

RAP PUBLICATION 2004/24

**REGIONAL STANDARDS
FOR PHYTOSANITARY MEASURES**

***TRAINING REQUIREMENTS FOR
PLANT QUARANTINE INSPECTORS***

APPPC RSPM No. 2



RAP PUBLICATION 2004/24

**REGIONAL STANDARDS
FOR PHYTOSANITARY MEASURES**

***TRAINING REQUIREMENTS FOR
PLANT QUARANTINE INSPECTORS***

The Asia and Pacific Plant Protection Commission (APPPC)
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
REGIONAL OFFICE FOR ASIA AND THE PACIFIC
Bangkok 2004

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to the Plant Protection Officer, FAO Regional Office for Asia and the Pacific, Maliwan Mansion, 39 Phra Atit Road, Bangkok 10200, Thailand or by e-mail to Yongfan.piao@fao.org

© FAO 2004

For copies write to:

Piao Yongfan
FAO Regional Office for Asia and the Pacific
Maliwan Mansion, 39 Phra Atit Road
Bangkok 10200
THAILAND
Tel: (+66) 2 697 4000
Fax: (+66) 2 697 4445
E-mail: Yongfan.piao@fao.org

Endorsement

Regional standards for phytosanitary measures are developed and adopted by the Asia and Pacific Plant Protection Commission as part of the plant protection programme of the Commission's contracting parties. This programme makes available to contracting and other interested parties regional standards for phytosanitary measures to support regional harmonization, with the aim to facilitate trade and avoid the use of unjustifiable measures as barriers to trade.

This standard was endorsed by the twenty-third session of the Asia and Pacific Plant Protection Commission in August 2003.



He Changchui
Assistant Director-General and
FAO Regional Representative for
Asia and the Pacific

CONTENTS

	<i>Page</i>
Endorsement	1
Review	1
Distribution	1
INTRODUCTION	2
Scope	2
References	2
Definitions and abbreviations	3
Outline of requirements	6
GENERAL REQUIREMENTS	7
1. Purpose	7
2. Administration of training systems	7
3. Subject areas for training	8
3.1 Human resource management	8
3.1.1 Personal skills	8
3.1.2 Occupational health and safety issues	9
3.2 General knowledge of plant health, trade and the environment	9
3.2.1 Basic plant health	9
3.2.2 International agreements and standards	10
3.2.3 Phytosanitary principles	10
3.2.4 Legislation, regulations and national policies	10
3.2.5 Pest risk analysis	11
3.2.6 Regulated pests	11
3.2.7 Product identification	11
3.3 Administrative procedures	12
3.3.1 Clearance procedures	12
3.3.2 Phytosanitary certification	13
3.3.3 General phytosanitary documentation	13
3.3.4 Liaison with relevant border agencies and authorities	14

CONTENTS *(continued)*

	<i>Page</i>
3.3.5 Prosecution for non-compliance with phytosanitary regulations	14
3.3.6 Auditing of accredited service providers	14
3.4 Technical Procedures	15
3.4.1 Use of detection systems	15
3.4.2 Sampling regimes for inspection	15
3.4.3 Inspection procedures for different commodities	15
3.4.4 Pest diagnosis (including weeds)	15
3.4.5 Phytosanitary actions and treatments	16
3.4.6 Post-entry quarantine	16
3.4.7 Procedures for detecting and dealing with new pests	17

Endorsement

This Asia and Pacific Plant Protection Commission (APPPC) regional standard for phytosanitary measures was endorsed by the twenty-third session of the APPPC, held on 4 to 8 August 2003 in Kuala Lumpur, Malaysia.

Review

APPPC Regional Standards for Phytosanitary Measures are subject to period review. The next review date for this standard is 2009. The standard may be reviewed earlier if the APPPC decides this is necessary.

Distribution

APPPC Regional Standards for Phytosanitary Measures are distributed by the Executive Secretariat of the APPPC to all APPPC members, the Administrative Heads of Regional Plant Protection Organizations and the FAO International Plant Protection Convention (IPPC) Secretariat. This standard is available on the APPPC webpage found within the International Phytosanitary Portal: <http://www.ippc.int/IPP/En/rppo/jsp>

INTRODUCTION

SCOPE

This standard provides guidance on the development of training requirements for plant quarantine inspectors in phytosanitary inspection theory, methods and procedures.

REFERENCES

Code of conduct for the import and release of exotic biological control agents, 1996. ISPM No. 3, FAO, Rome.

Export certification system, 1997. ISPM No. 7, FAO, Rome.

Glossary of phytosanitary terms, 2002. ISPM No. 5, FAO, Rome.

Guidelines for pest risk analysis, 1996. ISPM No. 2, FAO, Rome.

Guidelines for Phytosanitary Certificates, 2001. ISPM No. 12, FAO, Rome.

Guidelines for regulating wood packaging material in international trade, 2002. ISPM No. 15, FAO, Rome.

Guidelines for the notification of non-compliance and emergency action, 2001. ISPM No. 13, FAO, Rome.

Pest Risk Analysis for quarantine pests including analysis of environmental risks, 2003. ISPM No. 11 Rev. 1, FAO, Rome.

Principles of plant quarantine as related to international trade, 1996. ISPM No. 1, FAO, Rome.

Regulated non-quarantine pests: concept and application, 2002. ISPM No. 16, FAO, Rome.

Certificate II in Quarantine Inspection (various generic, technical and site-specific modules). Australian Quarantine and Inspection Service (AQIS).

National Certificate in Biosecurity (Border Quarantine) with strands in International Cargo Clearance, International Vessel Clearance, International Aircraft Clearance and International Mail Clearance.

Training Programme established through Forest Industries Training and Education Council of New Zealand Incorporated.

Phytosanitary Capacity Evaluation (PCE) of the International Plant Protection Convention. FAO, Rome.

PPQ manuals in electronic format. Plant Protection and Quarantine (PPQ). <http://www.aphis.usda.gov/manuals/online-manual.html>

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

International Plant Protection Convention, 1997. FAO, Rome.

Plant Protection Agreement for the Asia and Pacific Region, 1956 with amendments in 1967, 1979 and with respect to Art. 1 in 1983. FAO, Rome.

DEFINITIONS AND ABBREVIATIONS¹

APPPC*	Asia and Pacific Plant Protection Commission
clearance (of a consignment)	Verification of compliance with phytosanitary regulations. (FAO 1995)
contaminating pest	A pest that is carried by a commodity and, in the case of plants and plant products, does not infest those plants or plant products (CEPM, 1996; revised CEPM, 1999)
Codex*	Codex Alimentarius Commission
consignment	A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) (FAO, 1990; revised ICPM, 2001)
hitch-hiker pest	See contaminating pest

¹ The references listed in brackets refer to the definition or revision of the terms as found in ISPM No. 5 *Glossary of phytosanitary terms*.

inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or determine compliance with phytosanitary regulations (FAO, 1990; revised FAO, 1995, formerly inspect)
IPPC	International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended (FAO, 1990; revised ICPM, 2001)
ISPM	International Standard for Phytosanitary Measures (CEPM, 1996; revised ICPM, 2001)
NPPO	National Plant Protection Organization (FAO, 1990; ICPM, 2001)
OIE*	Office International des Épizooties
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 a pest should be regulated and strength of any phytosanitary measures to be taken against it (FAO, 1995; revised IPPC 1997)
phytosanitary certificate	Certificate patterned after the model certificates of the IPPC (FAO, 1990)
phytosanitary measure (agreed interpretation)	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests (FAO, 1995; revised IPPC, 1997; ICPM, 2002)

The agreed interpretation of the term phytosanitary measure accounts for the relationship of phytosanitary measures to regulated non-quarantine pests. This relationship is not adequately reflected in the definition found in Article II of the IPPC (1997).

phytosanitary procedure	Any officially prescribed method for implementing phytosanitary regulations including the performance for treatments in connection with regulated pests (FAO, 1990; revised FAO, 1995; CEPM, 1995; CEPM, 2001)
post-entry quarantine	Quarantine applied to a consignment after entry (FAO, 1995)
quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO, 1990; revised FAO, 1995; IPPC, 1997)
Regional Plant Protection Organization	An intergovernmental organization with the functions laid down by Article IX of the IPPC [FAO, 1990; revised FAO, 1995; CEPM, 1999; formerly plant protection organization (regional)]
regulated articles	Any plant, plant product, storage place, packaging, conveyance, container, soil, and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved (FAO, 1990; revised FAO, 1995; IPPC, 1997)
regulated non-quarantine pest	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (IPPC, 1997)
regulated pest	A quarantine pest or a regulated non-quarantine pest (IPPC, 1997)
risk profiling*	The use of specific information to direct phytosanitary procedures to areas of highest risk

SPS Agreement*	Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization
wood packaging material	Wood or wood products (excluding paper products) used in supporting, protecting or carrying a commodity (includes dunnage) [ISPM No. 15, 2002]

* Indicates terms which are not included in ISPM No. 5 *Glossary of phytosanitary terms*.

OUTLINE OF REQUIREMENTS

National Plant Protection Organizations (NPPOs) have the responsibility to train plant quarantine inspectors. NPPOs may utilise educational organisations, special training institutes, modular programmes or in-service systems.

A number of subject areas for such training include:

- ◆ human resource management to deal with personal skills and occupational health and safety issues;
- ◆ plant health and impact on trade and the environment to cover basic plant health, international agreements and standards, phytosanitary principles, legislation, regulations and national policies, pest risk analysis, regulated pests, product identification;
- ◆ administrative procedures such as conveyance clearance, mail clearance, cargo clearance, passenger clearance, phytosanitary certification, general phytosanitary documentation, liaison with relevant border agencies and authorities, prosecution for non-compliance with phytosanitary regulations and auditing accredited service providers;
- ◆ technical procedures such as pest diagnosis, sampling regimes for inspection, inspection procedures for different commodities, the use of electronic detection systems, phytosanitary actions and treatments, post-entry quarantine and passenger systems.

GENERAL REQUIREMENTS

1. Purpose

Plant quarantine inspectors face a wide variety of tasks on a daily basis in the inspection of regulated articles. To effectively accomplish this work, it is desirable for the inspectors to have a sound educational background in agriculture, general knowledge in trade and the environment and specific training in phytosanitary procedures used in compliance assurance. Harmonization of inspector training across the APPPC region will increase understanding and cooperation among National Plant Protection Organizations (NPPOs) in the region. This standard lists most, if not all, of the areas of training for inspectors whilst recognizing that inspectors need specific training in regard to the areas in which they are responsible.

The standard, in describing subject areas for training of plant quarantine inspectors, aims to:

- ◆ provide a sound basis for the development of competent and efficient plant quarantine inspectors;
- ◆ achieve a consistent approach to training of inspectors across the APPPC region.

2. Administration of training systems

The NPPO should undertake to provide opportunities for training plant quarantine inspectors (IPPC Article IV.2h) in the appropriate subject areas listed below.

It is recognized that different countries (or different states or provinces within a country) may have different areas of concern and may focus on those phytosanitary areas considered to have the greatest potential need, use and benefit (e.g. different potential pathways for pests). NPPOs should provide suitable expertise and resources for the conduct of a training programme.

Each NPPO has to determine the most efficient way of training its staff. At present there are many methods used by different agencies. These include:

- ◆ training at a special training institute

- ◆ training at an existing educational institute with special courses
- ◆ using training modules as part of a course, as stand-alone or self-study units
- ◆ on the job training by NPPO officials in the home country or in another country.

Also, such training may involve the designing of training programmes for each inspector over a period of years. This is likely to involve continuing training as an officer's job responsibilities change or new procedures are introduced.

Each training system should involve normal administration, including the identification of qualification levels, examination setting and marking and appropriate record keeping.

Some countries within the region have plant quarantine inspectors with multiple responsibilities – for plant health, animal health and food. In such cases, the training programme described in this standard covers only the plant health aspects of the training required.

It may be possible for countries of a region to share training opportunities and hence the costs of establishing training systems.

NPPOs are encouraged to consider the following subject areas for their training programmes. Some NPPOs have additional training modules relating to specific areas of operation. For example, training for inspectors who are to work at an airport may include aspects of aircraft, passenger and baggage clearance, garbage disposal, etc.

3. Subject areas for training

3.1 Human resource management

Training modules for plant quarantine inspectors may include the following aspects of human resource management.

3.1.1 Personal skills

These may include:

- ◆ communication skills
- ◆ interpersonal communication

- ◆ dealing with clients
- ◆ conflict management
- ◆ cultural sensitivity
- ◆ language skills
- ◆ computer literacy
- ◆ report writing
- ◆ public awareness campaigns
- ◆ taking legal statements
- ◆ on the job training of other staff.

3.1.2 Occupational health and safety issues

These may include training dealing with:

- ◆ safety in the work place
- ◆ dangerous work areas such as wharves and ship inspections
- ◆ recognition and handling, where authorized, of hazardous materials
- ◆ handling equipment
- ◆ handling toxic and treated commodities
- ◆ handling suspect packages and commodities
- ◆ identification of safety signs and symbols
- ◆ maintenance of equipment/facilities
- ◆ application of quarantine treatments.

3.2 General knowledge of plant health, trade and the environment

3.2.1 Basic plant health

A basic knowledge of the biotic factors involved in plant health (e.g. insects, mites, arachnids, nematodes, molluscs, weeds, fungi, bacteria, viruses and allied entities) is essential. This also includes knowledge of how these pests may be carried with regulated articles and moved between countries. The basic information should include an understanding of the impact of pests on commercial production, the environment and human health.

Where inspectors act on behalf of other agencies, such as public health and sanitary agencies, in inspections for spiders, frogs and other hitch-hiker pests/contaminating pests, they may need appropriate training. This also applies where inspectors are involved with inspections relating to hull fouling and ballast water under the International Maritime Organisation (IMO).²

3.2.2 International agreements and standards

Inspectors need to be aware of the World Trade Organization (WTO) Sanitary and Phytosanitary Measures (SPS) Agreement, the IPPC and relevant regional plant protection agreements, as well as the associated standard-setting activities of IPPC, CODEX, OIE and Regional Plant Protection Organizations. Inspectors need to have an understanding of the use of the terminology of the *Glossary of phytosanitary terms* (ISPM No. 5).

Inspectors need to be aware of the role of the IPPC in describing the responsibilities of NPPOs and contracting parties and the relevant ISPMs on commodity import and export certification.

3.2.3 Phytosanitary principles

Inspectors need to understand the basic principles of phytosanitary measures such as prevention, eradication, control/containment of quarantine pests. Inspectors should be aware of the *Principles of plant quarantine as related to international trade* (ISPM No. 1).

3.2.4 Legislation, regulations and national policies

It is essential that inspectors are familiar with their national quarantine legislation, regulations and policies. They should understand the structure of the NPPO, their lines of reporting and know their powers, and their limitations, under the legislation. Inspectors may need to be aware of related legislation and regulations of other government agencies (e.g. customs, immigration, health, railways, civil aviation, post and telecommunication, port, airport and other border authorities).

² United Nation's Specialized Agency responsible for improving maritime safety and preventing pollution from ships.

3.2.5 Pest risk analysis

Inspectors should understand the need for pest risk analysis, the components of risk assessment and risk management, and how the process is involved in the preparation of import requirements or export certification (ISPM No. 2: *Guidelines for pest risk analysis* and ISPM No. 11 Rev. 1: *Pest Risk Analysis for quarantine pests including analysis of environmental risks*).

Inspectors need to be aware of the risk assessment process associated with the introduction and spread of regulated pests on regulated articles.

Inspectors should be able to supervise/apply appropriate required risk management procedures.

3.2.6 Regulated pests

Inspectors should be aware of regulated pests, both quarantine pests and regulated non-quarantine pests, that may threaten their domestic industries and the environment. This should involve knowledge of the origin and the major pathways of introduction of these pests and the risk of their introduction and spread. They should be able to report the finding of such pests.

3.2.7 Product identification

Inspectors need to be able to recognize a variety of regulated articles in order to apply regulations correctly (e.g. fruit, vegetables, cereals, seeds, flowers, ornamentals), processed plant material, propagative material, forest produce (logs, lumber, manufactured articles), cane products, growing media.

Inspectors may also need to be aware of the operation of the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES)³ regarding endangered species and of

³ *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, 1973. UNEP, Geneva. CITES aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

the *Convention on Biological Diversity* (CBD)⁴ particularly in relation to the entry of invasive alien species that may threaten the environment.

Some countries may require inspectors to deal with documentation concerning living modified organisms (LMO) and issues relating to the *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* (Cartagena Protocol).⁵

3.3 Administrative procedures

3.3.1 Clearance procedures

Conveyance clearance (air, sea, land)

Inspectors need to be able to apply the procedures relating to phytosanitary clearance when a conveyance (aircraft, ship, train, truck, etc.) enters the country. These procedures may involve inspection, documentation checking, treatment, seizure, rejection, containment of risk items and garbage disposal.

Mail clearance

Inspectors should be familiar with the handling and screening process for mail and with the appropriate inspection techniques to detect regulated articles.

Cargo clearance

Procedures used include: documentation checking, inspection, applying/supervising any appropriate treatment, detention, destruction and refusal of entry. Inspectors should be able to apply

⁴ *Convention on Biological Diversity*, 1992. CBD, Montreal. The CBD has as its objectives the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

⁵ *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, 2000. CBD, Montreal. The Cartagena Protocol aims to ensure that an adequate level of protection is provided for the safe transfer, handling and use of LMOs resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity.

entry clearance procedures for consignments of plant material and other regulated articles.

Passenger clearance

Inspectors should be trained in dealing with passengers and passenger baggages. This includes:

- ◆ questioning skills for dealing with passengers
- ◆ baggage inspection skills
- ◆ profiling data to target inspections and other phytosanitary procedures
- ◆ the use of effective liaison with the personnel of associated agencies
- ◆ procedures for seizure, release and treatment of goods.

3.3.2 Phytosanitary certification

Inspectors should be able to check:

- ◆ the requirements of the *Guidelines for phytosanitary certification* (ISPM No. 12) and *Export certification system* (ISPM No. 7) are implemented
- ◆ compliance with the requirements of the importing country
- ◆ the application of the export certification system of their own country.

3.3.3 General phytosanitary documentation

Inspectors should be familiar with the phytosanitary documents relating to import, export and domestic movement of regulated articles. This may also include documentation relating to:

- ◆ the import and release of biological control agents (ISPM No. 3: *Code of conduct for the import and release of exotic biological control agents*)
- ◆ wood packaging materials (ISPM No. 15: *Guidelines for regulating wood packaging material in international trade*)
- ◆ notification of non-compliance (ISPM No. 13: *Guidelines for the notification of non-compliance and emergency action*)
- ◆ import requests and permits

- ◆ regulated non-quarantine pests (ISPM No. 16: *Regulated non-quarantine pests: concept and application*)
- ◆ declarations
- ◆ CITES, in some countries.

3.3.4 Liaison with relevant border agencies and authorities

Inspectors should be aware of appropriate procedures and protocols to liaise with relevant government agencies including:

- ◆ customs
- ◆ immigration
- ◆ railways and civil aviation
- ◆ communication, post and telecommunication
- ◆ environment
- ◆ health
- ◆ banks
- ◆ port, airport and any other border authorities as appropriate.

3.3.5 Prosecution for non-compliance with phytosanitary regulations

Inspectors should be familiar with the documentation and procedures to support prosecutions for deliberate non-compliance with phytosanitary regulations. Such non-compliance includes:

- ◆ the smuggling of prohibited materials
- ◆ erroneous entry or falsification of import permits (including false product descriptions)
- ◆ phytosanitary certificates or other phytosanitary documents
- ◆ breaking of quarantine seals on containers or packaging.

In countries where inspectors undertake prosecution, they may require appropriate training.

3.3.6 Auditing of accredited service providers

Inspectors may be trained to undertake audits of third-party service providers and audits of approved quarantine premises and facilities.

3.4 Technical procedures

3.4.1 Use of detection systems

Inspectors should be trained in the use of various detection systems where they are used by NPPOs such as:

- ◆ X-ray transmission imaging machines
- ◆ scanners used for containers
- ◆ thermal scanners for wood and logs
- ◆ animal detectors
- ◆ inspection at checkpoints.

3.4.2 Sampling regimes for inspection

Inspectors need to be familiar with sampling regimes for the inspection of different kinds and quantities of regulated articles. This will involve the determination of the sample size, the number of samples required, and the method of collection of samples from the different types and volumes of plant material or other regulated articles.

3.4.3 Inspection procedures for different commodities

Inspectors need to be able to use different inspection techniques for different commodities and consignments such as bulk shipment, containers, various forms of packaging, bags, sacks or boxes, individual items, passenger baggage using the following methods:

- ◆ visual examination including field inspections, monitoring, surveys
- ◆ microscopic examination
- ◆ electronic tests or analysis
- ◆ analytical methods.

3.4.4 Pest diagnosis (including weeds)

Inspectors need to be trained to be able to:

- ◆ recognize the signs, symptoms and presence of pests associated with regulated articles
- ◆ use diagnostic tools to aid in primary identification of biotic agents

- ◆ collect and preserve specimens for submission to experts for identification
- ◆ recognize weed seed contaminants and collect samples for submission to experts for identification
- ◆ know where to refer specimens when special expertise is required
- ◆ know how to deal with lack of definite diagnoses
- ◆ recognize contamination of non-regulated articles with regulated articles.

3.4.5 Phytosanitary actions and treatments

Inspectors need to be trained in the use and supervision of those actions and treatments that may be required. These may include:

- ◆ phytosanitary actions to
 - hold
 - prohibit entry
 - destroy material (by burial or incineration)
 - processing for a different end-use with negligible quarantine risk
- ◆ treatments including:
 - fumigation
 - physical disinfestation using low temperatures, heat or irradiation
 - chemical disinfestation.

3.4.6 Post-entry quarantine

Inspectors should be familiar with the principles and application of post-entry quarantine. Post-entry quarantine may be undertaken in authorized specially designed and secure glass-houses, isolated planting areas or using special monitoring programmes to observe the imported materials for the incidence of pests. Post-entry quarantine may have different degrees of security to deal with different levels of risk, for example:

- ◆ high security using special secure facilities with diagnostic and destruction equipment

- ◆ medium security using facilities which are audited by the NPPO.

Inspectors should be able to use correct procedures for handling material destined for post-entry quarantine.

3.4.7 Procedures for detecting and dealing with new pests

Inspectors need to be familiar with procedures for detecting new pests, such as pest surveillance and control, containment and eradication procedures.