



ORGANISATION NORD AMERICANE POUR LA PROTECTION DES PLANTES  
NORTH AMERICAN PLANT PROTECTION ORGANIZATION  
ORGANIZACION NORTEAMERICANA DE PROTECCION A LAS PLANTAS  
CANADA UNITED STATES MEXICO

## **NAPPO Regional Standards for Phytosanitary Measures (RSPM)**

### **RSPM N° 12 Guidelines for Petition for First Release of Exotic Entomophagous Biological Control Agents**

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March 20, 2006

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## **Review**

NAPPO Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review for this Standard is October 2011. This standard was last reviewed in 2007. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

## **Endorsement**

This Standard was approved by the North American Plant Protection Organization (NAPPO) Executive Committee on October 15, 2000.

### ***Approved by:***

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Executive Committee Member  
Greg Stubbings  
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Executive Committee Member  
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## **Amendment Record**

Amendments to this Standard will be given a consecutive number, dated and filed with the NAPPO Secretariat.

## **Distribution**

This Standard is distributed by the Secretariat of the North American Plant Protection Organization to all NAPPO members, to the FAO IPPC Secretariat, to ICGPP, and to the Administrative Heads of the Regional Plant Protection Organizations (RPPO's). Copies are available upon request to the NAPPO Secretariat and on the NAPPO web page: [www.nappo.org](http://www.nappo.org).

## Introduction

### Scope

These guidelines are intended to assist in drafting a petition for release of exotic entomophagous biological control agents of insect pests. A standardized petition will also assist the reviewers and regulators in assessing the risk of exotic introductions intended for biological control of insect pests. These guidelines could be used for biological control agents for other target pests (e.g. mites, nematodes, and molluscs) at the discretion of the NPPO.

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## Definitions, Abbreviations and Acronyms

biological control agent	A natural enemy, antagonist, competitor, or other organism used for pest control. FAO, 2005
biological control (biocontrol)	Pest control strategy making use of living natural enemies, antagonists, competitors or other biological control agent. FAO, 2005.
containment facility	A structure whose purpose is to prevent escape of material held within it, into the environment.
entomophagous	Organisms that eat insects.
exotic	Not native to a particular country or ecosystem (applied to organisms intentionally or accidentally introduced as a result of human activities). FAO, 2005.
host material	The prey, host, plant material and substrate that the biological control agent was produced with, some of which may be included in the final product (shipment).
import permit	Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements. FAO, 2005.

NPPO	National Plant Protection Organization
petition	A formal, written application to a regulatory agency seeking approval to release a non-native biological control agent. NAPPO, 2005.
release (into the environment)	Intentional liberation of an organism into the environment. FAO, 2005.
standard operating procedure (SOP)	Codified best laboratory practices for handling biological control agents in quarantine or containment. NAPPO, 2004.
voucher specimens	A series of individuals from a specific population deposited in the National Collection(s) of the country.

## Outline of Requirements

Information is requested on the proposed action: aspects of the biology, regulatory status, distribution and economic impact of the target pest; biology, source, known host organism, related species in the proposed area of introduction, and quarantine procedures for the biological control agent; and expected impacts after release; and key published and unpublished scientific records of both the intended target and the organism to be released.

## General Requirements

Each petition should be preceded by a title page, a table of contents and a summary or abstract. A petition to request the first release of exotic entomophagous biological control agents in NAPPO member countries should include the following information:

Title page - '**Petition for the Release of XXX for the Biological Control of YYY**'  
Name(s) and address of Petitioner(s)

### Summary or Abstract

#### 1. Proposed Action

- 1.1 Purpose of the release.
- 1.2 Need for the release.
- 1.3 Reasons for choice of the entomophagous biological control agent.
- 1.4 Specific location of rearing/containment facility and name(s) of qualified personnel operating the facility.
- 1.5 Timing of the release (approximate date of release) and factors affecting the timing (e.g. life stage of target pest, season)
- 1.6 Location of initial release (including geographic coordinates).
- 1.7 Methods to be used (e.g., rearing, multiplication, release).
- 1.8 Methods to be used for disposing of any host material, pathogens, parasites, parasitoids, and hyperparasitoids accompanying an import.
- 1.9 Agencies and/or individuals that will be involved in the release and monitoring.

#### 2. Target Pest Information

- 2.1 Taxonomy: scientific name, full classification, synonymy, common names (if any), and sufficient characterization to allow unambiguous recognition.
- 2.2 Economic impact and benefits (if any) of the target pest.
- 2.3 Life history of the target pest.
- 2.4 Distribution of the target pest.
- 2.5 Economically and ecologically important species in North America (introduced and native) related (phylogenetically and/or ecologically) to the target pest.
- 2.6 Regulatory and/or pest status of the target pest in state, provincial or federal law.
- 2.7 Knowledge of status of other biological control agents (indigenous and introduced) that attack the target pest.
- 2.8 Life stage(s) of target pest that are vulnerable to the biological control agent.

### **3. Biological Control Agent Information**

- 3.1 Taxonomy: scientific name, synonymy, common names and name of the taxonomic authority making the identification of the biological control agent.
- 3.2 Methods used to identify the biological control agent (e.g., morphological, molecular).
- 3.3 Location of voucher specimens.
- 3.4 Natural geographic range, other areas where introduced, and expected attainable range in North America (also habitat preference and climatic requirements of the biological control agent).
- 3.5 Source of the biological control agent (laboratory/rearing facility/containment facility, original collection locality, name of collector, and name of identifier).
- 3.6 Host/Biological control agent interactions (e.g., parasitoid, pathogen, parasite, competitor, and antagonist)
- 3.7 Life history (including dispersal capability and damage inflicted on target pest).
- 3.8 Known host range based on valid literature records, host data from museum specimens, and unpublished records.
- 3.9 History of past use of the biological control agent.
- 3.10 Pathogens, parasites, parasitoids, and hyperparasitoids of the biological control agent and how to eliminate them from a culture of the biological control agent.
- 3.11 Standard Operating Procedure stating how the biological control agent will be handled in containment.
- 3.12 Other closely related genera, sibling species, or similar species of the biological control agent in North America.

### **4. Environmental & Economic Impacts of the Proposed Release**

- 4.1 Known impact on vertebrates including humans.
- 4.2 Implications of not releasing this biological control agent (e.g., pesticide use, physical controls).
- 4.3 Direct impact of the biological control agent on target pest and non-target species.
- 4.4 Effects on physical environment (e.g., water, soil and air resources).
- 4.5 Indirect effects (e.g., potential impacts on organisms that depend on the target pest and non-target species, including potential competition with resident biological control agents).
- 4.6 Possible direct, or indirect effects on threatened and endangered species in North

America.

## 5. Post-Release Monitoring

Researchers and practitioners should publish details on the economic and environmental impacts of programs, as soon as practical, after release of the biological control agent. Comparing predicted and observed behavior and performance of biological control agents is necessary to validate and improve regulatory systems. Further, monitoring can provide useful information for current programs. For example, additional releases may be suspended if proven ineffective, when control/balance is achieved, or if unintended impacts are observed. Therefore, to assist in assessing program impacts, information is requested on plans for post-release monitoring.

In designing monitoring plans please note that pre-release baseline measurements of target pests and non-target species provide for better monitoring data and documentation of effects. Also, some effects may take years or decades to manifest while others may not be long lasting.

The key elements to monitor are:

- 5.1 Biological control agent establishment and spread.
- 5.2 Biological control agent and target pest densities over time.
- 5.3 Host specificity/attack rates on the target pest and selected non-target species for which potential impacts are identified (e.g., threatened or endangered species, and taxonomically related or beneficial species). Methods should measure both biological control agent host preference and development.
- 5.4 Changes in the target pest and in the growth, survival, and reproduction of selected non-target species.
- 5.5 Changes in species diversity and community structure. Monitor the displacement or exclusion of native natural enemies, local extinctions, replacement of the target pest as the main host, and other direct and indirect effects.

**NOTE:** Voucher specimens must be deposited in a National Collection in advance of approval for release. The specimens must be clearly labeled, indicating collection locality, latitude and longitude, date of collection, name of collector and any other pertinent information. Researchers must also provide exact location and timing of release(s) to regulatory officials.