or control measures
- disinfection and destruction procedures
- systems for the prevention of the movement of possibly infected or contaminated material within and out of infected areas
- verification of eradication.

Required resources

- a means of identifying the disease in the field plus a diagnostic laboratory to confirm the presence of the pathogen
- trained operational staff
- regulations providing authority for procedure implementation (movement prohibitions, setting up check-points etc)
- information management system
- public relations programme
- financial support.

3. Training programmes

NPPOs should establish training programmes for the staff on:

3.1 Inspection, diagnostic and disinfection procedures

- Procedures of inspection
- Procedures of clearance
- Inspection of document and import requirements
- Recognizing the symptoms of SALB and its pathogen
- Recognizing host plants and host plant parts
- Laboratory diagnostic procedures for identification of the pathogen
- Disinfection or destruction of infected or non-compliant materials

3.2 Surveillance

- Early detection systems
- Identification of symptoms and the pathogen
- Surveillance procedures and sampling techniques
- Documentation and reporting

3.3 Eradication and control measures

- Knowledge on eradication and control procedures
- Safe handling of chemicals and equipment
- Use of a Geographical Information System to map affected areas
- Aerial application and eradication programmes

3.4 Management of programmes

- Staff management
- Programme documentation and recording
- Communication with growers, industry representatives government departments and NGOs
- Public relations

4 Minimum requirements for personnel and facilities

Each rubber growing country should have as a minimum resource for protection against SALB:

- expert(s) on SALB
- trained inspectors for consignment inspection and for surveillance programmes
- diagnostic capabilities to detect and identify the pathogen
- PEQ facilities
- access to aerial spraying organisations or companies
- disinfection facilities including:
 - o dipping tank with sodium hypochlorite
 - o hot water jet system for disinfection
 - o incinerator
 - o UV Chamber

5. Coordination and cooperation

The NPPO of each rubber growing country should coordinate the activities of the SALB programme or where appropriate establish a centralised body or committee (if one does not already exist) to do this. The activities of such a body or committee could cover the following areas:

- resource management
- programme documentation, evaluation and improvement procedures
- centralised communication with growers, industry representatives, government departments and NGOs
- establishment and maintenance of a national focal point
- surveillance planning
- public relations initiatives and programmes.

The NPPO or the committee would also establish links with related bodies or committees in other rubber growing countries to exchange information and establish regional programmes where necessary to:

- seek technical and financial assistance
- ensure availability of technical expertise through regional and international workshop, training and seminar on SALB
- provide training on SALB

- cooperate with other regional and international organizations dealing with rubber and with the NPPOs of non-rubber growing countries (for example, supplying opportunities for intermediate quarantine, undertaking research)
- cooperate with SALB endemic countries in training, research, the safe transfer of rubber plant germplasm including the verification of phytosanitary systems and information exchange.

The NPPOs of all member countries should support regional activities for the prevention of the entry of the disease into the area where this is appropriate.

APPENDICES

Appendix 1

Table 1 Summary of the assessments of introduction, spread and consequences (from SALB PRA, 2007 Table 6)

Vector	Probability of Entry	Probability of Establishment	Probability of Spread	Likely Impact	Level of Risk
High					
High	High		High	High	High
Foliage (stem and leaf material not for planting)	Low		High	High	Moderate
Flowers, fruit and seeds	Low	High	High	High	Low
Plants <i>in-vitro</i>	Negligible	N/A	N/A	N/A	Negligible
Non-host material					
Inanimate goods or non-host organic material	Negligible	N/A	N/A	N/A	Negligible
Inanimate goods or non-host organic material contaminated by host plant material	Low (if < 1cm ²)	High	High	High	Low (if < 1cm ²)

SALB Endemic Countries

1. Belize
2. Bolivia
3. Brazil
4. Colombia
5. Costa Rica
6. Dominican Republic
7. Ecuador
8. El Salvador
9. French Guiana
10. Guatemala
11. Guyana
12. Haiti
13. Honduras
14. Mexico
15. Nicaragua
16. Panama Canal Zone
17. Paraguay
18. Peru
19. Surinam
20. Trinidad & Tobago
21. Venezuela

Risk management methods for SALB taken from the SALB PRA

Numbering is according to the SALB PRA. Some sections have been omitted.

4.0 RISK MANAGEMENT

4.1 Management options for viable host material

Viable host material includes any plant parts that are being imported into the region for the purposes of propagation or could be propagated by conventional means.

4.1.1 Plants for planting

The IPPC definition of plants for planting includes whole plants and cuttings, and plants *in-vitro* (ISPM 5 2006). For the purposes of this risk analysis only Stumps and budwood have been considered for measures as they are the most likely form to be transported between countries for planting.

4.1.1.1 Stumps and budwood

Based on the aforementioned recommendations, the following measures should be applied to Stumps and budwood before export from the SALB affected country or region, during transport to the PRA area, and on arrival in the PRA area.

Pre-export inspection and treatment

- Mother plants should be inspected by suitably qualified plant pathologist for signs SALB infection and deemed to be free of SALB infection. Inspections should take place immediately before the harvesting of Stumps or budwood and during a period considered optimal for disease expression;
- Harvesting of Stumps and budwood should only occur when the bark has been hardened (brown in colour) and during the low-disease season (e.g. dry weather). Stumps and budwood should be no longer than 1 metre when exported;
- Stumps and budwood should be packaged for export in a manner that limits the likelihood of infestation during transport.
- Stumps and budwood should be dipped in an appropriate surface sterilant and a systemic fungicide effective against *M. ulei*;
- Stumps should be free from soil.

Measures on arrival (in an appropriately secure facility)

- Stumps and budwood should be dipped in an appropriate surface sterilant and a systemic fungicide effective against *M. ulei*;
- All packaging material should be destroyed or appropriately sterilised, and the Stumps and budwood repackaged after treatment.

Post entry quarantine

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- Imported Stumps and budwood should be grown in a suitable post entry quarantine facility for at least one year or after new foliage has been produced at least six times;
- Plants should be inspected for signs of SALB daily by suitable trained facility staff and fortnightly by suitably qualified plant pathologists;
- Should any signs of SALB be detected, plants showing signs should be destroyed and all other *Hevea* plants within the facility should be treated with suitable fungicide (treatment may require six or more applications);
- Prior to release from the facility all plants in the facility should be inspected by a suitable qualified plant pathologist for signs of SALB infection;
- Plants may be released from the post entry quarantine facility only after having all plants in the facility have been free from any signs of SALB for at least one year or after new foliage has been produced at least six times.

Intermediate quarantine

Intermediate quarantine offers a further option to mitigate risk. This system can have some logistical, maintenance and financial problems when used for rubber, but it may operate successfully in some specific circumstances.

4.1.1.2 Plants in-vitro

Plants *in-vitro* should not be considered a risk pathway for the entry of *M. ulei* if the cultures are axenic. However, at the moment the practice is not commercially used.

4.1.2 Seeds, flowers and fruit

As the risk from seeds and fruit material relates to surface contamination only, all such products exported from SALB regions should be surface sterilized immediately prior to export.

Flowers and fruits should be washed with a surface sterilant such as 200 ppm of sodium hypochlorite (Chee 2006). Only healthy seeds should be selected for export, washed with water and soaked in formalin (5%) for 15 minutes, and then air dried and dressed with thiophanate methyl, benomyl or mancozeb (Chee 1978; Santos and Pereira 1986).

4.2 Management options for non-viable host material

Non-viable host material is essentially leaves or other parts of a host plant (susceptible *Hevea* species) that are imported either deliberately or as contaminants into the PRA area from countries or areas not known to be free of SALB. These types of host material are not able to be propagated by normal means.

4.2.1 Cargo pathway

Cargo from SALB infested countries or areas should be screened for goods or shipments that are likely to contain or be contaminated by non-viable host material. A

profile list should be established that identifies cargo most at risk of containing non-viable host material.

Cargo such as used machinery (cars, logging equipment, chainsaws, cutters etc.) that may have been used in rubber plantations should be thoroughly steam cleaned of all organic material larger than 1 cm², and dismantled if there are parts that cannot be easily cleaned. Household effects should be inspected for gardening equipment that may be contaminated by organic material.

Any organic material that is thought to be from a susceptible *Hevea* species, is larger than 1 cm², and cannot be removed from the goods or cannot be destroyed (e.g. herbarium material), should be heat treated for a minimum of 30 continuous minutes at 56°C or greater.

SALB surveillance system

1. Responsibilities of the Survey and Monitoring Officer

- Plan surveys and monitoring programmes
- Produce format and guidelines on survey procedures
- Identify agencies and persons to implement surveys
- Monitor, coordinate and direct all survey
- Report immediately the event of detection of SALB or any other disease and pests not hitherto found
- Assist in the identification of SALB

2. Types of surveillance

There are several types of survey each conducted for different purposes. These may include: initial detection surveys, delimiting surveys, monitoring or evaluation surveys and nation-wide surveys.

2.1 Detection Survey

The initial detection surveys will be conducted to determine if the disease is present for the first time.

2.1.1 Planning a Detection Survey

A detection survey should include the following components:

2.1.1.1 Areas

Areas that should be inspected include rubber estates, smallholdings and nurseries which are likely to be exposed to:

- foreign visitors and air carriers
- planting materials from SALB endemic areas.

2.1.1.2 Coverage

- Airports, parcel, post office, tourist route
Any rubber trees found within 2 km from the site
- Rubber estate, small holding and Rubber Research Institute
All rubber trees found within the plantation/institute.

2.1.1.3 Sampling Procedure

All trees in the nurseries should be inspected. For mature plantings, the numbers of sampling point is one (1) every 5 hectares.

2.1.1.4 Survey Frequency

The survey in the nurseries should carried out monthly during the wet season and fortnightly on mature stands during refoliation irrespective of weather.

2.1.2 Farmer-based Detection Survey

For rubber growing areas (small holders or plantation-owned), a detection survey must be farmer-based. The owners of these estates or smallholdings shall be provided with leaflets biennially informing them to be vigilant for SALB and to report immediately to the survey and Monitoring Officer in the event of any suspected presence of SALB in their respective holdings. This instructional and informative leaflet shall be prepared and distributed by the Survey and Monitoring Coordinator for dissemination to all estates and smallholders.

2.2 Delimiting Surveys

When an infection of SALB is detected in an area, a delimiting survey should be conducted immediately to determine the extent of the infection. It involves inspection as outlines under Survey Procedure of all the surrounding fields starting from the centre of the infected area and extending to a radius of 5 km (beyond the affected areas)

2.3 Monitoring/ Evaluation Surveys

The purposes of the monitoring and evaluation surveys is to monitor the effectiveness of the eradication measures that have been carried out and to establish whether the disease has been contained or eradicated or has spread to other areas surrounding the infested zone. Hence monitoring and evaluation surveys will have to be conducted once the eradication procedures have been initiated.

2.4 Nation-wide survey

In the case of a detection of SALB a nation-wide survey is conducted to determine if the disease has spread or occurs also in other part of the country.

3. Reporting of surveys

The report from each survey should be submitted immediately to the coordinator after completion of each round. Any suspected detection of SALB should be notified to the NPPO immediately.

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Guidance on Land Border Plant Quarantine**

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INTRODUCTION

Scope

This standard provides guidance on border plant quarantine for APPPC members, including:

- general requirements of border entry points
- specific requirements of local trade
- bilateral and regional cooperation.

It applies to movement of plants, plant products and other regulated articles through border entry points of APPPC member countries.

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Agreement on application of sanitary and phytosanitary measures, Geneva, 1994. World Trade Organization, Geneva

Guidance on emergency actions and emergency measures, RSPM 5, 2007. APPPC, Bangkok

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

Guidelines for the determination and recognition of equivalence of phytosanitary measures, ISPM 24, 2004, FAO. Rome

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International Plant Protection Convention, 1997. FAO, Rome

Pest reporting, ISPM 17, 2002, FAO, Rome

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Plan of response to significant and emergent entry-exit Pest situation, 2005. AQSIQ, China

Definitions and abbreviations

Except where noted, the definitions are from ISPM No. 5, Glossary of phytosanitary terms.

local trade - Cross border trade of limited amounts of commodities sold in specified border regions by border residents of two countries on designated sites. (New definition)

border entry point - Entry point on a land border between countries (cf port entry point). (New definition)

Outline of requirements

This standard provides guidance for plant quarantine at border entry points. The use of general requirements for large consignments arising from long distance trade or local trade are moved through border entry points is noted. The specific import risk management measures for local trade may include: phytosanitary measures such as listing specific products, limiting the size of consignment, stipulating specific border regions, designating sites for marketing and restricting the traders who can use the system; entry point inspections; pre-clearance systems; pest surveillance; emergency response capability; and public awareness programmes.

The operation of border entry points is facilitated by bilateral or regional cooperation in information exchange, surveillance, pest control programmes, certificate verification, research programmes and capacity building.

BACKGROUND

Many member countries of Asia and Pacific Plant Protection Commission (APPPC) share long land borders, and large amount of plants, plant products and other regulated articles pass through points of entry. Trade across land borders can differ considerably. While long distance trade in large quantities exists and uses the usual import regulatory systems, much of cross border trade concerns the trade of large numbers of small lots which require specific border region import regulatory systems. How to deal with this trade in small amounts of plant material is the major problem of many border entry points. The examination of each small consignment would be generally resource intensive and could interfere with local trade. In most cases, the local trade has been going on for many years and the risks are known and recognized. However, local trade is increasing and the associated risks need to be addressed. It is evident that various countries have different procedures, and requirements.

It was decided by the APPPC at its 25th session that guidance on land border quarantine was needed. This standard provides guidance to harmonize the phytosanitary measures taken by APPPC member countries in land border areas to facilitate the movement of trade.

PURPOSE

This standard offers guidance for the harmonization of procedures for border points of entry to deal with the specific problems arising from local trade and encourage cooperation between neighbouring countries.

REQUIREMENTS

1. General requirements for border entry points

The general requirements for a border entry point are essentially the same as those for port entry points and are described fully in ISPM No. 20 Import Regulatory systems. Where larger amounts of commodities arising from long distance trade or local trade are moved through border entry points, these general requirements would apply.

2. Specific requirements for border entry points

2.1 Establishment of border entry points

The establishment of border entry points of the NPPO should fully take into consideration such factors as geographic conditions, transportation, commodity, trade volume and pest category and status etc. Plant quarantine services should be located near the border crossing point to facilitate the efficient operation of commodity inspection.

2.2 Risk analysis

Each member country shall carry out pest risk analysis as necessary for the entry of plants, plant products and other regulated articles to determine the risk levels according to different types of commodities and establish import risk management measures.

When considering risk management measures for local trade, measures other than inspection should be considered including restrictions on the area of sale, on the traders, on the size of consignments, and on the genera that can be traded.

2.3 Phytosanitary measures for local trade

In considering requirements for local trade border points of entry, NPPOs should take account of the following in preparing measures to supplement low level consignment inspections:

- **Lists of specific products**

NPPOs should prepare, based on risk analysis, lists of plants and plant products that can be moved in local trade. These could be supplemented by lists of prohibited plants and plant products to assist inspectors.

- **Size of consignments**

The size of consignments for local trade should not exceed a certain threshold to minimize risk. This threshold shall be determined by neighbouring member countries through consultation. In many cases there are existing arrangements concerning the value threshold for items of local trade by customs. This could be applied for trade in plants and plant products.

- **Specified border region**

Consignments for local trade should be restricted to specified border regions and movement from these regions would be forbidden to reduce the risk of spread of pests. These regions could coincide with similar customs regions.

- **Designated sites for marketing**

Consignments for local trade should be traded at designated sites to facilitate surveillance and risk management.

- **Restriction on traders**

Those who can undertake local trade should be restricted to residents of the specified border region. Where an identification system exists for population of a specified border region, this could be used to identify residents of the region who undertake local trade.

2.4 Inspection

Where inspection is carried out it should be undertaken at entry points. If this is difficult the NPPO should take supplementary measures such as surveillance after import at a designated site for marketing.

Inspection should be based on the risks. When the plant health situation is normal (ie there is not an outbreak situation), the NPPO should conduct inspections using profiling evaluations based on previous experience. When an outbreak or epidemic is occurring, the NPPO of the importing country should undertake the intensive inspection of all consignments associated with the pest or prohibit specific items.

2.5 Pre-clearance

When necessary, an importing country may, or carry out the inspection and clearance of plants and plant products before export in the exporting country if bilateral arrangements can be agreed to for this..

2.6 Pest surveillance

NPPOs should carry out general surveillance in the specified border regions and specific surveillance for nominated pests in high risk areas such as market areas near the entry point and areas near transport centres (Refer to ISPM No. 6: *Guidelines for surveillance*).

2.7 Emergency response

NPPOs should establish emergency response procedures. The person in charge, facilities for controlling pest, relevant technical reserves, and chemicals and reagents necessary for controlling pest, as well as joint action mechanism with other relevant authorities shall be specified (Refer to RSPM No.5 of APPPC: *Guidance on Emergency Actions and Emergency Measures*).

2.8 Public awareness

NPPOs should make publicly available promotional information on the danger of pests, and on plant quarantine laws and regulations, and penalties for non-compliance at entry points.

3. Cooperation

NPPOs of neighbouring countries may cooperate bilaterally or regionally in the following areas:

Information exchange

NPPOs of neighbouring countries should establish an exchange mechanism to carry out exchange on the following information:

- Laws and regulations on plant quarantine
- Organizational structure
- Distribution and occurrence of pests
- Non-compliance and emergency measures
- Results of surveillance exercises.

Surveillance

When necessary NPPOs of neighbouring countries can jointly carry out pest surveillance in specified border regions.

Pest control programmes

NPPOs of neighbouring countries may take joint action for pest control in border areas when quarantine pests of common concern occur.

Certificate verification

When phytosanitary certificates are used, NPPOs of neighbouring countries should provide with each other the information on certificate identification, such as anti-counterfeit features of certificate, serial number of certificate and sample signatures of certificate issuing personnel etc.

Research programmes

When necessary, NPPOs of neighbouring countries may jointly carry out research programmes on technologies of quarantine, inspection and treatment.

Capacity building

NPPOs of neighbouring countries may cooperate in capacity building including the provision of facilities, training and technical support etc.