



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

### **RSPM No. 7**

### **Guidelines for Petition for First Release of Non-indigenous Phytophagous Biological Control Agents**

The Secretariat of the North American Plant Protection Organization  
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## Review

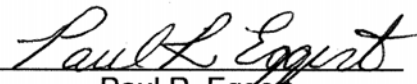
NAPPO Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review for date for this Standard is April 2013. This standard was last reviewed in 2008. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

## 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

No implementation plans are required for this standard.

## 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 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

These guidelines are intended to assist in drafting a petition for first release of non-indigenous phytophagous biological control agents of weeds. A standardized petition will also assist the reviewers and regulators in assessing the risk of Non-indigenous introductions intended for biological control of weeds.

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## Definitions, Abbreviations and Acronyms

host-specificity testing	The process by which the species of plants at risk from a biological control agent in the field is determined (NAPPO)
non-indigenous	Not native to a particular country, ecosystem or ecoarea (applied to organisms intentionally or accidentally introduced as a result of human activities) (FAO)
petition	A formal, written application to a regulatory agency seeking approval to release a non-indigenous biological control agent (NAPPO)
phytophagous	Organisms that eat plants (NAPPO)
standard operating procedure (SOP)	Codified best laboratory practices for handling biological control agents in quarantine or containment (NAPPO)

## Outline of Requirements

Information is requested on the proposed action including: aspects of the biology, regulatory status, distribution and economic impact of the target weed; biology, source, known host range, related species in the proposed area of introduction, quarantine procedures for the biological control agent; host-specificity; expected impacts after release; and plans for post-release monitoring and impact assessment.

## General Requirements

Each petition should be preceded by a title page, a table of contents; summary or abstract (see Appendix 1 for template). A petition to request the first release of Non-indigenous phytophagous biological control agents of weeds in NAPPO member countries should include the following information:

### 1. Proposed Action

- 1.1 Purpose of the release.
- 1.2 Need for the release.
- 1.3 Reasons for choice of the phytophagous 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, and parasitoids accompanying an import.
- 1.9 Agencies and/or individuals that will be involved in the release and monitoring.

## **2. Target Weed Information**

- 2.1 Taxonomy: scientific name, full classification, higher level phylogeny, synonymy, common names (if any), and sufficient characterization (including molecular characterization) to allow unambiguous recognition.
- 2.2 Life history of the target weed.
- 2.3 Economic impact and benefits of the target weed.
- 2.4 Distribution of the target weed.
- 2.5 Economically and ecologically important species in North America (introduced and native) related (phylogenetically and/or ecologically) to the target weed.
- 2.6 Regulatory and/or pest status of the target weed in state, provincial or federal law.
- 2.7 Knowledge of status of other biological control agents (indigenous and introduced) that attack the target weed.
- 2.8 Life stage(s) and plant parts of target weed 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 reference 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 organism).
- 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 Life history (including dispersal capability and damage inflicted on host plant).
- 3.7 Known host range based on valid literature records, host data from museum specimens, and unpublished records.
- 3.8 History of past use of the biological control agent.
- 3.9 Pathogens/parasites of agent and how to eliminate them from a culture of the agent.
- 3.10 Standard Operating Procedure stating how agent will be handled in containment.
- 3.11 Other closely related genera, sibling species or similar species of the biological control agent in North America.

## **4. Host-Specificity Testing**

- 4.1 Selection of test plants: subspecies, species, subgenera, genera and other closely-related plants and plants recorded as hosts in the literature, museum labels or other unpublished collection records, agriculture pest reports, etc.; hosts of close relatives (i.e. in the same genus) of the candidate agent; unrelated plants having physical and chemical similarities to the weed, habitat associates, rare and endangered species, and economic plants.
- 4.2 Laboratory tests (multiple and no-choice feeding tests, oviposition tests, development tests).
- 4.3 Field tests (in country of origin).

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

- 5.1 Known impact of the biological control agent on vertebrates including humans.
- 5.2 Implications of not releasing this biological control agent (e.g., pesticide use, physical controls).
- 5.3 Direct impact of the biological control agent (e.g. pre-release efficacy studies, intended effects on targets, direct effects on non-targets).
- 5.4 Effects of the biological control agent on physical environment (e.g. water, soil and air resources).
- 5.5 Indirect effects of the biological control agent (e.g., potential impacts on organisms that depend on the target pest and non-target species, including potential competition with resident biological control agents).
- 5.6 Possible direct or indirect effects of the biological control agent on threatened and endangered species in North America.
- 5.7 Proposed methods to prevent undesired environmental effects.

## **6. 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 targets 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:

- 6.1 Biological control agent establishment and spread.
- 6.2 Biological control agent and target weed densities over time.
- 6.3 Host specificity/attack rates on the target weed 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.
- 6.4 Changes in the growth, survival, and reproduction of the target weed and selected non-target species.
- 6.5 Changes in species diversity and community structure. Monitor the displacement or exclusion of indigenous phytophagous invertebrates, local extinctions, replacement of the target weed as the main host, and other direct and indirect effects.

**NOTE:**

Reference 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.

## Appendix 1

Title (e.g., 'Petition to introduce as a Biological Control Agent for, in.' or 'Host Plant Test List for')

Date:

Applicant: Name(s)  
Applicant's Organization  
Address

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2.4 Specific location of rearing/containment facility and name of person operating the facility

2.5 Timing of the release

2.6 Methods

2.7 Disposal of host material and pathogens, predators, parasitoids, hyperparasitoids of the agent accompanying the imported shipment

2.8 Agencies and/or individuals involved in the release and monitoring

#### 3. Target Weed Information

3.1 Taxonomy

3.2 Pest Status

3.3 Distribution

3.4 Economic Impact

3.5 Economically and environmentally important plants related to the target

3.6 Status of other organisms introduced for biological control of target

#### 4. Biological Control Agent Information

4.1 Taxonomy

4.2 Methods used to identify the agent

4.3 Location of voucher specimens

4.4 Geographic range

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4.6 Life History

4.7 Field host range

- 4.8 Pathogens/parasites/hyperparasites
- 4.9 SOP for handling in containment
- 4.10 Closely related genera, sibling species or closely similar North American species

## **5. Host-Specificity Testing**

- 5.1 Selection of test plants
- 5.2 Laboratory tests
- 5.3 Field tests

## **6. Environmental and Economic Impacts of the Proposed Release**

- 6.1 Known impacts on vertebrates
- 6.2 Direct Impacts of agent
- 6.3 Effects on physical environment
- 6.4 Indirect effects
- 6.5 Possible direct or indirect effects on threatened and endangered species
- 6.6 Proposed actions to prevent undesired environmental effects

## **7. Post-Release Monitoring**

- 7.1 Agent establishment and spread
- 7.2 Agent and target densities over time
- 7.3 Host specificity/attack rates on species identified for potential impacts
- 7.4 Changes in target and selected non-target species growth, survival and reproduction.
- 7.5 Changes in species diversity and community structure

## **8. Acknowledgements**