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INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

DETERMINATION OF PEST STATUS IN AN AREA



Secretariat of the International Plant Protection Convention
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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 November 1998.

Jacques Diouf
Director-General
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Review and amendment

International standards for phytosanitary measures are subject to periodic review and amendment. The next review date for this standard is 2003, 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.

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
- InterAfrican Phytosanitary Council
- North American Plant Protection Organization
- Organismo Internacional Regional de Sanidad Agropecuaria
- Pacific Plant Protection Organization.

INTRODUCTION

SCOPE

This standard describes the content of a pest record, and the use of pest records and other information in the determination of pest status in an area. Descriptions of pest status categories are provided as well as recommendations for good reporting practices.

REFERENCES

- Glossary of phytosanitary terms*, 1999. ISPM Pub. No. 5, FAO, Rome.
Guidelines for pest eradication programmes, 1999. ISPM Pub. No. 9, FAO, Rome.
Guidelines for pest risk analysis, 1996. ISPM Pub. No. 2, FAO, Rome.
Guidelines for surveillance, 1998. ISPM Pub. No. 6, FAO, Rome.
International Plant Protection Convention, 1992. FAO, Rome.
New Revised Text of the International Plant Protection Convention, 1997. FAO, Rome.
Principles of plant quarantine as related to international trade, 1995. ISPM Pub. No. 1, FAO, Rome.
Requirements for the establishment of pest free areas, 1996. ISPM Pub. No.4, FAO, Rome.

DEFINITIONS AND ABBREVIATIONS

Area	An officially defined country, part of a country or all or parts of several countries.
Delimiting survey	Survey conducted to establish the boundaries of an area considered to be infested by or free from a pest.
Detection survey	Survey conducted in an area to determine if pests are present.
Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry.
Interception (of a pest)	The detection of a pest during inspection or testing of an imported consignment.
IPPC	Abbreviation for the International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended.

Monitoring survey	Ongoing survey to verify the characteristics of a pest population.
National Plant Protection Organization (NPPO)	Official service established by a government to discharge the functions specified by the IPPC.
Occurrence	The presence in an area of a pest officially reported to be indigenous or introduced and/or not officially reported to have been eradicated.
Official	Established, authorized or performed by a National Plant Protection Organization.
Outbreak	An isolated pest population, recently detected and expected to survive for the immediate future.
Pest	Any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products.
Pest free area (PFA)	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained.
Pest record	A document providing information concerning the presence or absence of a specific pest at a particular location at a certain time, within an area (usually a country) under described circumstances.
Pest status (in an area)	Presence or absence, at the present time, of a pest in an area, including where appropriate its distribution, as officially determined using expert judgement on the basis of current and historical pest records and other information.
Phytosanitary measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests.
Phytosanitary regulation	Official rule to prevent the introduction and/or spread of pests, by regulating the production, movement or existence of commodities or other articles, or the normal activity of persons, and by establishing procedures for phytosanitary certification.

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.
Regional Plant Protection Organization (RPPO)	An intergovernmental organization with the functions laid down by Article IX of the IPPC.
Regulated pest	A quarantine pest or a regulated non-quarantine pest.
Surveillance	An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures.
Survey	An official procedure conducted over a defined period of time to determine the characteristics of a pest population or to determine which species occur in an area.
Transience	Presence of a pest that is not expected to lead to establishment.

OUTLINE OF REQUIREMENTS

Pest records are essential components of the information used to establish the status of a pest in an area. All importing and exporting countries need information concerning the status of pests for risk analyses, the establishment of and compliance with import regulations, and the establishment and maintenance of pest free areas.

A *pest record* provides information concerning the presence or absence of a pest, the time and location of the observations, host(s) where appropriate, the damage observed, as well as references or other relevant information pertaining to a single observation. The reliability of pest records is based on consideration of the data in regard to the collector/identifier, the means of technical identification, the location and date of the record, and the recording/publication of the record.

The *determination of pest status* requires expert judgement concerning the information available on the present-day occurrence of a pest in an area. Pest status is determined using information from individual pest records, pest records from surveys, data on pest absence, findings of general surveillance, and scientific publications and databases.

Pest status is outlined in this standard in terms of three categories incorporating various final determinations:

- *presence* of the pest - leading to determinations such as “present in all parts of the country”, “present in some areas only”, etc.
- *absence* of the pest - leading to determinations such as “no pest records”, “pest eradicated”, “pest no longer present”, etc.
- *transience* of the pest - leading to determinations such as “non-actionable”, “actionable, under surveillance”, and “actionable, under eradication”.

To facilitate international cooperation among contracting parties in meeting their obligations in reporting the occurrence, outbreak or spread of pests, the National Plant Protection Organizations (NPPOs), or other organizations or persons involved in recording the presence, absence, or transience of pests, should follow good reporting practices. These practices concern the use of accurate, reliable data for pest records, the sharing of pest status information in a timely manner, respecting the legitimate interests of all parties concerned, and taking into account the pest status determinations in this standard.

GENERAL REQUIREMENTS FOR DETERMINATION OF PEST STATUS

1. Purposes of Pest Status Determination

A pest record is documented evidence¹ that indicates the presence or absence of a specific pest at a particular location and certain time, within an area, usually a country, under described circumstances. Pest records are used in conjunction with other information for the determination of the status of the given pest in the area.

In general, the provision of reliable pest records and the determination of pest status are vital components of a number of activities covered under the International Plant Protection Convention (IPPC) and by the principles noted in the ISPM No. 1: *Principles of plant quarantine as related to international trade*, and the international standards for phytosanitary measures that have been developed from them.

Importing countries need pest status information to:

- conduct a pest risk analysis (PRA) on a pest in another country
- establish phytosanitary regulations to prevent the entry, establishment or spread of a pest
- conduct a PRA on a non-quarantine pest in their own territory with a view to regulating it.

Exporting countries need pest status information to:

- comply with import regulations by not exporting consignments infested with the regulated pests of the importing country
- meet requests for information from other countries for the purpose of PRA on pests in their territory.

All countries may use pest status information for:

- PRA purposes
- planning national, regional or international pest management programmes
- establishing national pest lists
- establishing and maintaining pest free areas.

Information on the status of a pest in areas, countries and regions may be used to establish the global distribution of a pest.

¹ Including electronic documentation.

2. Pest Records

2.1 Pest record

The ISPM No. 6: *Guidelines for surveillance* describes the elements of information from general surveillance and specific surveys that may be included in a pest record. The basic information needed in a pest record includes the following:

- current scientific name of the organism including, as appropriate, subspecific terms (strain, biotype, etc.)
- life stage or state
- taxonomic group
- identification method
- year, and month if known, recorded; normally the day will only be required for specific circumstances (e.g. the first detection of a particular pest, pest monitoring)
- locality, e.g. location codes, addresses, geographical coordinates; important conditions such as if under protected cultivation (e.g. greenhouses) should be indicated
- scientific name of host, as appropriate
- host damage, or circumstances of collection (e.g. trap or soil sample), as appropriate
- prevalence, indication of the level of pest presence or pest numbers
- bibliographical references, if any.

A list of references is noted in the Appendix to this standard for consultation in the preparation of a pest record.

2.2 Reliability

Pest record information is available from many sources and has varying levels of reliability. Some key components are identified in the following table. Although the table ranks the categories in descending order of relative reliability, it must be recognized that these are not rigid and are only designed to provide guidance in evaluating the record. In particular, it should be noted that pests differ in the level of expertise needed for their identification.

NPPOs have responsibility to provide accurate information on pest records upon request.

Table. Guidance for Evaluating the Reliability of a Pest Record (Sources listed from most reliable to least reliable).

1. Collectors / Identifiers	2. Technical identification	3. Location and date	4. Recording / Publication
a. Taxonomic specialist	a. Discriminating biochemical or molecular diagnosis (if available)	a. Delimiting or detection surveys	a. NPPO record/RPPO publication (where refereed)
b. Professional specialist, diagnostician	b. Specimen or culture maintained in official collection, taxonomic description by specialist	b. Other field or production surveys	b. Scientific or technical journal refereed
c. Scientist	c. Specimen in general collection	c. Casual or incidental field observation, possibly with no defined location/date	c. Official historical record
d. Technician	d. Description and photo	d. Observation with/in products or by-products; interception	d. Scientific or technical journal non-refereed
e. Expert amateur	e. Visual description only	e. Precise location and date not known	e. Specialist amateur publication
f. Non-specialist	f. Method of identification not known		f. Unpublished scientific or technical document
g. Collector/identifier not known			g. Non-technical publication; periodical/newspaper
			h. Personal communication; unpublished

3. Pest Status in an Area

3.1 Describing pest status in an area

Determination of pest status requires expert judgement on the current distribution of a pest in an area. This judgement is based on a synthesis of pest records and information from other sources. Both current and historical records are used in assessing the present-day situation. Pest status can be described under the following categories:

3.1.1 Presence

A pest is present if records indicate that it is indigenous or introduced. If a pest is present and sufficient reliable records are available, then it may be possible to characterize its distribution using phrases, or a combinations of phrases, such as the following examples:

Present: in all parts of the area

Present: only in some areas²

Present: except in specified pest free areas

Present: in all parts of the area where host crop(s) are grown

Present: only in some areas where host crop(s) are grown³

Present: only in protected cultivation

Present: seasonally

Present: but managed⁴

Present: subject to official control

Present: under eradication

Present: at low prevalence.

Other similar descriptive phrases may be used, as appropriate. If few reliable records are available, it will be difficult to characterize the distribution.

As appropriate, it is useful to characterize the prevalence of the pest (e.g. common, occasional, rare), and the level of damage and/or losses caused by the pest on relevant hosts.

3.1.2 Absence

If there are no records of the presence of the pest in the general surveillance data of an area, it may be reasonable to conclude that a pest is or has always been absent. This may be supported by specific records of absence.

It is also possible to conclude that a pest is absent even if there are pest records suggesting the contrary. These different situations are described below. Absence may also be confirmed by specific surveys (see ISPM No. 6: *Guidelines for surveillance*) and, in that case, the phrase “**confirmed by survey**” should then be added. Similarly, when a pest free area is established according to the appropriate ISPM, (see ISPM No. 4: *Requirements for the establishment of pest free areas*) the phrase “Pest free area declared” should be added.

² Specify where possible.

³ Specify where possible.

⁴ According to: (details to be listed).

Absent: no pest records

General surveillance indicates that the pest is absent now and has never been recorded.

Absent: pest eradicated

Pest records indicate that the pest was present in the past. A documented pest eradication programme was conducted and was successful (see ISPM No. 9: *Guidelines for pest eradication programmes*). Surveillance confirms continued absence.

Absent: pest no longer present

Pest records indicate that the pest was transient or established in the past, but general surveillance indicates the pest is no longer present. The reason(s) may include:

- climate or other natural limitation to pest perpetuation
- changes in hosts cultivated
- changes in cultivars
- changes in agricultural practices.

Absent: pest records invalid

Pest records indicate the presence of a pest, but the conclusion is reached that the records are invalid or no longer valid, as in the following officially declared cases:

- changes in taxonomy
- misidentification
- erroneous record
- changes in national borders where reinterpretation of the record may be needed.

Absent: pest records unreliable

Pest records indicate the presence of a pest, but the determination leads to the conclusion that the records are unreliable, as in the following officially declared cases:

- ambiguous nomenclature
- outdated identification or diagnostic methods
- records cannot be considered reliable (see Table).

Absent: intercepted only

The pest has only been reported on consignments at a point of entry or initial destination or while under detention before release, treatment or destruction. Surveillance confirms that the pest has not established.

3.1.3 Transience

Pest status is considered transient when a pest is present but establishment is not expected to occur based on technical evaluation. There are three types of transience:

Transient: non-actionable

The pest has only been detected as an individual occurrence or isolated population not expected to survive and no phytosanitary measures have been applied.

Transient: actionable, under surveillance

The pest has been detected as an individual occurrence or an isolated population that may survive into the immediate future, but is not expected to establish. Appropriate phytosanitary measures, including surveillance are being applied.

Transient: actionable, under eradication

The pest has been detected as an isolated population which may survive into the immediate future and, without phytosanitary measures for eradication, may establish. Appropriate phytosanitary measures have been applied for its eradication.

3.2 Determination of pest status in an area

Determination of the status of a pest is provided by an NPPO. It results in deciding upon the most appropriate description of the pest status in an area (see Section 3.1) based on supporting information. This may include:

- individual pest records
- pest records from surveys
- records or other indication of pest absence
- results of general surveillance
- information from scientific publications and databases
- phytosanitary measures used to prevent introduction or spread
- other information relevant to assessing pest absence or presence.

The reliability and consistency of the information should be considered. In particular, careful judgement is needed when there is conflicting information.

4. Recommended Reporting Practices

Contracting parties have obligations under the IPPC (see New Revised Text: Article VIII 1a) to report “the occurrence, outbreak or spread of pests”, of which, in the terms of this standard, information pertaining to “pest status in an area” is a part. This standard is not concerned with reporting obligations, but with the quality of the reported information. Accurate reports are an essential part of the international cooperation to facilitate trade. Failure to discover and report pests, or inaccurate, incomplete, untimely, or misinterpreted reports can lead to the establishment of unjustified trade barriers, or to the introduction and/or spread of pests.

Persons or organizations involved in collecting pest records should follow the recommendations in this standard, and provide the NPPO with accurate and complete details before reporting the information generally.

To observe good reporting practices, NPPOs should:

- base determinations of pest status in an area on the most reliable and timely information available
- take into account the categories and pest status determinations set out in this standard when exchanging pest status information between countries
- inform the NPPO of trading partners as soon as possible, and their Regional Plant Protection Organization (RPPO) where appropriate, of relevant changes in pest status and especially reports of newly established pests
- report interceptions of regulated pests which suggest a change in pest status in the exporting country to other countries only after consultation with the exporting country
- when becoming aware of an otherwise unreported record of a pest in another country, the NPPO may report it to other countries or RPPOs only after informing and where possible consulting with the NPPO concerned
- exchange pest status information in conformity with Articles VII (2j) and VIII (1a and 1c) of the IPPC to the extent practicable, and in a medium and language acceptable to both parties.
- correct erroneous records as soon as possible.

Appendix. Useful References.

This listing is for reference purposes only. The references here are widely available, easily accessible and generally recognized as authoritative. The list is not comprehensive or static, nor is it endorsed as a standard under this ISPM.

Nomenclature, Terminology and General Taxonomy

Bayer coding system, 1996. European and Mediterranean Plant Protection Organization, Paris, France.

BioNET-INTERNATIONAL: global network for Biosystematics. CAB International, Wallingford, UK.

Codes for the representation of names of countries, ISO 3166. International Organization for Standards, Geneva, Switzerland (English/French).

Dictionnaire des agents pathogènes des plantes cultivées, 1992. I. Fiala & F. Fèvre, Institut National de la Recherche Agronomique, Paris, France (English/French/Latin).

Glossary of plant pathological terms, 1997. M.C. Shurtleff & C.W. Averre, American Phytopathological Society, St. Paul MN, USA.

Glossary of phytosanitary terms, 1999. ISPM Pub. No. 5, FAO, Rome, Italy (Arabic/Chinese/English/French/Spanish).

International code of botanical nomenclature. International Botanical Congress.

International code of nomenclature for cultivated plants. International Bureau for Plant Taxonomy and Nomenclature, Utrecht, Netherlands.

International code of zoological nomenclature. International Commission on Zoological Nomenclature.

United Nations Terminology Bulletin No. 347, 1995. Office of Conference and Support Services, United Nations, NY (UN Member names in Arabic/Chinese/English/French/Russian/Spanish).

General Pest Identification and Distribution

CABPEST CD-ROM. CAB International, Wallingford, UK.

Crop protection compendium CD-ROM. CAB International, Wallingford, UK.

Descriptions of fungi and bacteria. CAB International, Surrey, UK.

Distribution maps of pests. CAB International, Wallingford, UK.

Hojas de datos sobre plagas y enfermedades agrícolas de importancia cuarentenaria para los países miembros del OIRSA, volúmenes 1-4, 1994-1996. Organismo Internacional Regional de Sanidad Agropecuaria, El Salvador.

Mammal species of the world: a taxonomic and geographical reference, 1982. Honacki *et al.* eds, Allen Press Inc., Kansas, USA.

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Bacteria

Guide to plant pathogenic bacteria, 2nd ed., 1997. J.F. Bradbury & G.S. Saddler, CAB International Mycological Institute, Surrey, UK.

Names of plant pathogenic bacteria 1864-1995, 1996. J. Young *et al.*, *Ann. Rev. Phytopathology*: 721-763.

Fungi

Ainsworth & Bisby's dictionary of the fungi, 8th ed., 1995. D.L. Hawksworth *et al.*, CAB International Mycological Institute, Surrey, UK.

Index of fungi. CAB International Mycological Institute, Surrey, UK.

Insects and Mites

ANI-CD: Arthropod name index on CD-ROM. CAB International, Wallingford, UK.

Insects of economic importance: a checklist of preferred names, 1989. A.M. Wood, CAB International, Wallingford, UK.

Nematodes

Aphelenchidae, Longidoridae and Trichodoridae: their systematics and bionomics, 1993. D.J. Hunt, CAB International, Wallingford, UK.

Catalog of the Order Tylenchida, 1991. B.A. Ebsary, Agriculture Canada.

NEMA-CD-ROM. CAB International, Wallingford, UK.

Plant Diseases

Common names for plant diseases, 1996. Compiled by APS Committee on Standardization of Common Names for Plant Diseases, American Phytopathological Society, St. Paul, MN, USA. Searchable on the APSnet Internet site at: <http://www.scisoc.org/resource/common/>.

Disease Compendium Series, American Phytopathological Society, St. Paul, MN, USA.

Distribution maps of plant diseases. CAB International, Wallingford, UK.

Multilingual compendium of plant diseases, vols. 1 (1976), 2 (1977). American Phytopathological Society, St. Paul MN, USA (Crosslingual: 23 languages).

Plant diseases of international importance, 4 vols., 1992. Prentice Hall, NJ, USA.

Plants and Weeds

A checklist of names for 3,000 vascular plants of economic importance. Rev., 1986. E. Terrell *et al.*, USDA Agricultural Research Service, Washington DC, USA.

Grass Weeds 1 (1980), Grass Weeds 2 (1981), Monocot Weeds 3 (1982). Ciba-Geigy Ltd., Basle, Switzerland (English/French/German/Spanish).

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Virus taxonomy: classification and nomenclature of viruses, 1995. F.A. Murphy *et al.* eds, Sixth Report of the International Committee on Taxonomy of Viruses. Archives of Virology/Supplement 10, Springer Verlag, Vienna, New York. The *Index virum* files are searchable on the Internet at: <http://life.anu.edu.au/viruses/Ictv/index.html>.

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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