

**INTERNATIONAL STANDARDS FOR
PHYTOSANITARY MEASURES**

**GUIDELINES FOR REGULATING
WOOD PACKAGING MATERIAL
IN INTERNATIONAL TRADE**

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Secretariat of the International Plant Protection Convention
Food and Agriculture Organization of the United Nations
Rome, 2002

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CONTENTS

<i>Endorsement</i>	1
<i>Application</i>	2
<i>Review and amendment</i>	2
<i>Distribution</i>	3
INTRODUCTION	
SCOPE	4
REFERENCES	4
DEFINITIONS AND ABBREVIATIONS	4
OUTLINE OF REQUIREMENTS	7
REGULATORY REQUIREMENTS	
1. Basis for Regulating	8
2. Regulated Wood Packaging Material	8
3. Measures for Wood Packaging Material	8
3.1 Approved measures	8
3.2 Measures pending approval	9
3.3 Other measures	9
3.4 Review of measures	10
OPERATIONAL REQUIREMENTS	
4. Dunnage	10
5. Procedures Used Prior to Export	10
5.1 Compliance checks on procedures applied prior to export	10
5.2 Transport arrangements	10
6. Procedures on Import	10
6.1 Measures for non-compliance at point of entry	11
6.2 Disposal	11
Annexes	
I. Approved measures associated with wood packaging material	12
II. Marking for approved measures	13
III. Measures being considered for approval under this standard	14

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Endorsement

International standards for phytosanitary measures are prepared by the Secretariat of the International Plant Protection Convention as part of the United Nations Food and Agriculture Organization's global programme of policy and technical assistance in plant quarantine. This programme makes available to FAO Members and other interested parties these standards, guidelines and recommendations to achieve international harmonization of phytosanitary measures, with the aim to facilitate trade and avoid the use of unjustifiable measures as barriers to trade.

This standard was endorsed by the Interim Commission on Phytosanitary Measures in March 2002.

Jacques Diouf
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Application

International standards for phytosanitary measures (ISPMs) are adopted by contracting parties to the IPPC, and by FAO Members that are not contracting parties, through the Interim Commission on Phytosanitary Measures. ISPMs are the standards, guidelines and recommendations recognized as the basis for phytosanitary measures applied by Members of the World Trade Organization under the Agreement on the Application of Sanitary and Phytosanitary Measures. Non-contracting parties to the IPPC are encouraged to observe these standards.

Review and amendment

International standards for phytosanitary measures are subject to periodic review and amendment. The next review date for this standard is 2004, or such other date as may be agreed upon by the Commission on Phytosanitary Measures.

Standards will be updated and republished as necessary. Standard holders should ensure that the current edition of this standard is being used.

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Distribution

International standards for phytosanitary measures are distributed by the Secretariat of the International Plant Protection Convention to all FAO Members, plus the Executive/Technical Secretariats of the Regional Plant Protection Organizations:

- Asia and Pacific Plant Protection Commission
- Caribbean Plant Protection Commission
- Comité Regional de Sanidad Vegetal para el Cono Sur
- Comunidad Andina
- European and Mediterranean Plant Protection Organization
- Inter-African Phytosanitary Council
- North American Plant Protection Organization
- Organismo Internacional Regional de Sanidad Agropecuaria
- Pacific Plant Protection Organization.

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INTRODUCTION

SCOPE

This standard describes phytosanitary measures to reduce the risk of introduction and/or spread of quarantine pests associated with wood packaging material (including dunnage), made of coniferous and non-coniferous raw wood, in use in international trade.

REFERENCES

- Agreement on the Application of Sanitary and Phytosanitary Measures*, 1994. World Trade Organization, Geneva.
- Export certification system*, 1997. ISPM Pub. No. 7, FAO, Rome.
- Glossary of phytosanitary terms*, 2001. ISPM Pub. No. 5, FAO, Rome.
- Guidelines for phytosanitary certificates*, 2001. ISPM Pub. No. 12, FAO, Rome.
- Guidelines on notification of non-compliance and emergency action*, 2001. ISPM Pub. No. 13, FAO, Rome.
- ISO 3166-1-ALPHA-2 CODE ELEMENTS
(<http://www.din.de/gremien/nas/nabd/iso3166ma/codlst1/elements1.html>)
- International Plant Protection Convention*, 1997. FAO, Rome.
- Principles of plant quarantine as related to international trade*, 1995. ISPM Pub. No. 1, FAO, Rome.

DEFINITIONS AND ABBREVIATIONS

bark-free wood	Wood from which all bark excluding the vascular cambium, including bark around knots, and bark pockets between rings of annual growth have been removed [ISPM Pub. No. 15, 2002]
chemical pressure impregnation	Treatment of wood with a chemical preservative through a process of pressure in accordance with an officially recognized technical specification [ISPM Pub. No. 15, 2002]
certificate	An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations [FAO, 1990]
commodity	A type of plant, plant product, or other article being moved for trade or other purpose [FAO, 1990; revised ICPM, 2001]
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]
debarking	Removal of bark from round wood (debarking does not necessarily make the wood bark-free) [FAO, 1990]
dunnage	Wood packaging material used to secure or support a commodity but which does not remain associated with the commodity [FAO, 1990; revised ISPM Pub. No. 15, 2002]
emergency action	A prompt phytosanitary action undertaken in a new or unexpected phytosanitary situation [ICPM, 2001]

emergency measure	A phytosanitary regulation or procedure established as a matter of urgency in a new or unexpected phytosanitary situation. An emergency measure may or may not be a provisional measure [ICPM, 2001]
free from (of a consignment, field, or place of production)	Without pests (or a specific pest) in numbers or quantities that can be detected by the application of phytosanitary procedures [FAO, 1990; revised FAO, 1995; CEPM, 1999]
fumigation	Treatment with a chemical agent that reaches the commodity wholly or primarily in a gaseous state [FAO, 1990; revised FAO, 1995]
heat treatment	The process in which a commodity is heated until it reaches a minimum temperature for a minimum period of time according to an officially recognized technical specification [ISPM Pub. No. 15, 2002]
infestation (of a commodity)	Presence in a commodity of a living part of the plant or plant product concerned. Infestation includes infection [CEPM, 1997; revised CEPM, 1999]
interception (of a pest)	The detection of a pest during inspection or testing of an imported consignment [FAO, 1990; revised CEPM, 1996]
kiln-drying	A process in which wood is dried in a closed chamber using heat and/or humidity to achieve a required moisture content [ISPM Pub. No. 15, 2002]
mark	An official stamp or brand internationally recognized, applied to a regulated article to attest its phytosanitary status [ISPM Pub. No. 15, 2002]
NPPO	National Plant Protection Organization [FAO, 1990; ICPM, 2001]
official	Established, authorized or performed by a National Plant Protection Organization [FAO, 1990]
Pest Risk Analysis	The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it [FAO, 1990; revised IPPC, 1997]
phytosanitary action	An official operation, such as inspection, testing, surveillance or treatment, undertaken to implement phytosanitary regulations or procedures [ICPM, 2001]
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; ISC, 2001]
<i>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).</i>	
phytosanitary procedure	Any officially prescribed method for implementing phytosanitary regulations including the performance of inspections, tests, surveillance or treatments in connection with regulated pests [FAO, 1990; revised FAO, 1995; CEPM, 1999; ICPM, 2001]

phytosanitary regulation	Official rule to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests, including establishment of procedures for phytosanitary certification [FAO, 1990; revised FAO, 1995; CEPM, 1999; ICPM, 2001]
plant products	Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests [FAO, 1990; revised IPPC, 1997; formerly Plant product]
PRA	Pest risk analysis [FAO, 1995]
processed wood material	Products that are a composite of wood constituted using glue, heat and pressure, or any combination thereof [ISPM Pub. No. 15, 2002]
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]
raw wood	Wood which has not undergone processing or treatment [ISPM Pub. No. 15, 2002]
regulated article	Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harboring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved [CEPM, 1996; revised CEPM, 1999; ICPM, 2001]
test	Official examination, other than visual, to determine if pests are present or to identify pests [FAO, 1990]
treatment	Officially authorized procedure for the killing or removal of pests or rendering pests infertile [FAO, 1990; revised FAO, 1995; ISPM Pub. No. 15, 2002]
wood	A commodity class for round wood, sawn wood, wood chips or dunnage, with or without bark [FAO, 1990; revised ICPM, 2001]
wood packaging material	Wood or wood products (excluding paper products) used in supporting, protecting or carrying a commodity (includes dunnage) [ISPM Pub. No. 15, 2002]

OUTLINE OF REQUIREMENTS

Wood packaging material made of unprocessed raw wood is a pathway for the introduction and spread of pests. Because the origin of wood packaging material is often difficult to determine, globally approved measures that significantly reduce the risk of pest spread are described. NPPOs are encouraged to accept wood packaging material that has been subjected to an approved measure without further requirements. Such wood packaging material includes dunnage, but excludes processed wood packaging material.

Procedures to verify that an approved measure, including the application of a globally recognized mark, has been applied should be in place in both exporting and importing countries. Other measures agreed to under a bilateral arrangement are also considered in this standard. Wood packaging material that does not comply with the requirements of this standard should be disposed of in an approved manner.

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REGULATORY REQUIREMENTS

1. Basis for Regulating

Wood packaging material is frequently made of raw wood that may not have undergone sufficient processing or treatment to remove or kill pests and therefore becomes a pathway for the introduction and spread of pests. Furthermore, wood packaging material is very often re-used, recycled or re-manufactured (in that packaging received with an imported consignment may be re-used to accompany another consignment for export). The true origin of any piece of wood packaging material is difficult to determine and thus its phytosanitary status cannot be ascertained. Therefore the normal process of undertaking risk analysis to determine if measures are necessary and the strength of such measures is frequently not possible for wood packaging material because its origin and phytosanitary status may not be known. For this reason, this standard describes globally accepted measures that are approved and that may be applied to wood packaging material by all countries to practically eliminate the risk for most quarantine pests and significantly reduce the risk from a number of other pests that may be associated with that material.

Countries should have technical justification for requiring the application of the approved measures as described in this standard for imported wood packaging material. Requiring phytosanitary measures beyond an approved measure as described in this standard also requires technical justification.

2. Regulated Wood Packaging Material

These guidelines are for coniferous and non-coniferous raw wood packaging material that may serve as a pathway for plant pests posing a threat mainly to living trees. They cover wood packaging material such as pallets, crating, packing blocks, drums, cases, load boards, pallet collars, and skids which can be present in almost any imported consignment, including consignments which would not normally be the target of phytosanitary inspection.

Wood packaging made wholly of wood-based products such as plywood, particle board, oriented strand board or veneer that have been created using glue, heat and pressure or a combination thereof should be considered sufficiently processed to have eliminated the risk associated with the raw wood. It is unlikely to be infested by raw wood pests during its use and therefore should not be regulated for these pests.

Wood packaging material such as veneer peeler cores¹, sawdust, wood wool, and shavings, and raw wood cut into thin² pieces may not be pathways for introduction of quarantine pests and should not be regulated unless technically justified.

3. Measures for Wood Packaging Material

3.1 Approved measures

Any treatment, process, or a combination of these that is significantly effective against most pests should be considered effective in mitigating pest risks associated with

¹ Veneer peeler cores are a by-product of veneer production involving high temperatures and comprising the center of a log remaining after the peeling process.

² Thin wood is considered to be 6mm thickness or less according to the Customs Harmonized Commodity Description and Coding System (the Harmonized System or HS).

wood packaging material used in transport. The choice of a measure for wood packaging material is based on consideration of:

- the range of pests that may be affected
- the efficacy of the measure
- the technical and/or commercial feasibility.

Approved measures should be accepted by all NPPOs as the basis for authorizing the entry of wood packaging material without further requirements except where it is determined through interceptions and/or PRA that specific quarantine pests associated with certain types of wood packaging material from specific sources require more rigorous measures.

Approved measures are specified in Annex I.

Wood packaging material subjected to these approved measures should display a specified mark shown in Annex II.

The use of marks addresses the operational difficulties associated with the verification of compliance with treatment for wood packaging material. A universally recognized, non-language specific mark facilitates verification during inspection at the point of export, at the point of entry or elsewhere.

References for supporting documentation on approved measures are available from the IPPC Secretariat.

3.2 Measures pending approval

Other treatments or processes for wood packaging material will be approved when it can be demonstrated that they provide an appropriate level of phytosanitary protection (Annex III). The currently measures identified in Annex I continue to be under review, and new research may point, for example, to other temperature/time combinations. New measures may also reduce risk by changing the character of the wood packaging material. NPPOs should be aware that measures may be added or changed and should have sufficient flexible import requirements for wood packaging to accommodate changes as they are approved.

3.3 Other measures

NPPOs may accept any measures other than those listed in Annex I by arrangement with their trading partners, especially in cases where the measures listed in Annex I cannot be applied or verified in the exporting country. Such measures should be technically justified and respect the principles of transparency, non-discrimination and equivalence.

The NPPOs of importing countries should consider other arrangements for wood packaging material associated with exports from any country (or particular source) where evidence is provided which demonstrates that the pest risk is adequately managed or absent (e.g. areas with similar phytosanitary situations or pest free areas).

Certain movements of wood packaging material (e.g. tropical hardwoods associated with exports to temperate countries) may be considered by the importing NPPO not to carry a phytosanitary risk and thus can be exempted from measures.

Subject to technical justification, countries may require that imported wood packaging material subjected to an approved measure be made from debarked wood and display a mark as shown in Annex II.

3.4 Review of measures

The approved measures specified in Annex I and the list of measures under consideration in Annex III should be reviewed based on new information provided to the Secretariat by NPPOs. This standard should be amended appropriately by the ICPM.

OPERATIONAL REQUIREMENTS

To meet the objective of preventing the spread of pests, both exporting and importing countries should verify that the requirements of this standard have been met.

4. Dunnage

Ideally, dunnage should also be marked in accordance with Annex II of this standard as having been subjected to an approved measure. If not, it requires special consideration and should, as a minimum, be made from bark-free wood that is free from pests and signs of live pests. Otherwise it should be refused entry or immediately disposed of in authorized manner (see section 6).

5. Procedures Used Prior to Export

5.1 Compliance checks on procedures applied prior to export

The NPPO of the exporting country has responsibility for ensuring that systems for exports meet the requirements set out in this standard. It includes monitoring certification and marking systems that verify compliance, and establishing inspection procedures (see also ISPM Part No. 7: *Export certification system*), registration or accreditation and auditing of commercial companies that apply the measures, etc.

5.2 Transit arrangements

Where consignments moving in transit have exposed wood packaging material that has not met the requirements for approved measures, the NPPOs of the transit countries may require measures in addition to those of the importing country to ensure that the wood packaging material does not present an unacceptable risk.

6. Procedures upon Import

The regulation of wood packaging material requires that NPPOs have policies and procedures for other aspects of their responsibilities related to wood packaging material.

Since wood packaging materials are associated with almost all shipments, including those not normally the target of phytosanitary inspections, cooperation with agencies, organizations, etc. not normally involved with meeting phytosanitary export conditions or import requirements is important. For example, cooperation with Customs organizations should be reviewed to ensure effectiveness in detecting potential non-compliance of wood packaging material. Cooperation with the producers of wood packaging material also needs to be developed.

6.1 Measures for non-compliance at point of entry

Where wood packaging material does not carry the required mark, action may be taken unless other bilateral arrangements are in place. This action may take the form of treatment, disposal or refused entry. The NPPO of the exporting country may be notified (see ISPM Pub. No. 13: *Guidelines on notification of non-compliance and emergency action*). Where the wood packaging material does carry the required mark, and evidence of live pests is found, action can be taken. These actions may take the form of treatment, disposal or refused entry. The NPPO of the exporting country should be notified in cases where live pests are found, and may be notified in other cases (see ISPM Pub. No. 13: *Guidelines on notification of non-compliance and emergency action*).

6.2 Disposal

Disposal of wood packaging material is a risk management option that may be used by the NPPO of the importing country upon arrival of the wood packaging material where treatment is not available or desirable. The following methods are recommended for the disposal of wood packaging material when this is required. Wood packaging material that requires emergency action should be appropriately safeguarded prior to treatment or disposal to prevent escape of any pest between the time of the detection of the pest posing the threat and the time of treatment or disposal.

Incineration

Complete burning

Burial

Deep burial in sites approved by appropriate authorities. (Note: not a suitable disposal option for wood infested with termites). The depth of the burial may depend on climatic conditions and the pest, but is recommended to be at least 1 metre. The material should be covered immediately after burial and should remain buried.

Processing

Chipping and further processing in a manner approved by the NPPO of the importing country for the elimination of pests of concern (e.g. manufacture of oriented strand board).

Other methods

Procedure endorsed by the NPPO as effective for the pests of concern.

The methods should be applied with the least possible delay.

APPROVED MEASURES ASSOCIATED WITH WOOD PACKAGING MATERIAL

Heat treatment (HT)

Wood packaging material should be heated in accordance with a specific time-temperature schedule that achieves a minimum wood core temperature of 56°C for a minimum of 30 minutes³.

Kiln-drying (KD), chemical pressure impregnation (CPI), or other treatments may be considered HT treatments to the extent that these meet the HT specifications. For example, CPI may meet the HT specification through the use of steam, hot water, or dry heat.

Heat treatment is indicated by the mark HT. (see Annex II)

Methyl bromide (MB) fumigation for wood packaging material

The wood packaging material should be fumigated with methyl bromide. The treatment is indicated by the mark MB. The minimum standard for methyl bromide fumigation treatment for wood packaging material is as follows:

Temperature	Dosage rate	Minimum concentration (g/m ³) at:			
		0.5hrs.	2hrs.	4hrs.	16hrs.
21°C or above	48	36	24	17	14
16°C or above	56	48	28	20	17
11°C or above	64	48	32	22	19

The minimum temperature should not be less than 10°C and the minimum exposure time should be 16 hours.⁴

List of most significant pests targeted by HT and MB

Members of the following pest groups associated with wood packaging material are practically eliminated by HT and MB treatment in accordance with the specifications listed above:

Pest group
Anobiidae
Bostrichidae
Buprestidae
Cerambycidae
Curculionidae
Isoptera
Lyctidae (with some exceptions for HT)
Oedemeridae
Scolytidae
Siricidae
Nematodes
<i>Bursaphelenchus xylophilus</i>

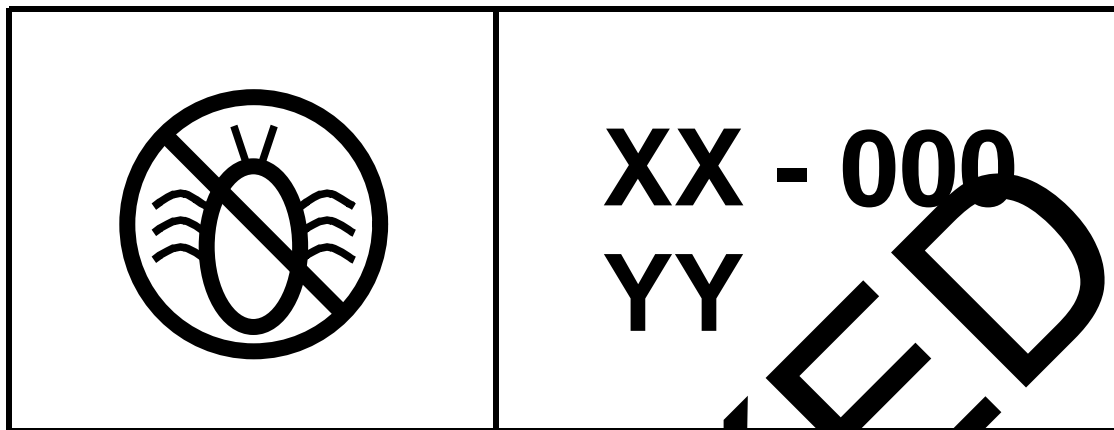
³ A minimum core temperature of 56° C for a minimum of 30 min. is chosen in consideration of the wide range of pests for which this combination is documented to be lethal and a commercially feasible treatment. Although it is recognized that some pests are known to have a higher thermal tolerance, quarantine pests in this category are managed by NPPOs on a case by case basis.

⁴ Certain countries require that the minimum commodity temp should be higher

ANNEX II

MARKING FOR APPROVED MEASURES

The mark shown below is to certify that the wood packaging material that bears the mark has been subjected to an approved measure.



The mark should at minimum include the:

- symbol
- ISO two letter country code followed by a unique number assigned by the NPPO to the producer of the wood packaging material, who is responsible for ensuring appropriate wood is used and properly marked
- IPPC abbreviation according to Annex I for the approved measure used (e.g. HT, MB).

NPPOs, producers or suppliers may at their discretion add control numbers or other information used for identifying specific lots. Where debarking is required the letters DB should be added to the abbreviation of the approved measure. Other information may also be included provided it is not confusing, misleading, or deceptive.

Markings should be:

- according to the model shown here
- legible
- permanent and not transferable
- placed in a visible location, preferably on at least two opposite sides of the article being certified.

The use of red or orange should be avoided since these colors are used in the labeling of dangerous goods.

Recycled, remanufactured or repaired wood packaging material should be re-certified and re-marked. All components of such material should have been treated.

Shippers should be encouraged to use appropriately marked wood for dunnage.

MEASURES BEING CONSIDERED FOR APPROVAL UNDER THIS STANDARD

Treatments⁵ being considered and which may be approved when appropriate data becomes available, include but are not limited to:

Fumigation

Phosphine
Sulfuryl fluoride
Carbonyl sulphide

CPI

High-pressure/vacuum process
Double vacuum process
Hot and cold open tank process
Sap displacement method

Irradiation

Gamma radiation
X-rays
Microwaves
Infra red
Electron beam treatment

Controlled atmosphere

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⁵ Certain treatments such as phosphine fumigation and some CPI treatments are generally believed to be very effective but at present lack experimental data concerning efficacy which would allow them to be approved measures. This present lack of data is specifically in relation to the elimination of raw wood pests present at the time of application of the treatment.

For further information on international standards, guidelines and recommendations concerning phytosanitary measures, and the complete list of current publications, please contact the:

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INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES (ISPMs)

New Revised Text of the International Plant Protection Convention, 1997. FAO, Rome.
ISPM Pub. No. 1: *Principles of plant quarantine as related to international trade*, 1995. FAO, Rome.
ISPM Pub. No. 2: *Guidelines for pest risk analysis*, 1996. FAO, Rome.
ISPM Pub. No. 3: *Code of conduct for the import and release of exotic biological control agents*, 1996. FAO, Rome.
ISPM Pub. No. 4: *Requirements for the establishment of pest free areas*, 1996. FAO, Rome.
ISPM Pub. No. 5: *Glossary of phytosanitary terms*, 1999. FAO, Rome.
Glossary Supplement No. 1: *Guidelines on the interpretation and application of the concept of official control for regulated pests*, 2001. FAO, Rome.
ISPM Pub. No. 6: *Guidelines for surveillance*, 1997. FAO, Rome.
ISPM Pub. No. 7: *Export certification system*, 1997. FAO, Rome.
ISPM Pub. No. 8: *Determination of pest status in an area*, 1998. FAO, Rome.
ISPM Pub. No. 9: *Guidelines for pest eradication programmes*, 1998. FAO, Rome.
ISPM Pub. No. 10: *Requirements for the establishment of pest free places of production and pest free production sites*, 1999. FAO, Rome.
ISPM Pub. No. 11: *Pest risk analysis for quarantine pests*, 2001. FAO, Rome.
ISPM Pub. No. 12: *Guidelines for phytosanitary certificates*, 2001. FAO, Rome.
ISPM Pub. No. 13: *Guidelines for the certification of non-compliance and emergency action*, 2001. FAO, Rome.
ISPM Pub. No. 14: *The use of integrated measures in a systems approach for pest risk management*, 2002. FAO, Rome.
ISPM Pub. No. 15: *Guidelines for regulating wood packaging material in international trade*, 2002. FAO, Rome.
ISPM Pub. No. 16: *Regulation of non-quarantine pests: concept and application*, 2002. FAO, Rome.
ISPM Pub. No. 17: *Pest reporting*, 2002. FAO, Rome.