

Report of a Pest Risk Assessment

This summary presents the main features of a pest risk assessment which has been conducted on the pest, according to EPPO Standard PP 5/3(1) Pest Risk Assessment Scheme.

Pest: *Dendrolimus sibiricus*
PRA area: The European part of the EPPO region
Assessor: EPPO Secretariat and EPPO Panel on Quarantine Pests for Forestry
Date: December, 2000

1. INITIATION

1.1 Reason for doing PRA: Study of the risk of forest pests occurring on the territory of the former USSR for the western part of EPPO region
1.2. Taxonomic position of pest: *Dendrolimus sibiricus* Tschetverikov (Lepidoptera: Lasiocampidae)

2. PROBABILITY OF INTRODUCTION

2.1 Entry

2.1.1 Geographical distribution: Of limited distribution in EPPO region
It is considered that the region of origin of the pest is Siberia.
Europe: eastern part of European Russia
Asia: Russia (practically all Asian Russia except the extreme north), Kazakhstan, China (north), Korea Democratic People's Republic, Korea Republic, Mongolia (north)
North America: Absent
Central America & Caribbean: Absent
South America: Absent
Oceania: Absent

2.1.2 Major host plants: More than 20 species of *Abies*, *Pinus*, *Larix*, *Picea* and *Tsuga*. Can develop on practically all coniferous species in its natural area. Its preferred hosts are: *Abies sibirica*, *Abies nephrolepis* (= *Abies gracilis*), *Pinus sibirica*, *Pinus koraiensis*, *Larix gmelinii* (= *Larix dahurica*), *Larix sibirica* (= *Larix sukaczewii*), *Picea ajanensis* (= *Picea jezoensis*), *Picea obovata*.

2.1.3 Which pathway(s) is the pest likely to be introduced on: *D. sibiricus* can spread with flights of the adult moths (up to 100 km per year). All stages of the life cycle can be transported on plants moving in trade particularly plants for planting and cut branches (including Christmas trees). During outbreaks especially, eggs and larvae may be associated with wood containing bark and may be hitchhikers on other products.
In decreasing order of risk, pathways for *D. sibiricus* may be:

1. Natural spread with flights of the adult moths
2. Host plants for planting and cut branches
3. Untreated wood with bark, dunnage and packing material

2.2 Establishment

2.2.1 Crops at risk in the PRA area: All species of *Abies*, *Pinus*, *Larix*, *Picea* and *Tsuga* and other coniferous trees.

2.2.2 Climatic similarity of present distribution with PRA area (or parts thereof): North and centre of the European part of the EPPO region has similar climatic conditions to the area of origin and present distribution of the pest

2.2.3 Aspects of the pest's biology that would favour establishment: The pest is polyphagous and genetically adaptable

2.2.4 Characteristics (other than climatic) of the PRA area that would favour establishment: Host plants are widely distributed within the PRA area. Suitable ecological niches are available throughout the PRA area.

2.2.5 Which part of the PRA area is the endangered area: The endangered part of the PRA area covers primarily northern and central parts of the Europe as well as mountain areas of some other countries.

3. ECONOMIC IMPACT ASSESSMENT

3.1 Describe damage to potential hosts in PRA area: *D. sibiricus* attacks both stressed and healthy trees of different ages leading to their death or weakening them sufficiently for outbreaks of bark beetles and other pests to occur.

3.2 How much economic impact does the pest have in its present distribution: *D. sibiricus* is the most important defoliator of coniferous trees in the region of its present distribution. Its outbreaks occur throughout enormous areas (many thousands of hectares) and often lead to the death of forests. The reforestation of these areas is complicated and takes much time. This results in serious changes of environment over large areas. The death of forests has a big social influence on the people living in damaged areas. Large scale pesticide treatments influence the social value of forest berries and mushrooms.

3.3 How much economic impact would the pest have in the PRA area: Considering the similarity of ecological conditions, the damage in the PRA area should be not less than in the present area of the pest.

4. CONCLUSIONS OF PRA

4.1 Summarize the major factors that influence the acceptability of the risk from this pest:

This pest

- comes from an area with similar climatic conditions to the PRA area and causes serious economic damage there;
- could easily establish throughout a large part of the PRA area;
- is the pest of all coniferous trees which are very important in the PRA area;
- can cause also serious environmental and social damage.

4.2 Estimate the probability of entry:

medium (from 4.09 to 4.82 for different pathways)

4.3 Estimate the probability of establishment:

high (6.62)

4.4 Estimate the potential economic impact:

high (6.06)

4.5 Degree of uncertainty

There is little uncertainty in this assessment

5. OVERALL CONCLUSIONS OF THE ASSESSOR

The endangered area is primarily northern and central parts of the Europe as well as mountain areas of some other countries. The potential impact within the endangered area is high (a score of 5.79) including both the direct damage to coniferous plantations and forests (mainly *Abies*, *Pinus*, *Larix*, *Picea*) resulting in wood losses, environmental damage to natural forests resulting in their death over large areas, and social damage to people living in damaged areas. *D. sibiricus* is of limited distribution in EPPO region. Phytosanitary measures could prevent its introduction into the endangered area. *D. sibiricus* should be included into the A2 EPPO list.