



NAPPO Regional Standards for Phytosanitary Measures (RSPM)

RSPM No. 17

Guidelines for the Establishment, Maintenance and Verification of Fruit Fly Pest Free Areas in North America

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Review

NAPPO Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review date for this NAPPO standard is 2009. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

Approval

This standard was approved by the North American Plant Protection Organization (NAPPO) Executive Committee on October 17, 2004, and is effective immediately.

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Implementation

See the attached Implementation Plans for implementation dates in each NAPPO country.

Amendment Record

Amendments to this Standard will be dated and filed with the NAPPO Secretariat. The most recent version will be posted on the NAPPO website at: www.nappo.org/stds_e.htm

Distribution

This standard is distributed by the Secretariat of the NAPPO within NAPPO, including Sustaining Associate Members and Industry Advisory Groups, to the FAO IPPC Secretariat, to the ICGPP, and to the Administrative Heads of the Regional Plant Protection Organizations (RPPOs).

Introduction

Scope

This standard provides the guidelines to establish, maintain and verify fruit fly free areas in North America. The target fruit fly pests for this standard include insects of the order Diptera, family Tephritidae, belonging to the genera *Anastrepha*, *Bactrocera*, *Ceratitis*, *Dacus*, *Rhagoletis* and *Toxotrypana*. It also describes the role of the National Plant Protection Organization (NPPO) to ensure compliance with this standard.

References

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- Glossary of Phytosanitary Terms*. 2004, ISPM No. 5, FAO, Rome
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- Guidelines for Surveillance*, 1997. ISPM No. 6, FAO, Rome.
- National Exotic Fruit Fly Trapping Protocol*, 1991, USDA-APHIS-PPQ
- Norma Oficial Mexicana NOM-023-FITO-1995, Por la que se Establece la Campaña Nacional Contra Moscas de la fruta*. 1999, SAGAR
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- Requirements for the Establishment of Pest Free Areas*, 1996. ISPM No. 4, FAO, Rome.
- Requirements for the Establishment of Pest Free Places of Production and Pest Free Production Sites*, 1999. ISPM No. 10, FAO, Rome.
- Standard for Pest Free Areas*, 1994. NAPPO
- Trapping Guidelines for Area-Wide Fruit Fly Programmes*, 2003. FAO IAEA, Vienna.
- Work Plan for the Sonora Fruit Fly Free Zone Program for the 1990 Export Season*. Bilingual English-Spanish, SARH/DGSV-USDA/APHIS, 21 pp.

Definitions, Abbreviations and Acronyms

buffer zone	An area in which a specific pest does not occur or occurs at a low level and is officially controlled, that either encloses or is adjacent to an infested area, an infested place of production, a pest free area, a pest free place of production, or a pest free production site, and in which phytosanitary measures are taken to prevent spread of the pest. (FAO)
delimiting survey	Survey conducted to establish the boundaries of an area considered to be infested by or free from a pest. (FAO)
detection	The discovery of a specimen of the target pest. (New)
emergency action	A prompt phytosanitary action undertaken in a new or unexpected phytosanitary situation. (FAO)
FAO	Acronym for Food and Agriculture Organization. (FAO)
IPPC	International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended. (FAO)
NAPPO	Acronym for North American Plant Protection Organization. (NAPPO)
National Plant Protection Organization (NPPO)	Official service established by a government to discharge the functions specified by the IPPC. (FAO)
official	Established, authorized or performed by a National Plant Protection Organization. (FAO)
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. (FAO)
Pest free place of production	Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period. (FAO)
Pest free production site	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production. (FAO)
phytosanitary action	An official operation, such as inspection, testing, surveillance or treatment, undertaken to implement phytosanitary regulations or procedures. (FAO)

phytosanitary measure	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)
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)
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)
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)
regulated article	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)
standard	Document established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. (FAO)
surveillance	An official process that collects and records data on pest occurrence or absence by survey, monitoring or other procedures. (FAO)
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. (FAO, 2004)
treatment	Officially authorized procedure for the killing or removal of pests or rendering pests infertile. (FAO)

Outline of Requirements

This standard provides procedures for establishment, maintenance, and verification of Pest Free Areas (PFA) for fruit flies. The standard outlines measures to eliminate the risk of introduction and establishment of the pest, criteria for monitoring fruit flies, quarantine operations, and emergency

planning. The procedures necessary for suspension, termination, and reinstatement of the PFA are included. A checklist of elements to be evaluated is contained in the Appendix.

This standard is consistent with other NAPPO and International Standards for Phytosanitary Measures (ISPMs). This revised standard incorporates relevant portions of, and supercedes, RSPM No. 10. A bilateral workplan may be required to elaborate on the issues described in this standard.

Background

A fruit fly free area can occur naturally, or may be established through a coordinated control and eradication program. If no geographic or biological barriers exist to prevent introduction of fruit flies into the free area from adjacent infested areas, then it is necessary to establish a buffer zone. The nature of the control measures employed and the size of the buffer zone will depend upon the particular characteristics of each PFA. In the context of this standard, a PFA can include pest free places of production and pest free production sites.

Fruit flies of the family Tephritidae are among the most injurious pests of fruits and vegetables in the world. Presence of species in this family not only has a negative effect on the economy of many countries, but also has international implications. In the Americas for example, *Ceratitis capitata* and *Anastrepha ludens* cause economic losses from direct crop damage as well as from quarantine regulations that restrict movement of fruits and vegetables from infested areas. Fruit flies constitute an important barrier to the export of these products, thereby limiting the trade potential of fruit-producing countries.

Postharvest quarantine treatments are used to reduce the risk of moving fruit flies out of infested areas. The primary treatment, methyl bromide fumigation, may become unavailable because of possible negative effects on human health and the environment. Therefore, development of alternative treatments such as vapour heat, hot water, irradiation, and cold treatment, should continue to be a priority of exporting countries.

Establishment of areas free of fruit flies is a viable alternative to quarantine treatments. The PFA concept is designed to produce plants and/or plant products that have minimal phytosanitary restrictions placed upon them. The intent is that fruits and vegetables from these areas can be moved domestically or internationally without postharvest treatment.

Requirements

1 Establishment of Fruit Fly Pest Free Areas

Prior to designating an area as free of fruit flies, the NPPO should ensure that the area meets the requirements of this standard and the relevant International Standards for Phytosanitary Measures, in particular ISPM No. 4-*Requirements for the Establishment of Pest Free*.

The NPPO of the country seeking recognition of a fruit fly PFA should document the following geographic, surveillance, and other technical information.

1.1 Geographic Description

1.1.1 The proposed PFA should be described, with supporting maps demonstrating boundaries of the area, places of production, and isolation of the area by a natural barrier.

1.1.2 In the absence of a natural isolating barrier, the steps taken to create a buffer zone adjacent to the PFA should be described with supporting maps and documentation.

1.2 Movement controls

Regulatory movement controls may be required to prevent the entry of target pests into the proposed PFA during the establishment phase. These include:

- Identification of the pathways and regulated articles that require control to establish the proposed PFA.
- If needed, establishment of an inspection program for regulated articles moving into the proposed PFA. This program should include sampling records, identification of intercepted specimens, verification of documents, confirmation that required treatments occurred, and documentation of any other phytosanitary procedures.

1.3 Surveillance activities

1.3.1 Survey data should be documented for at least one calendar year demonstrating that populations of fruit flies are not established in commercial, non-commercial, or wild hosts in the proposed PFA.

1.3.2 Technical reports of fruit fly detections, phytosanitary procedures applied, and results of the survey activities should be produced monthly for a minimum of one year prior to recognition of the PFA.

1.3.3 Traps should be placed in host plants with abundant foliage, preferably while the plants are bearing fruit. Host plants that are likely to receive applications of pesticides should be avoided. Therefore, a minimum of two (2) alternative locations per trap should be

identified. The traps should not hang below the foliage of the tree, nor should the entrance of the trap be obstructed by the tree's foliage. Traps should be relocated every 12 weeks.

1.3.4 Surveys should be conducted under the following guidelines. These guidelines may be revised as trap and lure efficiencies improve. Any modifications shall be delineated in the bilateral workplan.

1.3.4.1 Surveys for fruit flies that do not respond to parapheromones should be conducted with a trap such as the invaginated McPhail or Multilure baited with hydrolyzed protein, the Pherocon AM using ammonium acetate, or an accepted equivalent trap/bait combination with recommended baiting interval. Minimum trap density should be 4 traps per km² (10 traps per mi²), serviced at least once every 2 weeks.

1.3.4.2 Surveys for fruit flies that respond to parapheromones should be conducted with the Jackson trap (or other traps with demonstrated equal or better efficiency, e.g., yellow panel traps, the three component lure traps) baited with trimedlure, ceralure, capilure, cuelure, or methyl eugenol as appropriate. The bait servicing interval should follow recommended guidelines. For species that respond to trimedlure, ceralure, capilure, or cuelure, the minimum trap density should be 2 traps per km² (5 traps per mi²), serviced at least once every 2 weeks. For species that respond to methyl eugenol, the minimum trap density should be 1 trap per km² (3 traps per mi²), serviced at least once every 2 weeks.

1.3.4.3 The NPPO should establish a quality control program for the survey to verify and document that all protocols are met. The key elements of the quality control program would include: verification of lure efficacy, placement and recovery of marked target flies, regular reviews of survey documentation, audits of trap placement and servicing, and confirmation of identifier competency.

1.4 Other Technical Information

- Historical records of detection, population dynamics, and survey activities for the designated target pest(s) in the proposed PFA should be retained.
- Records of the commercial production of host crops in the area, and an estimate of non-commercial production, and the presence of wild host material, should be retained.
- If detections of fruit flies have occurred in the proposed PFA, the phytosanitary measures taken and the results of those measures should be documented.
- An official list of the other target pest species that may be present in the proposed PFA should be established.

2 Maintenance of Fruit Fly Pest Free Areas

In order to maintain the PFA status the NPPO should document movement controls and surveillance activities. The movement controls and surveillance activities described in sections 1.2 and 1.3 are required to be applied on an ongoing basis to maintain fruit fly pest free area status. However, the following distinctions apply to surveillance for maintenance of a fruit fly pest free area, as opposed to establishment:

2.1 Surveillance Activities

The duration of trapping should extend beyond the flight period of the target pest(s). The pre-season and post-season trapping periods and the trap service schedule are dependent upon the target species and the prevailing climatic conditions. Traps should be relocated every 12 weeks. A minimum of two (2) alternative locations per trap should be identified in accordance with these guidelines. Surveillance parameters may be detailed in a bilateral workplan.

2.1.1 Traps for survey of target pest(s) that do not respond to parapheromones should be as described in sections 1.3.3 and 1.3.5.1, with densities as described below. Trap service should be done at least once every two weeks. Minimum trap density should be:

- 4 traps per km² (10 traps per mi²) in commercial production areas less than 5 km from urban and suburban areas.
- 2 traps per km² (5 traps per mi²) in commercial production areas more than 5 km from urban and suburban areas.

2.1.2 Traps for survey of the target pest(s) that respond to parapheromones should be as described in Section sections 1.3.3 and 1.3.5.2, with densities as described below. Trap service should be at least once every two weeks. Minimum trap density should be as follows:

2.1.2.1 For species that respond to trimedlure, ceralure, capilure, or cuelure:

- 2 traps per km² (5 traps per mi²) in commercial production areas less than 5 km from urban and suburban areas.
- 1 trap per km² (3 traps per mi²) in commercial production areas more than 5 km from urban and suburban areas.

2.1.2.2 For species that respond to methyl eugenol:

- 1 trap per km² (3 traps per mi²) in commercial production areas less than 5 km from urban and suburban areas.
- 1 trap per 2 km² (3 traps per 2 mi²) in commercial production areas more than 5 km from urban and suburban areas.

2.1.3 Specimen Identification and Reporting

All specimens captured should be identified to species and sex within 4 days of their capture to determine if they are quarantine fruit flies. IPPC pest reporting obligations apply, as described in ISPM No. 17, *Pest Reporting*.

2.1.4 The NPPO should establish a quality control program for the survey to confirm and document that all protocols are met. The key elements of the quality control program should include: verification of lure efficacy, placement and recovery of marked target flies, regular reviews of survey documentation, audits of trap placement and servicing, and confirmation of identifier competency.

3. Verification of Fruit Fly Pest Free Areas

The NPPO should verify that the requirements to maintain the PFA continue to be met. In addition to the surveillance activities and movement controls detailed in this standard, routine inspection and fruit sampling in the PFA should be carried out. The absence of reports of target pests on commodities moved out of the PFA can contribute to verification that the PFA is being maintained.

4. Change in the Pest Free Area Status

The detection of an adult target pest(s) within the PFA should result in the implementation of the emergency action plan as specified in Section 5 of this standard and immediate notification of trading partners. Confirmation of a reproducing population (e.g., fertilized female) of the target pest(s) in the PFA or detection of target pest(s) during inspection of host products (e.g., larvae or pupae) should result in immediate suspension of the PFA status. PFA status may be terminated if appropriate emergency measures are not taken in response to the detection of a target pest. Trading partners should also be notified immediately of any change in PFA status.

If the target pest is detected in a limited area that can be identified and isolated, then the PFA may be redefined to exclude the infested area.

The PFA status should be terminated if it is determined that the target pest is established in the PFA.

Failure to apply phytosanitary measures necessary to maintain the PFA may result in termination of the PFA status.

5. Emergency Action Plan

The NPPO should have a documented plan of emergency actions to be implemented if the target pest is detected in the PFA. The emergency actions should be initiated within 48 hours of the capture of an adult target pest in the surveillance program or an immature life stage is found in the fruit. Failure to implement emergency actions should result in termination of PFA status.

6 Reinstatement of the Pest Free Area Status

Eradication of the target pest and implementation of other phytosanitary measures are the basis for reinstatement of the PFA status.

7 Documentation

Documentation supporting PFA status should be available to the importing country upon request.

8 Bilateral Workplans

A PFA may form a critical element of a bilateral workplan to facilitate trade of fruit. Further details on the elaboration of workplans are contained in the NAPPO RSPM No. 19, *Guidelines for Bilateral Workplans*. It is recommended that workplans related to fruit fly PFAs include the following parameters on identification:

- all fruit fly specimens captured should be identified by the authorized person(s) to species and sex within 4 days of their capture to determine if they are quarantine pests.
- within 24 hours after positive identification of a quarantine fruit fly capture, the NPPO of the exporting country should notify the NPPO of the importing country in writing, the location where the fruit fly was trapped, as well as the sex and physiological state of captured specimens.

Appendix

The following is a list of elements that should be evaluated to determine if a PFA meets the conditions of this standard:

1. Geographic description of the proposed PFA
 - a. maps
 - b. places of production
 - c. natural barriers
 - d. buffer zone
 - e. size
 - f. location of regulatory control check points
2. Survey protocols for establishment and maintenance of PFA
 - a. trap type
 - b. bait or lure type
 - c. target pest
 - d. density of traps
 - e. servicing intervals
 - f. reporting of survey results
3. Quality control protocols for surveillance
 - a. verification of lure efficacy
 - b. placement and recovery of marked target flies
 - c. regular reviews of survey documentation
 - d. audits of trap placement and servicing
 - e. confirmation of identifier competency
4. Movement controls
 - a. sampling records
 - b. identification of intercepted specimens
 - c. verification of documents
 - d. confirmation that required treatments occurred
 - e. documentation of any other phytosanitary procedures
5. Emergency Action Plan
 - a. trigger for plan implementation
 - b. delimiting survey
 - c. mitigation measures