



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

### **RSPM No. 33**

### **Guidelines for Regulating the Movement of Ships and Cargo from Areas Infested with the Asian Gypsy Moth**

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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. 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 10 August, 2009 and is effective immediately.

### ***Approved and signed by:***

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Greg Stubbings  
Executive Committee Member  
Canada

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Paul R. Eggert  
Executive Committee Member  
United States

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Javier Trujillo Arriaga  
Executive Committee Member  
Mexico

## **Implementation**

See the attached Implementation Plan.

## **Amendment Record**

Amendments to this Standard will be dated and filed with the NAPPO Secretariat. The most recent version will be posted on the NAPPO website at: [www.nappo.org/stds\\_e.htm](http://www.nappo.org/stds_e.htm)

## **Distribution**

This standard is distributed by the Secretariat of the NAPPO within NAPPO, including Sustaining Associate Members and Industry Advisory Groups, to the FAO IPPC Secretariat and to the Administrative Heads of the 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 options for ships 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

- Determination of pest status in an area*, 1998. ISPM No. 8, FAO, Rome.
- Glossary of phytosanitary terms*, 2009. ISPM No. 5, FAO, Rome.
- Guidelines for surveillance*, 1997. ISPM No. 6, FAO, Rome.
- Guidelines for the notification of non-compliance and emergency action*, 2001 ISPM No. 13, FAO, Rome.
- Pest Risk Assessment for Asian Gypsy Moth (Lymantria dispar (L.), *L. albescens* Hori and Umeno, *L. umbrosa* (Butler), *L. postalba* Inque) Associated with Ships from Asia*, NAPPO, 2008.
- Requirements for the establishment of areas of low pest prevalence*, 2005, ISPM No. 22 FAO, Rome.
- Requirements for the establishment of pest free areas*, 1996. ISPM No. 4, FAO, Rome.
- Requirements for the establishment of pest free places of production and pest free production sites*, 1999. ISPM No. 10, FAO, Rome.

## Definitions

Definitions of phytosanitary terms used in this standard can be found in NAPPO RSPM No. 5 (*Glossary of phytosanitary terms*) and in ISPM No. 5 (*Glossary of phytosanitary terms*).

## 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 accidentally 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 its establishment which in turn would have direct impacts on the environment through defoliation of environmentally important species. It would also affect the marketability of forest resources which may become subject to phytosanitary restrictions applied by trading partners; result in the increased use of pesticides to protect ecologically important areas; result in changes to biodiversity from the loss of native species and reduce the fiber of commercially important tree species.

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 ships 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. Genotyping of the insect has confirmed that at least some of these incursions can be traced to a variety of populations throughout Asia and Eastern Europe.

The insects attraction to lighting at night creates a significant potential for females to lay eggs on ships 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 hundreds of egg masses on a single ship.

Cargo such as used vehicles, containers, used outdoor furniture, etc. also represent an important pathway for the movement of the insect. Numerous reports of egg masses transported on outdoor articles have been documented by a number of scientific authorities. These were noted in the risk assessment conducted by NAPPO and regulation of these articles may represent a more important risk mitigation measure than the regulation of conveyances. The amount of cargo moving to North America from infested areas is significant and its movement is often further inland and closer to forested habitats.

A recent risk assessment conducted by the NAPPO Pest Risk Analysis Panel in 2008 concluded that NAPPO countries should “*adopt specific phytosanitary measures for ships 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 ongoing records of interception of the AGM on ships which loaded cargo in Eastern Asian countries during the flight period of the female moth.

As a result, harmonized North American requirements should be established for ships and cargo 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. Populations with individuals exhibiting characteristics of Asian gypsy moth have been reported east of the Ural Mountains, but no definitive distribution information in eastern Europe is available.

Since 1992, the CFIA and the USDA have established regulatory inspection requirements for ships that have visited infested ports in the Russian Federation. During this period, Russian quarantine services, the CFIA and the USDA have detected AGM on ships that have visited these ports during the female flight period. Similarly, since 1998, detections have been made on ships and on cargo aboard ships which had visited Asian ports during the female flight period. As a result, the infested areas of Asia should also be regulated. 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 ships and cargo that have visited an infested area during the period in which AGM is likely to contaminate them, are regulated.

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

- The period of the year when infestation of the ship or cargo 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 stages 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 Options**

### **2.1 Risk Management Options in Infested Areas**

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

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

The frequent international movement of ships makes it difficult to identify the point at which AGM may contaminate a ship. It is therefore the responsibility of the ship's Master (as indicated in Section 2.3) to ensure that prior to entering North America, the ship is free of AGM.

#### 2.1.1 Inspection

The NPPO or an officially authorized entity may inspect ships and order the removal of life-stages of the pest prior to the ship's entry into the NAPPO region during the identified risk period. Certification as prescribed under section 2.2 is required.

#### 2.1.2 Systems Approaches

The NPPO or an officially authorized entity may develop a systems approach in accordance with ISPM No. 14 (2002) *The use of integrated measures in a systems approach for pest risk management*. The use of surveillance combined with exclusionary approaches to mitigate the occurrence of AGM on ships (e.g. tree removal in nearby areas, reduction or altering of port lighting, the use of areas of low pest prevalence in combination with other measures) may be developed to reduce the risk of the pest. Certification as prescribed under section 2.2 may be required.

NPPOs in the infested area may also combine ongoing surveillance with other pest exclusion measures such as host removal, pesticide application and the release of biological control agents.

#### 2.1.3 Pest Free Areas (PFA)

The NPPO may, in accordance with ISPM No. 04 (1995) *Requirements for the Establishment of Pest Free Areas* establish and maintain PFAs, as a measure to facilitate movement of ships and cargo that are free of the AGM. Should countries establish PFAs, certification as stated under section 2.2 will not be required if the NPPO provides to NAPPO members an annual list of approved PFAs.

#### 2.1.4 Other Options

The NPPO in the infested area may develop other options to ensure pest freedom provided these options are approved by the NAPPO member country into which the ship is entering.

Certification as prescribed under section 2.2 may be required.

### 2.2 Certification of Ships

The NPPO of the infested area may be required to certify that ships visiting a port in the infested area during the period of female flight are considered free from AGM by providing a phytosanitary certificate or other document officially approved by the members of the NAPPO region. Requirements for certification of ships exiting particular ports in the infested areas should be determined by NAPPO members in consultation with NPPOs in the infested area.

### 2.3 Responsibilities of the Ship's Master

A ship's Master is the commander or person in charge of the ship. The Master is responsible for ensuring that ships and cargo entering a NAPPO member country during the period when AGM may spread, are free of life stages of AGM and that any required certification has been obtained. This may be accomplished by obtaining certification while in infested areas or by other approved risk management options as described in Section 2.1.

The NAPPO countries will maintain published lists of infested areas, periods of risk when certification is required and lists of ships that are known to have entered infested areas.

### 2.4 Risk Management in NAPPO Countries

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

2.4.1 Upon arrival at the first port in North America and during a period of risk for spread of the pest to North America, a ship that has visited a port in an infested area during the risk period of the ship becoming contaminated should upon request present a phytosanitary certificate or other approved documents prescribed in Section 2.2. The NPPO of the NAPPO member country may inspect the ship and its cargo for signs of AGM (i.e. egg masses, pupae, ballooning larvae or adults).

2.4.2 If the ship is found to be compliant, the ship will receive written authorization 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.

Written authorization provided by one NAPPO member country will be recognized by other NPPOs in the NAPPO region provided the ship does not return to an infested area during the high risk period.

2.4.3 Where PFAs have been approved as a means of risk management, certification will not be required for ships visiting ports within those PFAs. A list of approved ports within PFAs must be maintained by the NPPO in the infested area. The ship is responsible for providing port information that corroborates the status of the ship as having entered only ports in PFAs.

### 3. Risk Management for Cargo aboard Ships

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 ships and cargo destined to North America have a role to play. Education concerning the risks associated with AGM is critical. Inspection and cleaning of ships and cargo before arrival in North America will avoid financial losses due to delays and rejections at points of entry.

NAPPO will consider certification systems managed by the NPPO or by the private sector to verify that consignments are free of the AGM. In either case, a document verifying that the cargo is considered to be free of life stages of the AGM should accompany the cargo. Alternatively, a statement may be included on existing shipping documents. This verification should be presented at the point of entry of the NAPPO member country.

### 4. Non-compliance

Where non-compliance is detected by NAPPO members, NPPOs in infested areas will be notified in accordance with ISPM No. 13, *Guidelines for the notification of non-compliance and emergency action*.

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, the potential impact on trade and other risk factors.

#### 4.1 Certification Document Missing or Incorrect

If ships and cargo 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 the AGM Found on a Ship or Cargo

If any life-stages of live AGM are found on a ship or cargo, the ship may be required to leave the port, redirected to another destination, and may be subject to other penalties.

Examples of life-stages of the insect are provided in Appendix 1. Return of the ship and cargo to the NAPPO region can only occur when the ship and cargo have been cleaned of AGM life-stages. The ship and cargo once cleaned will be subject to re-inspection before entering a NAPPO member country.

#### 4.3 Ongoing Non-Compliance

Should ongoing non-compliance be detected by members of the NAPPO region,

the risk management measures utilized by the NPPO of the infested area will be reviewed by the members of NAPPO. During the review, should the pest risk warrant, the NAPPO member countries may prohibit the entry of all ships and cargo that have visited a port in the infested area during the high risk period for AGM.

Subject to national legislation, violations may result in suspension of the ship 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 ships.

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

## Appendix 1: Examples of Life-stages of Living AGM



Photo: David Holden, CFIA



Photo: JEMC

### 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: JEMC

Adult Female