



NAPPO Regional Standards for Phytosanitary Measures (RSPM)

RSPM No. 16

Guidelines for the Importation of Citrus Propagative Material into a NAPPO Member Country

North American Plant Protection Organization Secretariat
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Review

NAPPO Regional Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review date for this NAPPO standard is 2013. This Standard was last reviewed in 2008. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

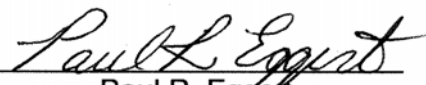
Approval

This standard was updated and approved by the North American Plant Protection Organization (NAPPO) Executive Committee on October 20, 2008, and is effective immediately.

Approved by:



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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.

Distribution

This standard is distributed by the NAPPO Secretariat, to the Industry Advisory Group and Sustaining Associate Members, the International Plant Protection Convention (IPCC) Secretariat, and to other Regional Plant Protection Organizations (RPPOs).

Introduction

Scope

This standard establishes the guidelines for the importation of citrus propagative material into NAPPO countries.

It deals with regulated pests transmitted by citrus propagative material.

References

Determination of pest status in an area, 1998. ISPM No. 8 FAO, Rome.

Framework for pest risk analysis, 2007. ISPM No.2, FAO, Rome.

Glossary of phytosanitary terms, 2008. ISPM No. 5, FAO, Rome.

Glossary of phytosanitary terms, 2008. RSPM No. 5, NAPPO.

Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade, 2006, ISPM No. 1, FAO, Rome.

The Accreditation of Laboratories for Phytosanitary Testing, 2004, RSPM No. 9, NAPPO.

Definitions, Abbreviations, Acronyms

certificate	An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations (FAO)
ELISA	Enzyme - linked Immunosorbent Assay (NAPPO)
IPPC	International Plant Protection Convention as deposited in 1951 with FAO in Rome and as subsequently amended (FAO)
NPPO	National Plant Protection Organization (FAO)
official	Established, authorized or performed by a National Plant Protection Organization (FAO)
PCR	Polymerase Chain Reaction (NAPPO)
pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (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 certificate	Certificate patterned after the model certificates of the IPPC (FAO)
place of production	Any premises or collection of fields operated as a single production or farming unit. This may include production sites which are separately managed for phytosanitary purposes (FAO)
plant quarantine	All activities designed to prevent the introduction and/or spread of quarantine pests or to ensure their official control (FAO)
propagative plant material	Plants or plant parts for planting or multiplication (NAPPO).
quality system	Organizational structure, procedures, processes and resources needed to implement quality management (NAPPO)
quarantine	Official confinement of regulated articles for observation and research or for further inspection, testing and/or treatment (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 non-quarantine pest	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (FAO)
regulated pest	A quarantine pest or a regulated non-quarantine pest (FAO)
RT-PCR	Reverse Transcription-Polymerase Chain Reaction (NAPPO)
sPAGE	Sequential Polyacrylamide Gel Electrophoresis (NAPPO)
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; ISO/IEC GUIDE 2:1991 definition)

Outline of Requirements

This standard describes the general and specific requirements for the importation of citrus propagative materials to reduce the risk of the introduction and spread of regulated pests into NAPPO member countries.

1. General Requirements

Citrus propagative materials that are to be imported into a NAPPO member country should:

- come from places of production that are disease tested and certified/registered by NPPO of the exporting country;
- be imported pursuant to specific permit conditions of the importing country; and
- be accompanied by a certificate which confirms that the importing country requirements have been met.

2. Specific Requirements

2.1 Certification/Registration Programs for Citrus Propagative Materials Places of Production

Participating NAPPO countries will establish a program to inspect, test and certify/register all places of production from which citrus propagative materials are collected in order to prevent the spread of specific pests and diseases that are transmitted or spread by these propagative materials.

These certified/registered places of production should be maintained by the NPPO, or its designated agency (e.g. state, university or private entity). Lists of certified/registered places of production shall be provided to the importing country NPPO annually. Any change in the certification/registration program or the list of approved places of production should be reported to the NPPO of the importing country.

2.2 Roles and Responsibilities

The NPPO or its designated agency shall specify the roles and responsibilities of all individuals and organizations participating in the certification/registration program, including laboratories, according to RSPM No. 9, *The Accreditation of Laboratories for Phytosanitary Testing*. The NPPO or its designated agency shall also ensure that all staff employed in the program meet appropriate training, experience, educational, and proficiency requirements. A designated agency shall inform its country's NPPO of any changes to its certification/registration program, including testing procedures.

2.3 Terminology

The citrus certification/registration program of each NAPPO country should contain a section in which all terminology specific to that program will be defined in sufficient detail for a clear understanding of the requirements.

2.4 Agronomic Requirements

The citrus certification/registration program shall require that places of production of citrus propagative material be kept in good agronomic condition.

2.5 Isolation and Sanitation

Certified/registered citrus propagative material must comply with sanitary and isolation standards established by the importing country.

2.6 Inspection and Testing

The citrus certification/registration program shall specify the inspection and testing requirements for certified/registered citrus propagative material. Collection of samples and pest diagnostics should be done as necessary at the appropriate time for detection of these pests and using approved methods (see Annexes 1 and 2).

2.7 Documentation and Identification

The certification/registration program shall develop, use and retain forms for reporting inspection and testing results to ensure eligibility and status of places of production, certification of laboratories, and compliance with regulatory requirements of the certification/registration program. Donor plants from certified/registered places of production must be accurately identified. Records required by the certified/registered program for the propagative material donor plants must be maintained during the plant's useful life, and for at least 1 additional year.

2.8 Quality System

The NPPO shall ensure that a quality system is in place to ensure validity and reliability of the certification/registration program.

2.9 Permits

The importing country NPPO will normally require permits for all importation of citrus propagative material into NAPPO member countries. Permits will be used to establish levels of quarantine security required to handle the propagative material, so that only approved facilities are used. The choice as to where inspection and testing is to be conducted is the decision of the importing country NPPO. Permits may require that approved testing for specified pests be conducted at origin, destination or both. At a minimum, permits will specify the required testing and the facilities where propagative material will be held prior to release from quarantine.

2.10 Inspection and Testing

Imported citrus propagative material may be subjected to inspection and testing in the country of origin and/or upon arrival or final destination in the importing country, (see Annexes 1 and 2) using approved inspection methods and diagnostic tests in laboratories approved/accredited according to RSPM No. 9.

2.11 Eligibility for Export of Citrus Propagative Materials

All places of production wishing to supply citrus propagative materials for export must be certified/registered by their NPPO. Prior to export, representatives of the NPPO of the importing country or their designates, may inspect and/or test places of production interested in exporting citrus propagative material. Only those places of production certified/registered by the importing country will be permitted to export citrus propagative material.

2.12 Non-compliance and Remedial Measures

Certification/registration may be suspended pending determination of the extent of non-compliance and the determination of what remedial measures are necessary to reinstate the place of production. Non-compliance may be due to the presence of a regulated pest or mistakes in documentation. Criteria for reinstatement should be included in the NPPO's certification/registration program.

2.13 Bilateral Workplans

Exporting and importing country NPPOs may decide that a bilateral workplan is necessary to elaborate on these guidelines (e.g. to identify actions to be taken when a problem occurs). Modifications to these guidelines should be technically justified.

Presence or absence, unless otherwise noted, conform to the categories listed in the International Standard for Phytosanitary Measures No. 8, entitled "*Determination of Pest Status in an Area*". For ease of reference alpha-numeric designations have been added here.

Ab1:	Absent: no pest records
Ab2:	Absent: pest eradicated
Ab3:	Absent: pest no longer present
Ab4:	Absent: pest records invalid
Ab5:	Absent: pest records unreliable
Ab6:	Absent: intercepted only
Ab7:	Absence: confirmed by survey
Ab8:	Absence: pest free area declared
P1:	Present: in all parts of the area
P2:	Present: only in some areas
P3:	Present: except in specified pest free areas
P4:	Present: in all parts of the area where host crop(s) are grown
P5:	Present: only in some areas where host crop(s) are grown
P6:	Present: only in protected cultivation
P7:	Present: seasonally
P8:	Present: but managed
P9:	Present: subject to official control
P10:	Present: under eradication
P11:	Present: at low prevalence.
P12:	Present: not associated with host crop (NAPPO category)

Annex 1: Regulated Diseases and Pathogens of Citrus Propagative Material: Presence or Absence in NAPPO Member Countries and Accepted Diagnostic Tests.

Disease	Pathogen	Presence/Absence		Accepted Diagnostic Tests
		USA	MEXICO	
<u>Viruses</u>				
Tristeza (Quick decline, Stem pitting, Seedling yellows)	<i>Citrus tristeza closterovirus</i> (CTV)	P4 and P9 (CA)	P4 and P9	Index on Mexican lime and/or Inmunoimpresion or ELISA
Concave gum Psorosis A, & B (including ringspot)	<i>Citrus psorosis ophiovirus</i> (CPsV-A, CPsV-B)	P4	P4	Index on sweet orange or Dweet Tangor
Infectious variegation Leaf rugose Crinkly leaf	<i>Citrus variegation ilarvirus</i> <i>Citrus leaf rugose ilarvirus</i> <i>Citrus crinkly leaf ilarvirus</i>	P5 (FL)	Ab1	Index on lemon (eureka) seedlings, sour orange and citron.
Leprosis	<i>Citrus leprosis rhabdovirus</i> (CiLV)	Ab4 (FL)	P5, P10 (CHIS, TAB)	Index on sweet orange seedling, TEM, RT-PCR
Satsuma dwarf	<i>Satsuma dwarf virus</i> (SDV)	Ab1	Ab1	Index on Satsuma mandarin, Tangor Dweet, White sesame (<i>Sesamum indicum</i>), ELISA
Tatter leaf-Citrange stunt	<i>Apple stem grooving capillovirus</i> (ASGV) syn. Citrus tatter leaf virus (CTLV)	P5 (CA, AZ, TX and FL)	Ab1	Index on Rusk citrange, <i>Citrus excelsa</i> .
Leaf blotch and Dweet Mottle	<i>Citrus leaf blotch virus</i> (CLBV) and Dweet mottle virus (DMV)	P5 (FL)	Ab1	Index on Dweet tangor, RT-PCR
Yellow mosaic	<i>Citrus yellow mosaic badnavirus</i> (CYMV)	Ab1	Ab1	Index on mosambi and satgudi sweet orange or pummelo seedlings, ELISA
<u>Viroids</u>				
Exocortis	<i>Citrus exocortis viroid</i> (CEVd)	P4	P4	Index on Etrog citron Arizona 861-S1
Cachexia, Xyloporosis	<i>Hop stunt viroid</i> (HSVd), Citrus variants of HSVd, Citrus viroid IIb (CVd-IIb), Citrus viroid IIc (CVd-IIc)	P4	P4	Etrog citron Arizona 861-S1 for tissue production used in RT-PCR or Imprint Hybridization
Various citrus growth abnormalities and symptomatologies related to citrus viroids	<i>Citrus bent leaf viroid</i> (CBLVd)-syn. CVd-I HSVd-Citrus variant: CVd-IIa <i>Citrus viroid III</i> (CVd-III) (Proposed citrus dwarfing viroid) <i>Citrus viroid IV</i> (CVd-IV)- (Proposed citrus bark cracking viroid) Citrus viroid V (CV d-V)	P4	Ab1	Index on Etrog citron Arizona 861-S1 and tissue production used in RT-PCR or Imprint Hybridization for HSVd-Citrus variant: CVd-IIa

Disease	Pathogen	Presence/Absence		Accepted Diagnostic Tests
		USA	MEXICO	
<u>Bacteria</u>				
Citrus Canker	<i>Xanthomonas axonopodis</i> pv. Citri (Hasse) Vauterin <i>et al.</i>	P5	Ab1	Culturing, ELISA, PCR, detached leaf bio-assay
Huanglongbing (HLB)	<i>Candidatus Liberibacter asiaticus</i> , <i>C.L. africanus</i> and <i>C.L. americanus</i>	P5 and P9 (<i>C. L. asiaticus</i> in FL, LA)	Ab1	Index on sweet orange seedling, PCR, Hybridization (DNA)
Citrus variegated chlorosis (CVC)	<i>Xylella fastidiosa</i> (Wells <i>et al.</i>) (CVC Strain)	Ab1	Ab1	PCR + sequencing and culturing
<u>Mollicutes</u>				
Stubborn	<i>Spiroplasma citri</i> (Saglio <i>et al.</i>)	P5 (CA,AZ)	Ab1	Culture
Witches'-broom Disease of lime	<i>Candidatus Phytoplasma aurantifolia</i> (Zreik <i>et al.</i>)	Ab1	Ab1	Indexing on Mexican Lime, PCR
<u>Uncharacterized-Unknown</u>				
Citrus chlorotic dwarf	Uncharacterized, probable virus	Ab1	Ab1	Indexing on rough lemon
Sudden death	Unknown, probable Tymovirus (Citrus sudden death-associated virus) Other viruses possibly associated	Ab1	Ab1	No accepted diagnostic test. For Tymovirus: PCR
Australian dieback	Uncharacterized, probably phytoplasma	Ab1	Ab1	Index on sweet orange or grapefruit, PCR
Vein enation-woody gall	Unknown, probable Luteovirus	P5 (CA)	Ab1	Index on Mexican lime, sour orange
Gummy bark	Unknown, probable CVd-IIc variant	Ab1	Ab1	Index on sweet orange
Blight	Unknown	P5 (FL)	P5 (YUC)	No accepted diagnostic test. Dot immunobinding assay (DIBA)
Concave gum	Unknown, presumed virus-like	P5 (CA)	Ab5	Index on Dweet tangor or sweet orange seedlings
Cristacortis	Unknown, presumed virus-like	Ab1	Ab1	Index on sweet orange or Orlando tangelo
Impietratura	Unknown, presumed virus-like	Ab1	Ab1	Index on sweet orange Dweet tangor

Annex 2: Regulated Insects, Mites and Nematodes for Citrus Propagative Material: Presence or Absence in Citrus Producing NAPPO Member Countries and Accepted Identification Tests.

Scientific name	Common Name	Common name US	Family	Presence/Absence		Diagnostic
				US	Mexico	
<i>Panonychus citri</i> (McGregor)	Ácaro de los cítricos	Citrus red mite	Tetranychidae	P4	P5 (MOR, PUE, VER)	Microscopic analysis
<i>Polyphagotarsonemus latus</i> (Banks)	Ácaro amarillo	Broad mite	Tarsonemidae	P4	P12	Microscopic analysis
<i>Tetranychus cinnabarinus</i> (Boisduval)	Araña roja	Carmine spider mite	Tetranychidae	P4	P4	Microscopic analysis
<i>Tetranychus urticae</i> (Koch)	Acara común	Twospotted mite	Tetranychidae	P4	P4	Microscopic analysis
<i>Eotetranychus sexmaculatus</i> (Riley)	Ácaro de los seis puntos	Sixspotted mite	Tetranychidae	P4 (AZ, CA, FL, TX)	Ab1	Microscopic analysis
<i>Ferrisia virgata</i> (Cockerell)	Cochinilla enbandada	striped mealybug	Pseudococcidae	P2 (FL, LA, MD, MS, NM, PA, TX)	P4	Microscopic analysis
<i>Maconellicoccus hirsutus</i> (Green)	Cochinilla rosada	Pink hibiscus mealybug	Pseudococcidae	P2 (CA, FL, HI, LA) and P9 (FL)	P2 and P9 (BC, NAY, JAL, Q. ROO, OAX) and P10 (OAX)	Microscopic analysis
<i>Planococcus citri</i> (Risso)	Cochinilla harinosa de los cítricos	Citrus mealybug	Pseudococcidae	P5 (FL, CA, AZ)	P5 (VER, NL)	Microscopic analysis
<i>Pseudococcus longispinus</i> (Targioni Tozzetti)	Chinche harinosa	Long-tailed mealybug	Pseudococcidae	P5 (AZ, CA, FL, TX)	P5 (NAY)	Microscopic analysis
<i>Aonidiella aurantii</i> (Maskell)	Escama roja de California	California red scale	Diaspididae	P5 (AZ, CA, FL, TX)	P2	Microscopic analysis
<i>Aonidiella citrina</i> (Coquillett)	Escama amarilla de los cítricos	Yellow scale	Diaspididae	P2 (CA, FL, TX)	P2	Microscopic analysis
<i>Icerya purchasi</i> (Maskell)	Escama algodonosa de los cítricos	Cottony cushion scale	Margarodidae	P5	P2	Microscopic analysis

Scientific name	Common Name	Common name US	Family	Presence/Absence		Diagnostic
				US	Mexico	
<i>Coccus hesperidum</i> Linnaeus	Escama parda blanca	Brown soft scale	Coccidae	P5	P2	Microscopic analysis
<i>Scirtothrips citri</i> (Moulton)	Thrips del naranjo	Citrus thrips	Thripidae	P4 (CA, AZ) and P5 (FL)	P2 NL, SON, TAM)	Microscopic analysis
<i>Toxoptera citricida</i> (Kirkaldy)	Pulgón café de los cítricos	Brown citrus aphid	Aphididae	P5 (FL, HI)	P5 and P9 (CAMP, CHIS, OAX, PUE, Q. ROO, TAB, VER, YUC)	Microscopic analysis
<i>Tylenchulus semipenetrans</i> (Cobb)	Nematodo de los cítricos	Citrus nematode	Tylenchidae	P5 (AZ, CA, FL, HI, LA, TX)	P4	Microscopic analysis
<i>Radopholus similis</i> (Siddiqi)	Nematodo barrenador	Burrowing nematodes	Pratylenchidae	P5 (FL, HI, LA, TX)	P4 (CHIS, TAB)	Microscopic analysis
<i>Xiphinema americanum</i> (Cobb)	Nematodo daga Americano	Dagger nematode	Longidoridae	P5 (CA)	P1	Microscopic analysis
<i>Xiphinema index</i> (Thorne & Allen)	Nematodo daga vector de virus en viñedos	Dagger nematode	Longidoridae	P5 (CA)	Ab1	Microscopic analysis
<i>Diaphorina citri</i> Kuwayama	Psílido asiático de los cítricos	Asian citrus psyllid	Psyllidae	P5 and P9 (AL, CA, FL, GA, GU, HI, LA, MS, PR, SC, TX)	P4 (Except for BC and North of Sonora)	Microscopic analysis
<i>Trioza erythrae</i> (Del Guercio)	Psílicos africano de los cítricos	African citrus psyllid	Psyllidae	Ab1	Ab1	Microscopic analysis
<i>Brevipalpus spp.</i>	Ácaro	Mite	Tenuipalpidae	P5	P5	Microscopic analysis
<i>Marmara gulosa</i> Guillen and Davis	Minador de la cascara	Peel miner	Gracillariidae	P5	Ab1	Microscopic analysis
<i>Phyllocnistis citrella</i> Stainton	Minador citrella	Citrus leaf miner	Gracillariidae	P5	P5	Microscopic analysis