NAPPO
North American Plant Protection Organization
Organización Norteamericana de Protección a las Plantas
MEXICO - USA - CANADA

NAPPO Regional Standards for Phytosanitary Measures (RSPM)

RSPM 33
Guidelines for Regulating the Movement of Vessels from Areas Infested with the Asian Gypsy Moth

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The Secretariat of the North American Plant Protection Organization
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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 2019. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

Endorsement

This Standard was updated and approved by the North American Plant Protection Organization (NAPPO) Executive Committee on 10 August, 2009 and revised on 26 October 2015. An ink amendment was done on 01 August, 2017, and is effective immediately.

Approved and signed by:

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Marie Claude Forest Executive Committee Member Canada	Osama El-Lissy Executive Committee Member United States

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Francisco Javier Trujillo Arriaga
Executive Committee Member
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Implementation

See the attached Implementation Plans.

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 (IPPC) Secretariat, and to other Regional Plant Protection Organizations (RPPOs).

Scope

This standard provides NAPPO member countries with guidelines for risk management aimed at minimizing the entry and establishment of the Asian gypsy moth (AGM) in North America. It describes risk management measures for vessels which called on ports where the AGM is present. It also describes measures necessary for cargo from or passing through infested areas destined to North America.

References

ISPM 4. 1995. *Requirements for the establishment of pest free areas*. Rome, IPPC, FAO.

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

ISPM 6. 1997. *Guidelines for surveillance.* Rome, IPPC, FAO.

ISPM 8. 1998. *Determination of pest status in an area*. Rome, IPPC, FAO.

ISPM 10. 1999. *Requirements for the establishment of pest free places of production and pest free production sites*. Rome, IPPC, FAO.

ISPM 13. 2001. *Guidelines for the notification of non-compliance and emergency action.* Rome, IPPC, FAO.

ISPM 14. 2002. *The use of integrated measures in a systems approach for pest risk management*. Rome, IPPC, FAO.

ISPM 22. 2005. *Requirements for the establishment of areas of low pest prevalence*. Rome, IPPC, FAO.

NAPPO. 2008. Pest risk assessment for Asian gypsy moth *(Lymantria dispar* (L.), *L. albescens* Hori and Umemo*, L. umbrosa* (Butler), *L. postalba* Inque associated with ships from Asia, NAPPO, Ottawa.

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

Definitions

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

Background

The Asian gypsy moths *Lymantria dispar asiatica* Vnukovskij, *L. d. japonica* (Motschulsky), *L. albescens* Hori and Umeno, *L. umbrosa* (Butler), and *L. postalba* Inque are serious quarantine pests which are not present in North America. The larvae of *L. umbrosa* are polyphagous as are the larvae of the two *L. dispar* subspecies which reportedly feed on the foliage of over 600 plant species, including alder, ash, beech, birch, chestnut, elm, eucalyptus, hazelnut, hornbeam, linden, maple, oak, poplar, sumac, trembling aspen,

walnut, willow, fruit trees (apple, apricot, cherry, peach, pear, plum), urban ornamental plants (dogwood, hawthorn, holly) and certain conifers, including some cedars, Douglas fir, hemlock, juniper, larch, pine, redwood, spruce and some true firs. Larvae of *L. albescens* feed on trees of at least three different families of plants whereas those of *L. postalba* have been recorded feeding on palm trees. As a result, Asian gypsy moth (AGM) has a potential to seriously affect agricultural and forest resources in North America should it be introduced.

AGM has a prolific reproductive capacity, producing an average of 600 to 1000 eggs per egg mass. The female's capability of flight suggests that if introduced into the NAPPO region, AGM could spread more rapidly and over greater distances than European gypsy moth. Its wide host range would favour establishment. If introduced, AGM could cause significant damage to the North American plant resource base, commerce that relies on those plant resources and to market access. Direct, negative impacts on the environment through defoliation of environmentally important species are anticipated. It would also affect the marketability of forest resources, agricultural and horticultural commodities which may become subject to phytosanitary restrictions applied by trading partners; result in the increased use of pesticides to protect ecologically important, forested and agricultural areas; result in changes to biodiversity from the loss of native species and reduce the fiber of commercially important tree species. If AGM were to become established in a NAPPO country, a vessel certification program may also need to be established by the NPPO to prevent further introduction elsewhere.

Given the potential negative impacts of AGM in North America, incursions of the pest in the past have required immediate and extensive eradication actions at significant costs. In 1992, AGM moving on vessels from ports in the Russian Far East to the Port of Vancouver resulted in a $6 million eradication program following the distribution of ballooning larvae into the urban forest around Vancouver. Similar eradication programs have had to be conducted at the Port of Tacoma, Washington in 1993, Idaho in 2006, Los Angeles, California in 2007 and in several other U.S. states. Surveillance within the NAPPO countries is conducted on an ongoing basis. Genotyping of the insect has confirmed that these incursions can be traced to populations in Eastern Asia and Far East Russia.

The insects' attraction to lighting at night creates a significant potential for females to lay eggs on vessels at anchor, which appear as an attractive beacon of light when contrasted with the surrounding darkness. In some cases, during periods of heavy infestations, regulatory authorities in Russia have reported thousands of egg masses on a single vessel.

Cargo such as steel slabs and pipes, containers etc. also represent a pathway for the movement of the insect. Reports of egg masses transported on articles stored outdoors prior to moving them have been documented by a number of scientific authorities. The amount of cargo moving to North America from infested areas is significant and its movement is often further inland and closer to forested and agricultural habitats.

A risk assessment conducted by the NAPPO Pest Risk Analysis Panel in 2008 concluded that NAPPO countries should "*adopt specific phytosanitary measures for [vessels] having visited the ports where AGM occurs, to prevent its introduction into North America. Port-of-entry inspection alone is not considered sufficient to provide phytosanitary security*". This conclusion was drawn based on records of interception of the AGM on vessels which called on ports in Far East Russia and Eastern Asian countries during the flight period of the female

moth.

As a result, harmonized North American requirements should be established for vessels which have visited ports at the time of female AGM flight and which arrive in North America at a time when larvae may spread through ballooning.

General Requirements

1. Basis for Regulating

Asian gypsy moth, which comprises the two subspecies *Lymantria dispar asiatica* Vnukovskij and *L. d. japonica* (Motschulsky), and the three *Lymantria* species *L. albescens* Hori and Umeno, *L. umbrosa* (Butler), and *L. postalba* Inque, are quarantine pests for all three NAPPO member countries. *L. d. japonica* and the three latter species are found in Japan, whereas *L. d. asiatica* is known to be present in temperate Asia.

Since 1992, the CFIA and the USDA have established regulatory inspection and certification requirements for vessels that have visited infested ports in the Russian Federation, Japan, South Korea and China (North of Shanghai, defined as all ports on or north of 31°15´ North latitude). While conducting inspection activities, certification bodies in AGM regulated areas, as well as the CFIA and the USDA, albeit more infrequently and at a reduced level, have detected AGM on vessels that have visited regulated ports during the female flight period. NAPPO recognizes the potential for establishment of gypsy moth strains beyond their native ranges. Additional areas may be added to this standard should further information become available regarding the distribution of AGM strains that pose a similar risk.

All vessels that have visited an infested area during the period in which AGM is likely to contaminate them, are regulated. If there are detections made on cargo during the vessel inspection, it may also be regulated.

Potential for entry and spread is a combination of two component parts:

- The period of the year when infestation may occur, i.e. the period during which AGM female flight occurs: and

- The period of the year during which larvae may spread by ballooning. Larvae may spread in the year in which egg laying occurs (e.g. the autumn following egg laying, if the egg masses or life forms are exposed to appropriate climatic conditions) or the spring of the year following egg laying.

These periods will vary depending on the location of the infested area and the point of entry in North America. The period of risk should be specified by each NAPPO country and should be subject to revision based on changing geographic, biological and climatic factors influencing female flight and larval dispersal.

2. Risk Management

Preventing the introduction and spread of AGM is a shared responsibility that relies on cumulative efforts at origin, en-route and at arrival in North America. However**,** managing risk at origin to ensure that vessels are free from AGM upon departure from ports in regulated areas is recognized as a key measure in preventing AGM introduction to North America.

2.1 Risk management in infested areas

Specific risk management measures should be utilized by the NPPO in the infested area to reduce the risk of the pest moving to North America. The measure(s) utilized to manage the risk must be approved by a NAPPO member prior to use.

The following measures may be used independently or in combination to mitigate the risks of AGM on board vessels. The measures may address the risks associated with a specific port within a country, or an area as determined by its NPPO.

2.1.1 Inspection and certification

During the identified risk period, the NPPO or an officially authorized entity should inspect vessels and ensure the removal of AGM life forms prior to departing from the infested area. A phytosanitary certificate, or other pre-departure certification document, from a certification body officially recognized by the members of the NAPPO region, stating that the vessel is free of Asian gypsy moth life forms based on that inspection is required.

2.1.2 Systems approaches

The NPPO or an officially authorized entity in an infested area may develop a systems approach, in accordance with ISPM 14: 2002 to reduce the risk of AGM occurrence on vessels (e.g. the use of surveillance combined with pest exclusion measures such as host removal, reduction or altering of port lighting, pesticide application and the release of biological control agents. Certification or other such document or agreement as approved by the NAPPO member countries is required to certify that vessels visiting a port in the infested area during the period of female flight are considered free from AGM based on the systems approach.

2.1.3 Pest free areas (PFA)

The NPPO may, in accordance with ISPM 4:1995 establish and maintain PFAs, as a measure to facilitate movement of vessels and cargo that are free of AGM. Should countries establish PFAs, the NPPO must provide a list of approved PFAs to NAPPO members on an annual basis.

2.1.4 Other options

The NPPO in the infested area may develop other options to ensure AGM freedom provided these options are approved by the NAPPO member country into which the vessel is entering. Requirements for certification regarding other options should be determined by NAPPO member countries in consultation with NPPOs in the infested area.

2.2 Risk management of vessels: Role and responsibilities of the ship's master

It is the responsibility of the shipping lines to meet all requirements for entry to North America for freedom from AGM and other pest concerns. The ship's master is the commander or person in charge of the vessel and plays a pivotal role in ensuring that a vessel entering a NAPPO member country during the period when AGM may spread, is free of life forms of AGM and that any required certification has been obtained. This may be accomplished by:

2.2.1 Ensuring that the vessel is inspected and a pre-departure certification from a recognized certification body obtained while in infested areas. The inspection and certification should be conducted as close to vessel departure time from the regulated port as feasible. Furthermore, the ship's master should ensure the vessel is in good repair and decks are clear of debris and unnecessary obstacles to allow for thorough inspection both in AGM regulated areas and upon arrival in North America.

2.2.2 Maintaining AGM-free status en-route to North America: intensive vessel self-inspections should be performed to look for, remove (scrape off) and properly dispose of or destroy all egg masses and other life forms of AGM prior to entering North American ports. The NAPPO countries will maintain published lists of infested areas, periods of risk when certification is required and educational material to assist ship's masters in maintaining AGM-free status en-route to North America.

2.3. Risk management in NAPPO countries

NAPPO members agree to consult on the approval of risk management measures and will harmonize import requirements as appropriate, taking into account their national legislation and operational capacity.

2.3.1 Prior to arrival at the first port in North America and during a period of risk for spread of the pest to North America, a vessel that has visited a port in an infested area during the risk period of the vessel becoming contaminated should present a phytosanitary certificate or other approved documents as indicated in Section 2.1.

2.3.2 If the vessel is found to be compliant with certification requirements, the vessel will receive communication authorizing it to enter the NAPPO member country. The phytosanitary certificate or other approved documents will be returned to the ship's master for presentation at other points of entry within the NAPPO region.

2.3.3 To verify that the vessel is free of AGM, the NPPO of the NAPPO member country may inspect the vessel and its cargo for signs of AGM (i.e. egg masses, pupae, ballooning larvae or adults) to ensure full compliance of import requirements.

Authorization provided by one NAPPO member country may be recognized by other NPPOs in the NAPPO region provided the vessel does not return to an infested area

during the high risk period where inspection and certification is required.

Vessels which have visited an infested area and present a valid phytosanitary certificate or other approved certificates and that are found free of AGM after phytosanitary inspection by authorities in one of the NAPPO member countries may be authorized to enter a port of another NAPPO member without additional AGM inspection provided that the original confirmation of inspection is presented and all other import requirements are met.

3. Risk Management for Cargo

NAPPO member countries recognize that responsibility for preventing the spread of the AGM rests not only with governments but with the private sector as well. Official inspection and certification of the vast quantities of commodities moving in trade to North America is not possible. Shipping agents, stevedores, exporters, freight forwarders and others involved with vessels and cargo destined to North America have a role to play in preventing the introduction of AGM to North America. Education concerning the risks associated with AGM is critical. Inspection and cleaning of cargo before arrival in North America will avoid financial losses due to delays and rejections at points of entry. Best practices on cargo and container management should be considered at origin to avoid such delays.

4. Non-compliance

Where non-compliance is detected by NAPPO members, NPPOs in infested areas will be notified in accordance with ISPM 13: 2001.

The type of action taken in response to non-compliance will vary depending on the risk of introduction and spread of AGM at the time of detection and other risk factors.

4.1 Certification document missing or incorrect

If vessels have not been certified where appropriate, they may be refused entry to the NAPPO region, redirected to other destinations and may be subject to penalties.

4.2 Signs of AGM found on a vessel

If any life forms of AGM are found on a vessel, the vessel may be required to leave the port, redirected to another destination, and may be subject to other penalties.

Examples of life forms of the insect are provided in Appendix 1. Return of the vessel to the NAPPO region can only occur when the vessel has been cleaned of AGM life forms. The vessel, once cleaned, will be subject to re-inspection before entering a NAPPO member country.

4.3 Signs of AGM found on cargo

If any life forms of AGM are found on the cargo while still on the vessel, the vessel may be required to leave the port, redirected to another destination, and may be subject to other penalties.

Return of the vessel to the NAPPO region can only occur when the cargo has been cleaned of, or treated for, AGM life forms. The cargo once cleaned or treated will be subject to re-inspection before entering a NAPPO member country.

If any life forms of AGM are found on the cargo once off-loaded, then the usual regulatory control will be applied as appropriate.

4.3 Ongoing non-compliance

Should ongoing non-compliance be detected by members of the NAPPO region on vessels coming from an infested area, the risk management measures utilized by the NPPO of the infested area will be reviewed by the members of NAPPO. Additional phytosanitary actions may need to be considered by the NPPO of the importing country should the pest risk warrant.

Subject to national legislation, vessels with on-going non-compliance may be subject to suspension of the vessel from entering the NAPPO region for the remaining portion of the high-risk period.

4.4 Information sharing

NAPPO countries will establish a system to share information in a timely manner regarding the status of non-compliant vessels.

Where feasible, NAPPO countries shall co-operate with interested NPPOs in the development of technical resources and scientific information that supports or improves this standard.

This appendix was adopted by the NAPPO Executive Committee on August 10, 2009 and the NAPPO Asian gypsy moth Expert Group revised it on August 15, 2015.

The appendix is for reference purposes only and is not a prescriptive part of the standard.

Appendix 1: Examples of Life Forms of Live AGM

Photo: David Holden, CFIA

Photo: JEVIC

Live Egg Masses

About 2.5 to 4 cm in size, the outer covering is a dark buff colour. Eggs appear bright silver brown. Old egg masses are usually faded and ragged in appearance.

Photo: USDA-APHIS-PPQ/Bugwood.org

Pupa about brown with long stiff hairs

Photo: JEVIC

Adult Female