INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 35

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Protecting the world's plant resources from pests

ISPM 35

ENG

Systems approach for pest risk management of fruit flies (Tephritidae)

Produced by the Secretariat of the
International Plant Protection Convention (IPPC)

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INTERNATIONAL STANDARDS FOR
PHYTOSANITARY MEASURES

ISPM 35

Systems approach for pest risk management of fruit flies (Tephritidae)

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This is not an official part of the standard

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ISPM 35. 2012. *Systems approach for pest risk management of fruit flies (Tephritidae)*. Rome, IPPC, FAO.

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Adoption

This standard was adopted by the Seventh Session of the Commission on Phytosanitary Measures in March 2012.

INTRODUCTION

Scope

This standard provides guidelines for the development, implementation and verification of integrated measures in a systems approach as an option for pest risk management of fruit flies (Tephritidae) of economic importance.

References

The present standard refers to International Standards for Phytosanitary Measures (ISPMs). ISPMs are available on the International Phytosanitary Portal (IPP) at https://www.ippc.int/core-activities/standards-setting/ispms.

IPPC. *International Plant Protection Convention*. Rome, IPPC, FAO.

Definitions

Definition of phytosanitary terms used in the present standard can be found in ISPM 5 (*Glossary of phytosanitary terms*).

Outline of Requirements

For the development of a systems approach for fruit flies (FF SA), the relationship between host, target fruit fly species and the area of production of the host fruits and vegetables[1] should be considered. The options for pest risk management measures should be determined by means of pest risk analysis (PRA).

An FF SA includes at least two independent measures, which may be applied throughout various stages of the process, specifically during the growing period and harvest; post-harvest and transportation; and entry and distribution within the importing country. An FF SA may be developed in an area of low pest prevalence or temporary or localized pest absence of the target fruit fly species in combination with other measures (such as selection of less susceptible hosts, crop management practices or post-harvest handling) to reduce pest risk to meet the phytosanitary requirements of the importing country.

For development, implementation and verification of an FF SA, operational procedures are necessary. Conformity with these procedures should be ensured and verified by the national plant protection organization (NPPO) of the exporting country. Procedures should be monitored during the implementation and corrective actions should be taken in case of non-conformity.

The development, implementation and verification of an FF SA should be adequately documented and the documentation reviewed and updated when necessary by the NPPO of the exporting country.

[1] Fruits and vegetables hereafter are referred to as fruits.

BACKGROUND

Many species of fruit flies of the family Tephritidae are pests of economic importance and their introduction may pose a pest risk. To identify and manage the target fruit fly species risk, a PRA should be conducted by the NPPO of the importing country and phytosanitary measures may be applied (ISPM 2 (*Framework for pest risk analysis*), ISPM 11 (*Pest risk analysis for quarantine pests*)).

Systems approaches have been developed as pest risk management measures in situations where a single measure is not available or practicable, or in cases where a systems approach is more cost-effective than the single measure available. The decision to implement a specific FF SA depends on the particular relationship between the host fruit, the target fruit fly species and the specified fruit production area.

A systems approach requires a combination of at least two measures that are independent of each other, and may include any number of measures that are dependent on each other (ISPM 14 (*The use of integrated measures in a systems approach for pest risk management*)). Treatments used in an FF SA are those not considered sufficiently efficacious to be applied as a single measure. The measures may be applied in different places at different times and may therefore involve a number of organizations and individuals.

Often, countries have used phytosanitary measures such as treatments or pest free areas for fruit flies (FF-PFAs) (ISPM 26 (*Establishment of pest free areas for fruit flies (Tephritidae)*)) to support import or movement of host fruit. In other cases, prohibition has been applied. An FF SA may be an alternative to facilitate the export and movement of fruit fly hosts into endangered areas. NPPOs may recognize FF SAs as being equivalent to single measures. The exporting country may seek formal approval of equivalence of these measures with the importing country. In cases where an effective FF SA has been implemented, components of those systems may be used by other importing and exporting countries to facilitate the movement of fruit from areas with similar conditions.

An FF SA can be applied in an area of fruit production as small as a production site or as large as a country.

REQUIREMENTS

1. Decision to Implement an FF SA

It is the responsibility of the importing country to establish and communicate its technically justified phytosanitary import requirements. A combination of pest risk management measures integrated into an FF SA is one of the options that the importing country may select as the basis for phytosanitary import requirements (ISPM 14).

The development of an FF SA is the responsibility of the NPPO of the exporting country. An FF SA may be developed and implemented in cases where:

(1) The importing country, in its phytosanitary import requirements, specifies a systems approach to be used in the exporting country.

(2) The importing country does not explicitly require a systems approach, but the NPPO of the exporting country deems a systems approach to be a suitable and effective approach for achieving the importing country's phytosanitary import requirements. The exporting country may need to negotiate formal approval of the equivalence of measures with the importing country (ISPM 24 (*Guidelines for the determination and recognition of equivalence of phytosanitary measures*)).

An FF SA should have the appropriate combination of measures to achieve the appropriate level of protection. They should be scientifically sound and be selected to meet the phytosanitary import

requirements. Aspects of operational feasibility include cost-effectiveness of the measures to be applied while seeking to impose the least restrictive measures necessary to manage target fruit fly species risks.

The fruit production area proposed for implementing an FF SA should be defined and the participating producers should be approved by the NPPO of the exporting country.

It may be advisable that NPPOs involve other stakeholders in the development of an FF SA (ISPM 2).

Basic information required for the development of an FF SA includes the following:

- The host should be identified to the species level. In cases, where risk varies with the variety (e.g. because of varying tolerance to infestation), hosts should be identified to variety level.
- The stage of maturity of the fruit being examined is relevant (e.g. physiologically mature bananas are recognized as not being suitable hosts for fruit flies).
- Data on the target fruit fly species associated with the host should be available (such as scientific name, pest incidence and its fluctuation, and host preference).
- The fruit production area defined for implementing an FF SA should be described and adequately documented with particular attention to host distribution in commercial areas as well as non-commercial areas, if appropriate.

In practice, FF SAs may be applied to one or more hosts or target fruit fly species in the same fruit production area.

2. Development of an FF SA

Measures may be applied at various stages from production of fruit within the exporting country to distribution within the importing country. The NPPO of the importing country may also implement one or more measures on arrival of the consignment. Measures applied at the different stages to prevent fruit fly infestation may include:

Pre-planting

- selecting planting sites with low pest incidence of target fruit fly species (e.g. areas of low pest prevalence, areas unsuitable because of geographic location, altitude, climate)
- selection of less susceptible fruit species or varieties
- sanitation
- managing hosts other than the crop
- intercropping with non-fruit fly host plants
- growing host fruit during specific periods when the pest incidence of target fruit fly species is low or temporally absent.

Growing period

- flowering control and timing fruit production
- chemical control such as insecticide bait treatments, bait stations, male annihilation technique, and biological control such as natural enemies
- physical protection mechanisms (e.g. bagging fruit, fruit fly protected structures)
- sterile insect technique
- mass trapping
- management of non-commercial hosts within the production area (e.g. elimination or replacement of other host plants by non-host plants where appropriate)
- monitoring and survey of the target fruit fly species e.g. using traps or fruit sampling
- sanitation (i.e. collection, removal and appropriate disposal of fallen fruit from the orchard or removal of mature fruit from the tree)

- fruit stripping.

Harvest
- harvest at a specific stage of fruit development or time of the year
- safeguarding activities to prevent infestation at harvest
- surveillance including fruit cutting
- sanitation (e.g. safe removal and disposal of fallen fruit).

Post-harvest and handling
- safeguarding activities to prevent infestation, for example chilling fruit, refrigerated transport, processing in screen-protected packing rooms, warehouses and transit conveyances, using cold storage, wrapping of fruit
- monitoring for target fruit fly species absence by trapping in and around packing houses
- sanitation (e.g. removal of fruit with signs of infestation (culling) in packing houses)
- sampling, inspection (e.g. by fruit cutting) or testing
- treatments that are not considered sufficiently efficacious as a single measure
- packing requirements (e.g. using insect-proof packages)
- ensuring traceability of lots.

Transportation and distribution
- safeguarding activities to prevent target fruit fly species infestation
- treatments that are not considered sufficiently efficacious as a single measure (prior to, during or after transport)
- distribution limited geographically or seasonally to areas where or periods when target fruit fly species cannot establish or where suitable hosts are not present.

Measures applied to several or all stages
- community awareness programmes to generate support from the public
- movement control of host fruit and other pathways into the area (e.g. requirements for production sites or islands).

3. Documentation and Record-Keeping

The development, implementation and verification of an FF SA should be properly documented by the NPPO of the exporting country. The roles and responsibilities of the NPPOs of the exporting and importing countries should be specified and documented. The documentation and records should be reviewed and updated regularly, maintained for at least 24 months and made available to the NPPO of the importing country upon request.

Documentation may include:
- phytosanitary import requirements and, if available, a report of the pest risk analysis
- identifying and describing the measures for reducing risk
- description of the requirements for an FF SA's operational procedures
- description of the area intended for an FF SA
- description of host fruit to be exported and target fruit fly species
- details of the organizations involved and their roles and responsibilities and any linkages, including for example:
    . registration of organizations involved or stakeholders
    . agreement to cooperate in surveillance and control procedures

  - . conformity with FF SA requirements (origin of fruit, movement from place of production, selection and packing of fruit, transportation and safeguarding of the fruit)
  - . agreement to take appropriate corrective actions
  - . keeping records and making them available
- pest surveillance and control programme
- survey results
- training programme for FF SA participants
- traceability procedures
- technical basis for specific procedures
- survey, detection and diagnostic methodology
- description of corrective actions and records of follow-up
- reviews of the implementation of an FF SA
- contingency plans.

4. Verification

The measures in an FF SA should be implemented in accordance with the officially approved procedures and should be monitored by the NPPO of the exporting country to ensure the system achieves its objectives.

The NPPO of the exporting country has the responsibility to monitor the implementation and the effectiveness of all stages of an FF SA. In cases where the operational procedures of an FF SA were properly implemented, but one or more of the components did not provide sufficient pest risk management to give the required effectiveness of all stages, a revision of an FF SA should be conducted to ensure that phytosanitary import requirements are met. This revision may not necessarily involve the suspension of trade. Other components of an FF SA may not need to be verified again. The frequency of verification should be influenced by the design of the FF SA.

The NPPO of the importing country may audit an FF SA in agreement with the NPPO of the exporting country.

5. Tolerance Level

In many cases, the basis for developing an FF SA may be that the target fruit fly species incidence is kept at or below a tolerance level (in connection with fruit flies, the term “specified pest population level” has sometimes been used instead of “tolerance level”) specified by the NPPO of the importing country in the defined area, for example an area of low pest prevalence (ALPP). This may be as a result of a naturally low target fruit fly species incidence or as a result of the implementation of control measures.

Evidence to support that the target fruit fly species incidence is kept at or below the specified tolerance level may be required and, if so, should be obtained as a result of trapping and fruit sampling. Surveillance of target fruit fly species incidence may be conducted not only during the growing period of the host fruit but also during non-growing periods.

6. Non-conformity and Non-compliance

Non-conformity involves incorrect implementation or failure of an FF SA. In such cases, the NPPO of the exporting country may suspend the trade from the non-conforming component of the FF SA until corrective actions have been taken to address the non-conformity. Non-conformity may occur in one or more stages of an FF SA. It is important to identify at which stage the non-conformity has occurred.

The NPPO of the exporting country should notify the NPPO of the importing country of any non-conformity that may have affected a shipment or phytosanitary certification.

The NPPO of the importing country should notify the NPPO of the exporting country of any non-compliances (see ISPM 13 (*Guidelines for the notification of non-compliance and emergency action*)).

IPPC

The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect cultivated and wild plants by preventing the introduction and spread of pests. International travel and trade are greater than ever before. As people and commodities move around the world, organisms that present risks to plants travel with them.

Organization

- There are over 180 contracting parties to the IPPC.
- Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- Nine regional plant protection organizations (RPPOs) work to facilitate the implementation of the IPPC in countries.
- IPPC liaises with relevant international organizations to help build regional and national capacities.
- The Secretariat is provided by the Food and Agriculture Organization of the United Nations (FAO).

International Plant Protection Convention (IPPC)

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