



NAPPO

North American Plant Protection Organization
Organización Norteamericana de Protección a las Plantas

NAPPO Regional Standards for Phytosanitary Measures (RSPM)

RSPM 26

Certification of commercial arthropod biological control agents or non-*Apis* pollinators moving into NAPPO member countries

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Review

NAPPO Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review for this Standard is 2020. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

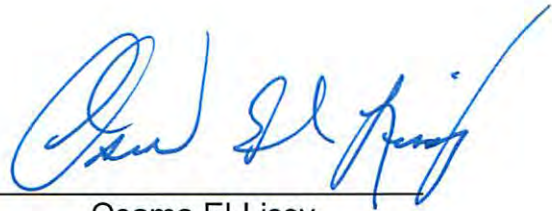
Approval

This standard was approved by the North American Plant Protection Organization (NAPPO) Executive Committee on October 15, 2006, revised on July 23, 2012, and on October 26, 2015 and is effective immediately.


Approved by:



Greg Wolff
Executive Committee Member
Canada



Osama El-Lissy
Executive Committee Member
United States



Francisco Javier Trujillo Arriaga
Executive Committee Member
Mexico

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 (IAG) and Sustaining Associate Members (SAM), the International Plant Protection Convention (IPCC) Secretariat, and to other Regional Plant Protection Organizations (RPPOs).

Background

Commercial arthropod biological control agents (CABCA) are arthropods that are natural enemies used for pest control, commercially produced in a rearing facility with a protected environment for at least one complete generation. Non-*Apis* pollinators (NAP) are insects that are used for crop pollination, commercially produced in a rearing facility with a protected environment for at least one complete generation. Each NAPPO member country may have different processes for approving the importation and release of CABCA or NAP into the environment. The vast majority of trade in these organisms is of genera and species that have a long history of use in the NAPPO countries. In addition, they are produced under controlled conditions in a rearing facility with a protected environment, and they have a production history that can be easily traced. They are sealed in packaging, which reduces the risk of contamination during the handling and shipping processes and of unintentional release. Finally, CABCA or NAP can be readily tracked from production to release, by shipping documents, including commercial invoices. Such CABCA or NAP have been approved by regulatory authorities and pose very little risk to agriculture and the natural environment. Biological control agents are generally highly perishable and delays in shipping may be detrimental to product quality. A additional information about requirements for importation and release of CABCA and NAP can be found in ISPM 3: 2005 and ISPM 5, as well as RSPM 5, RSPM 7: 2015, RSPM 12: 2015, RSPM 22: 2011 and RSPM 29: 2015.,

Scope

This standard provides guidelines on the content and use of a letter of certification to facilitate the movement of CABCA or NAP into NAPPO member countries. It lists the related responsibilities of the National Plant Protection Organizations (NPPOs), producers, importers and exporters. This standard applies only to those CABCA or NAP that meet all the import requirements of the importing NPPO.

References

ISPM 3. 2005. *Guidelines for the export, shipment, import and release of biological control agents and other beneficial organisms*. Rome, IPPC, FAO.

ISPM 5. (Updated annually). *Glossary of phytosanitary terms*. Rome, IPPC, FAO.

RSPM 5. (Updated annually). *NAPPO glossary of phytosanitary terms*. Ottawa, NAPPO.

RSPM 7. 2015. *Guidelines for petition for first release of non-indigenous phytophagous biological control agents*. Ottawa, NAPPO.

RSPM 12. 2015. *Guidelines for petition for first release of non-indigenous entomophagous biological control agents*. Ottawa, NAPPO.

RSPM 22. 2011. *Guidelines for construction and operation of a containment facility for insects and mites used as biological control agents*. Ottawa, NAPPO.

RSPM 29. 2015. Guidelines for the Petition for First Release of Non-*Apis* Pollinating Insects into NAPPO Countries. Ottawa, NAPPO.

Definitions, Abbreviations and Acronyms

Definitions of phytosanitary terms used in the present standard can be found in NAPPO RSPM 5 and ISPM 5 .

General Requirements

CABCA should only be approved for environmental release based on historical use or regulatory approval following submission of a petition using NAPPO guidelines for entomophagous or phytophagous biological control agents (RSPM 7: 2015 or RSPM 12: 2015) and risk assessment, as appropriate. RSPM 22: 2011 provides information on the design, construction and operation of a facility for the containment of biological control agents (i.e. insects and mites) and associated organisms. NAP should only be approved for environmental release based on regulatory approval following submission of a petition using NAPPO guidelines for first release of non-*Apis* pollinating insects into NAPPO Countries (RSPM 29: 2015) and risk assessment, as appropriate. ISPM 3: 2005 addresses risk analysis for biological control agents, phytosanitary import requirements, relevant documentation, use of quarantine (containment) facilities, and post-release monitoring. It also provides for the use of a specific certification document to cover imports of CABCA or NAP, as well as providing for the use of phytosanitary certificates. NAPPO has determined the requirements for this specific certification document, referred to in this standard as a 'letter of certification for commercial biological control agents.

Specific Requirements

1. Responsibilities of a Producer of Commercial Arthropod Biological Control Agents

- 1.1 The producer of the CABCA or NAP should apply to its NPPO for a letter of certification for each CABCA or NAP that is intended for export to a NAPPO country.
- 1.2 The producer of the CABCA or NAP should provide all necessary information to its NPPO and allow the NPPO unrestricted access to the production facilities for the purpose of inspection.
- 1.3 The producer of the CABCA or NAP should notify their NPPO if there is reason to suspect that the colony may have become contaminated by another organism(s), if the health of the colony declines, or if there is a change in the host material for production of CABCA or NAP or hosts/substrates accompanying packaged consignments.
- 1.4 The producer of the CABCA or NAP should keep a copy of each letter of certification that has been issued. The copy should be retained for two years after expiry of the letter.

2. Responsibilities of the Exporting NPPO

- 2.1 The exporting NPPO should inspect the facility prior to issuing a letter of certification to verify that the CABCA or NAP was produced as described, and under conditions designed to preclude contamination by other organisms and to maintain colony health.
- 2.2 The exporting NPPO should issue a letter of certification addressed to each importing NPPO. A copy should also be retained by the exporting NPPO for two years after validity has expired.
- 2.3 The letter of certification should remain valid for a period of no more than three years from the time of issue. The exporting NPPO should revoke the letter of certification if the information it contains becomes invalid or inaccurate.

3. Purpose of the Letter of Certification

- 3.1 The letter of certification is intended to be used instead of a phytosanitary or zoosanitary certificate. Each CABCA or NAP in a consignment should have a letter of certification in addition to any other documents required by the importing NPPO (e.g., permit to import).
- 3.2 Two copies of each letter of certification should accompany each consignment.
- 3.3 One of these copies may be retained by the importing NPPO at the point of entry.
- 3.4 The importing NPPO should use the letter of certification to verify that the consignment of CABCA or NAP complies with their import requirements.
- 3.5 The importer should retain a copy of the letter of certification for two years after importation.

4. Content of Letter of Certification

- 4.1 A unique number should appear on the letter of certification to facilitate tracking.
- 4.2 The letter of certification should be specific to the producer and should include their name and address.
- 4.3 The letter of certification should be specific to a CABCA or NAP species; if more than one CABCA or NAP species is included in a consignment, a separate letter of certification should be issued for each species.
- 4.4 The letter of certification should specify both the country of production and the country where the culture originated.
- 4.5 All host material for production of CABCA or NAP and that may be included in the final packaged consignment should be identified (e.g., scientific name, life stage).

- 4.6 Any material used as substrate that may be included in the final packaged consignment should be identified (e.g., scientific name, life stage).
- 4.7 The letter of certification of the CABCA or NAP should include a statement of confirmation of identification of the genus and species by an individual who is considered by the exporting NPPO to be a taxonomic specialist.
- 4.8 The letter of certification should indicate the specific location (e.g., national collection) where the reference specimens are held.
- 4.9 A statement verifying the length of time that the CABCA or NAP has been in continuous culture should be included.
- 4.10 The exporting NPPO should verify that the CABCA or NAP is produced in a rearing facility with a protected environment, under conditions that preclude contamination by other organisms, including plant pests, and pathogens, parasites, parasitoids, and hyperparasitoids of the CABCA or NAP .
- 4.11 The letter of certification should be valid for a maximum of three years from the time it is signed by an official of the exporting NPPO.

This appendix was adopted by the NAPPO Executive Committee on July 23, 2012 and revised by the NAPPO Expert Group on Biological Control on July 8, 2015.
The appendix is for reference purposes only and is not a prescriptive part of the standard.

Appendix I: Model Letter of Certification for Commercial Arthropod Biological Control Agents (CABCA)

No. _____

FROM: the National Plant Protection Organization of _____

TO: the National Plant Protection Organization (of ---- _____

I. General Information:

Name and address of producer: _____

Country of production: _____

All host material for production of CABCA that may be included in the final packaged consignment: _____

Substrates accompanying the CABCA: _____

II. Verification of the Taxonomic Identity of the Commercial Arthropod Biological Control Agent

The submitted **CABCA** has been identified as: _____
_____ (*genus, species, author*)

Name of taxonomic specialist: _____

Affiliation of taxonomic specialist: _____

Address, email and phone number of identification expert: _____

Date of identification: _____ Place of identification: _____

Location of reference specimens: _____

III. Description of Commercial Arthropod Biological Control Agent Culture:

The **CABCA** described herein has been under continuous culture at _____ (place) since _____ (date).

The original culture was sourced from _____ (place) on _____ (date).

The **CABCA** described herein has been produced in a rearing facility with a protected environment, for at least one complete generation. It has been produced under conditions that preclude contamination with other organisms including plant pests, and pathogens, parasites, parasitoids, and hyperparasitoids of the CABCA..

Signature:

Signed by: _____ Date: _____

Title: _____ Address: _____

Phone: _____ email: _____

This letter of certification for commercial arthropod biological control agents expires on _____ (day/month/year).

This appendix was adopted by the NAPPO Executive Committee on July 23, 2012 and submitted to annual revision by the NAPPO Expert Group on Biological Control in August, 2014 and August 2015.
The appendix is for reference purposes only and is not a prescriptive part of the standard.

Appendix II: Lists of Biological Control Organisms of Plant Pests Approved for Commercial Importations within the NAPPO Region

United States

Parasitoids

Anagyrus fusciventris (Girault) (HYMENOPTERA: Encyrtidae)
Anaphes flavipes (Forster) (HYMENOPTERA: Mymaridae)
Anaphes iole Girault (HYMENOPTERA: Mymaridae)
Anisopteromalus calandrae (Howard) (HYMENOPTERA: Pteromalidae)
Aphelinus abdominalis Dalman (HYMENOPTERA: Eulophidae)
Aphidius colemani Viereck (HYMENOPTERA: Aphidiidae)
Aphidius ervi Haliday (HYMENOPTERA: Aphidiidae)
Aphidius matricariae Haliday (HYMENOPTERA: Aphidiidae)
Cotesia marginiventris (Cresson) (HYMENOPTERA: Braconidae)
Cotesia vestalis (Haliday) [= *Cotesia plutellae* (Kurdjumov)] (HYMENOPTERA: Braconidae)
Dacnusa sibirica Telenga (HYMENOPTERA: Braconidae)
Diglyphus isaea (Walker) (HYMENOPTERA: Eulophidae)
Encarsia formosa Gahan (HYMENOPTERA: Eulophidae)
Eretmocerus californicus Howard (HYMENOPTERA: Aphelinidae)
Eretmocerus eremicus Rose and Zolnerowich (HYMENOPTERA: Aphelinidae)
Eretmocerus mundus Mercet (HYMENOPTERA: Aphelinidae)
Feltiella acarisuga (Vallot) [= *Therodiplosis persicae* (Vallot)] (DIPTERA: Cecidomyiidae)
Habrobracon hebetor (Say) [= *Bracon hebetor* Say] (HYMENOPTERA: Braconidae)
Leptomastidea abnormis (Girault) (HYMENOPTERA: Encyrtidae)
Leptomastix dactylopii Howard (HYMENOPTERA: Encyrtidae)
Metaphycus helvolus Compere (HYMENOPTERA: Encyrtidae)
Tamaraxia triozae (Burks) [= *Tetrastichus triozae* (Burks)] (HYMENOPTERA: Eulophidae)
Thripoctenus javae (Girault) [= *Thripobius semiluteus* Boucek] (HYMENOPTERA: Pteromalidae)
Trichogramma brassicae Bezdenko (HYMENOPTERA: Trichogrammatidae)
Trichogramma evanescens Westwood (HYMENOPTERA: Trichogrammatidae)
Trichogramma minutum Riley (HYMENOPTERA: Trichogrammatidae)
Trichogramma platneri Nagarkatti (HYMENOPTERA: Trichogrammatidae)
Trichogramma pretiosum Riley (HYMENOPTERA: Trichogrammatidae)

Predators - Mites

Amblyseius andersoni (Chant) [= *Typhlodromus andersoni* Chant] (MESOSTIGMATA: Phytoseiidae)
Gaeolaelaps aculeifer (Canestrini) [= *Hypoaspis aculeifer* (Canestrini)] (MESOSTIGMATA : Laelapidae)
Galendromus occidentalis (Nesbitt) [= *Metaseiulus occidentalis* (Nesbitt); = *Typhlodromus occidentalis* (Nesbitt)] (MESOSTIGMATA: Phytoseiidae)

Iphiseius degenerans Berlese [= *Amblyseius degenerans* (Berlese)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus barkeri Hughes [= *Amblyseius barkeri* (Hughes); = *Typhlodromus barkeri* (Hughes); = *Amblyseius mckenziei* (Hughes)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus californicus (McGregor) [= *Typhlodromus californicus* McGregor; = *Amblyseius californicus* (McGregor)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus cucumeris (Oudemans) [= *Amblyseius cucumeris* (Oudemans); = *Typhlodromus cucumeris* Oudemans] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus fallacis (Garman) [= *Amblyseius fallacis* (Garman); = *Typhlodromus fallacis* (Garman); = *Iphidulus fallacis* Garman] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus setulus (Fox) (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus longipes Evans [= *Mesoseiulus longipes* (Evans) Note: both names may share taxonomic validity] (MESOSTIGMATA : Phytoseiidae)
Phytoseiulus macropilis (Banks) (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus persimilis Athias-Henriot (MESOSTIGMATA: Phytoseiidae)
Stratiolaelaps scimitus (Womersley) [= *Hypoaspis scimitus* (Womersley); often misidentified as *Hypoaspis miles* (Berlese)] (MESOSTIGMATA: Laelapidae)
Typhlodromips swirskii (Athias-Henriot) [= *Amblyseius swirskii* Athias-Henriot] (MESOSTIGMATA: Phytoseiidae)
Typhlodromus pyri Scheuten (MESOSTIGMATA: Phytoseiidae)

Predators - Insects

Adalia bipunctata (Linnaeus) (COLEOPTERA: Coccinellidae)
Aphidoletes aphidimyza Rondani (DIPTERA: Cecidomyiidae)
Atheta coriaria (Kraatz) (COLEOPTERA: Staphylinidae)
Chrysoperla carnea (Stephens) [= *Chrysopa carnea* (Stephens)] (NEUROPTERA: Chrysopidae)
Chrysoperla rufilabris (Burmeister) [= *Chrysopa rufilabris* (Burmeister)] (NEUROPTERA: Chrysopidae)
Coleomegilla maculata DeGeer (COLEOPTERA: Coccinellidae)
Cryptolaemus montrouzieri Mulsant (COLEOPTERA: Coccinellidae)
Delphastus catalinae (Horn) often misidentified as *Delphastus pusillus* (LeConte) (COLEOPTERA: Coccinellidae)
Deraeocoris brevis (Knight) (HEMIPTERA: Miridae)
Dicyphus hesperus Knight (HEMIPTERA: Miridae)
Hippodamia convergens Guérin-Ménéville (COLEOPTERA: Coccinellidae)
Orius insidiosus (Say) (HEMIPTERA: Anthocoridae)
Orius tristicolor (White) (HEMIPTERA: Anthocoridae)
Podisus maculiventris (Say) (HEMIPTERA: Pentatomidae)
Rhyzobius lophanthae Blaisdell [= *Lindorus lophanthae* (Blaisdell)] (COLEOPTERA: Coccinellidae)
Stethorus punctillum Weise (COLEOPTERA: Coccinellidae)
Xylocoris flavipes Reuter (HEMIPTERA: Anthocoridae)

(USDA APHIS PPQ does not regulate the importation or movement of organisms used for the biological control of medical or veterinary pests, such as house flies or stable flies. USDA APHIS Veterinary Services may regulate these organisms.)

Canada

Predatory Mites*

- Amblyseius andersoni* (Chant) [= *Typhlodromus andersoni* Chant] (MESOSTIGMATA: Phytoseiidae)
Gaeolaelaps aculeifer (Canestrini) [= *Hypoaspis aculeifer* (Canestrini)] (MESOSTIGMATA: Laelapidae)
Galendromus occidentalis (Nesbitt) [= *Metaseiulus occidentalis* (Nesbitt); = *Typhlodromus occidentalis* Nesbitt] (MESOSTIGMATA: Phytoseiidae)
Iphiseius degenerans (Berlese) [= *Amblyseius degenerans* (Berlese)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus barkeri Hughes [= *Amblyseius barkeri* (Hughes); *Typhlodromus barkeri* (Hughes); = *Amblyseius mckenziei* Schuster and Pritchard] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus californicus (McGregor) [= *Typhlodromus californicus* McGregor; = *Amblyseius californicus* (McGregor)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus cucumeris (Oudemans) [= *Amblyseius cucumeris* (Oudemans); = *Typhlodromus cucumeris* Oudemans] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus fallacis (Garman) [= *Amblyseius fallacis* (Garman); = *Typhlodromus fallacis* (Garman); = *Iphidulus fallacis* Garman] (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus longipes Evans [= *Mesoseiulus longipes* (Evans)] (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus macropilis (Banks) (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus persimilis Athias-Henriot (MESOSTIGMATA: Phytoseiidae)
Stratiolaelaps scimitus (Womersley) [= *Hypoaspis scimitus* (Womersley); often misidentified as *Hypoaspis miles* (Berlese)] (MESOSTIGMATA: Laelapidae)
Typhlodromus pyri Scheuten (MESOSTIGMATA: Phytoseiidae)
Typhlodromips swirskii (Athias-Henriot) [= *Amblyseius swirskii* Athias-Henriot] (MESOSTIGMATA: Phytoseiidae)

Parasitoids and Predators*

- Anagyrus fusciventris* (Girault) (HYMENOPTERA: Encyrtidae)
Anaphes flavipes (Förster) (HYMENOPTERA: Mymaridae)
Anaphes iole Girault (HYMENOPTERA: Mymaridae)
Anisopteromalus calandrae (Howard) (HYMENOPTERA: Pteromalidae)
Aphelinus abdominalis (Dalman) (HYMENOPTERA: Eulophidae)
Aphidius colemani Viereck (HYMENOPTERA: Braconidae)
Aphidius ervi Haliday (HYMENOPTERA: Braconidae)
Aphidius matricariae Haliday (HYMENOPTERA: Braconidae)
Aphidoletes aphidimyza (Rondani) (DIPTERA: Cecidomyiidae)
Aphytis melinus DeBach (HYMENOPTERA: Aphelinidae)
Atheta coriaria (Kraatz) [= *Dalotia coriaria* (Kraatz)] (COLEOPTERA: Staphylinidae)
Carcinops pumilio (Erichson) (COLEOPTERA: Histeridae)
Chrysoperla carnea (Stephens) [= *Chrysopa carnea* (Stephens)] (NEUROPTERA: Chrysopidae)
Chrysoperla rufilabris (Burmeister) [= *Chrysopa rufilabris* (Burmeister)] (NEUROPTERA: Chrysopidae)
Coleomegilla maculata (DeGeer) (COLEOPTERA: Coccinellidae)
Cotesia flavipes Cameron (HYMENOPTERA: Braconidae)
Cotesia marginiventris (Cresson) (HYMENOPTERA: Braconidae)
Cotesia melanoscela (Ratzeburg) (HYMENOPTERA: Braconidae)

Cotesia vestalis (Haliday) [= *Cotesia plutellae* (Kurdjumov)] (HYMENOPTERA: Braconidae)
Cryptolaemus montrouzieri Mulsant (COLEOPTERA: Coccinellidae)
Dacnusa (Pachysema) sibirica Telenga (HYMENOPTERA: Braconidae)
Delphastus catalinae (Horn) (COLEOPTERA: Coccinellidae)
Delphastus pusillus (LeConte) (COLEOPTERA: Coccinellidae)
Deraeocoris brevis (Knight) (HEMIPTERA: Miridae)
Diaeretiella rapae (Curtis) (HYMENOPTERA: Braconidae)
Dicyphus hesperus Knight (HEMIPTERA: Miridae)
Diglyphus isaea (Walker) (HYMENOPTERA: Eulophidae)
Encarsia formosa Gahan (HYMENOPTERA: Aphelinidae)
Encarsia sophia (Girault & Dodd) (HYMENOPTERA: Aphelinidae)
Eretmocerus californicus Howard (HYMENOPTERA: Aphelinidae)
Eretmocerus eremicus Rose and Zolnerowich (HYMENOPTERA: Aphelinidae)
Eretmocerus mundus Mercet (HYMENOPTERA: Aphelinidae)
Feltiella acarisuga (Vallot) [= *Therodiplosis persicae* (Vallot)] (DIPTERA: Cecidomyiidae)
Habrobracon hebetor (Say) [= *Bracon hebetor* Say] (HYMENOPTERA: Braconidae)
Hippodamia convergens Guérin-Méneville (COLEOPTERA: Coccinellidae)
Leptomastidea abnormis (Girault) (HYMENOPTERA: Encyrtidae)
Leptomastix dactylopii Howard (HYMENOPTERA: Encyrtidae)
Mantis religiosa L. (ORTHOPTERA: Mantidae)
Metaphycus helvolus (Compere) (HYMENOPTERA: Encyrtidae)
Muscidifurax raptor Girault & Saunders (HYMENOPTERA: Pteromalidae)
Muscidifurax raptorellus Kogan & Legner (HYMENOPTERA: Pteromalidae)
Muscidifurax zaraptor Kogan & Legner (HYMENOPTERA: Pteromalidae)
Nasonia vitripennis (Walker) (HYMENOPTERA: Pteromalidae)
Orius insidiosus (Say) (HEMIPTERA: Anthocoridae)
Orius tristicolor (White) (HEMIPTERA: Anthocoridae)
Podisus maculiventris (Say) (HEMIPTERA: Pentatomidae)
Rhyzobius lophanthae Blaisdell [= *Lindorus lophanthae* (Blaisdell)] (COLEOPTERA: Coccinellidae)
Spalangia cameroni Perkins (HYMENOPTERA: Pteromalidae)
Spalangia endius Walker (HYMENOPTERA: Pteromalidae)
Spalangia nigroaenea Curtis (HYMENOPTERA: Pteromalidae)
Stethorus punctillum Weise (COLEOPTERA: Coccinellidae)
Tamaraxia triozae (Burks) [= *Tetrastichus triozae* Burks] (HYMENOPTERA: Eulophidae)
Tenodera aridifolia sinensis Saussure (ORTHOPTERA; Mantidae)
Thripoctenus javae (Girault) [= *Thripobius semiluteus* Boucek] (HYMENOPTERA: Pteromalidae)
Trichogramma brassicae Bezdenko (HYMENOPTERA: Trichogrammatidae)
Trichogramma evanescens Westwood (HYMENOPTERA: Trichogrammatidae)
Trichogramma minutum Riley (HYMENOPTERA: Trichogrammatidae)
Trichogramma platneri Nagarkatti (HYMENOPTERA: Trichogrammatidae)
Trichogramma pretiosum Riley (HYMENOPTERA: Trichogrammatidae)
Trichogramma ostrinae Pang and Chen (HYMENOPTERA: Trichogrammatidae)
Xylocoris flavipes (Reuter) (HEMIPTERA: Anthocoridae)

*For agents in/with approved hosts/prey from approved sources.

Mexico

Parasitoids

Anaphes iole Girault (HYMENOPTERA: Mymaridae)
Anagyrus kamali Moursi (HYMENOPTERA: Encyrtidae)
Anisopteromalus calandrae (Howard) (HYMENOPTERA: Pteromalidae)
Aphelinus abdominalis (Dalman) (HYMENOPTERA: Aphelinidae)
Aphidius colemani Viereck (HYMENOPTERA: Aphidiidae)
Aphidius ervi Haliday (HYMENOPTERA: Aphidiidae)
Aphidius matricariae Haliday (HYMENOPTERA: Braconidae)
Aphytis lingnanensis Compere (HYMENOPTERA: Aphelinidae)
Aphytis melinus DeBach (HYMENOPTERA: Aphelinidae)
Habrobracon hebetor Say (HYMENOPTERA: Braconidae)
Coccidoxenoides perminutus Girault (HYMENOPTERA: Encyrtidae)
Cotesia flavipes Cameron (HYMENOPTERA: Braconidae)
Cotesia vestalis (Haliday) [= *Cotesia plutellae* (Kurdjumov)] (HYMENOPTERA: Braconidae)
Dacnusa sibirica Telenga (HYMENOPTERA: Braconidae)
Diadegma insulare (Cresson) (HYMENOPTERA: Ichneumonidae)
Diglyphus isaea (Walker) (HYMENOPTERA: Eulophidae)
Encarsia formosa Gahan (HYMENOPTERA: Aphelinidae)
Eretmocerus californicus Howard (HYMENOPTERA: Aphelinidae)
Eretmocerus eremicus Rose & Zolnerowich (HYMENOPTERA: Aphelinidae)
Eretmocerus mundus Mercet (HYMENOPTERA: Aphelinidae)
Leptomastix dactylopii Howard (HYMENOPTERA: Encyrtidae)
Muscidifurax raptor Girault & Sanders (HYMENOPTERA: Pteromalidae)
Muscidifurax raptorellus Kogan & Legner (HYMENOPTERA: Pteromalidae)
Muscidifurax zaraptor Kogan & Legner (HYMENOPTERA: Pteromalidae)
Nasonia vitripennis (Walker) (HYMENOPTERA: Pteromalidae)
Spalangia cameroni Perkins (HYMENOPTERA: Pteromalidae)
Spalangia endius Walker (HYMENOPTERA: Pteromalidae)
Spalangia nigroaenea Curtis (HYMENOPTERA: Pteromalidae)
Tamarixia triozae (Burks) (HYMENOPTERA: Eulophidae)
Telenomus remus Nixon (HYMENOPTERA: Scelionidae)
Trichogrammatoidea bactrae Nagaraja (HYMENOPTERA: Trichogrammatidae)
Trichogramma brassicae Bezdenko (HYMENOPTERA: Trichogrammatidae)
Trichogramma evanescens Westwood (HYMENOPTERA: Trichogrammatidae)
Trichogramma minutum Riley (HYMENOPTERA: Trichogrammatidae)
Trichogramma platneri Nagarkatti (HYMENOPTERA: Trichogrammatidae)
Trichogramma pretiosum Riley (HYMENOPTERA: Trichogrammatidae)

Predators-Insects

Aphidoletes aphidimyza (Rondani) (DIPTERA: Cecidomyiidae)
Atheta coriaria Kraatz (COLEOPTERA: Staphylinidae)
Chrysoperla carnea (Stephens) [= *Chrysopa carnea* (Stephens)] (NEUROPTERA: Chrysopidae)
Chrysoperla rufilabris (Burmeister) [= *Chrysopa rufilabris* (Burmeister)] (NEUROPTERA: Chrysopidae)
Cryptolaemus montrouzieri Mulsant (COLEOPTERA: Coccinellidae)
Cybocephalus nipponicus Endrödy-Younga (COLEOPTERA: Cybocephalidae)

Delphastus pusillus (LeConte) (COLEOPTERA: Coccinellidae)
Feltiella acarisuga (Vallot) [= *Therodiplosis persicae* (Vallot)] (DIPTERA: Cecidomyiidae)
Orius insidiosus (Say) (HEMIPTERA: Anthocoridae)
Orius laevigatus (Fieber) (HEMIPTERA: Anthocoridae)
Orius tricolor (White) (HEMIPTERA: Anthocoridae)
Podisus maculiventris (Say) (HEMIPTERA: Pentatomidae)
Stethorus punctillum (Weise) (COLEOPTERA: Coccinellidae)
Xylocoris flavipes (Reuter) (HEMIPTERA: Anthocoridae)

Predators-Mites

Galendromus occidentalis (Nesbitt) [= *Metaseiulus occidentalis* (Nesbitt); = *Typhlodromus occidentalis* (Nesbitt)] (MESOSTIGMATA: Phytoseiidae)
Galendromus helveolus (Chant) (MESOSTIGMATA: Phytoseiidae)
Iphiseius degenerans Berlese [= *Amblyseius degenerans* (Berlese)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus barkeri Hughes [= *Amblyseius barkeri* (Hughes); = *Typhlodromus barkeri* (Hughes); = *Amblyseius mckenziei* (Hughes)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus californicus (McGregor) [= *Typhlodromus californicus* McGregor; = *Amblyseius californicus* (McGregor)] (MESOSTIGMATA: Phytoseiidae)
Neoseiulus cucumeris (Oudemans) [= *Amblyseius cucumeris* (Oudemans); = *Typhlodromus cucumeris* Oudemans] (MESOSTIGMATA: Phytoseiidae)
Phytoseiulus persimilis Athias-Henriot (MESOSTIGMATA: Phytoseiidae)
Typhlodromips swirskii (Athias-Henriot) [= *Amblyseius swirskii* (Athias-Henriot)] (MESOSTIGMATA: Phytoseiidae)

This appendix was adopted by the NAPPO Executive Committee on October 26, 2015
The appendix is for reference purposes only and is not a prescriptive part of the standard.

Appendix III: Model Letter of Certification for Commercial Non-*Apis* Pollinators (NAP) No. _____

FROM: the National Plant Protection Organization of _____

TO: the National Plant Protection Organization (of ---- _____

I. General Information:

Name and address of producer: _____

Country of production: _____

All material for production of NAP and that may be included in the final packaged consignment: _____

Pollen accompanying the NAP: _____

II. Verification of the Taxonomic Identity of the Commercial Non-*Apis* Pollinators

The submitted **NAP** has been identified as: _____
_____ (*genus, species, author*)

Name of taxonomic specialist: _____

Affiliation of taxonomic specialist: _____

Address, email and phone number of taxonomic specialist: _____

Date of identification: _____ Place of identification: _____

Location of reference specimens: _____

III. Description of Commercial Non-*Apis* Pollinator Culture:

The **NAP** described herein has been under continuous culture at _____ (place) since _____ (date).

The original culture was sourced from _____ (place) on _____ (date).

The **NAP** described herein has been produced in a rearing facility with a protected environment, for at least one complete generation. It has been produced under conditions that preclude contamination with other organisms including plant pests, and pathogens, parasites, parasitoids, and hyperparasitoids of the NAP..

Signature:

Signed by: _____ Date: _____

Title: _____ Address: _____

Phone: _____ email: _____

This letter of certification for commercial non-*Apis* pollinator expires on _____ (day/month/year).