

Data Sheets on Quarantine Pests

*Choristoneura conflictana***IDENTITY****Name:** *Choristoneura conflictana* (Walker)**Synonyms:** *Archips conflictana* Walker
Tortrix conflictana Walker
Heterognomon conflictana Walker
Cacoecia conflictana Walker**Taxonomic position:** Insecta: Lepidoptera: Tortricidae**Common names:** Large aspen tortrix (English)**Bayer computer code:** ARCHCO**EPP0 A1 list:** No. 205**EU Annex designation:** I/A1**HOSTS**

Choristoneura conflictana occurs mainly on *Populus tremuloides*, but can also feed on other associated broad-leaved trees (*Alnus*, *Betula papyrifera*, *Populus balsamifera*, *P. trichocarpa* and *Salix*).

P. tremuloides and other *Populus* spp. are widely grown in Europe for timber or ornamental purposes, though in the south of Europe it is normally restricted to mountain areas.

GEOGRAPHICAL DISTRIBUTION

C. conflictana occurs from the Atlantic to the Pacific and from Alaska to California, Arizona and New Mexico with its main host *P. tremuloides*.

EPP0 region: Absent.**North America:** Canada (Alberta, Manitoba, Ontario, Quebec, Saskatchewan), USA (Alaska, Arizona, California, Colorado, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, New York, North Dakota, South Dakota, Utah, Wisconsin, Wyoming).**EU:** Absent.**BIOLOGY**

The eggs are laid in flat clusters from mid-June to early July, and the larvae hatch 7-10 days after oviposition. The first-instar larvae are gregarious, congregating between the flat surfaces of the leaves they web together. The larvae skeletonize the foliage, but feeding damage is not conspicuous at this stage. During the latter part of August, the larvae descend to the base of the trunk and overwinter in white silken hibernacula. Second-instar larvae emerge from hibernation in early May. They ascend the trees, mine the swelling aspen buds and again feed on epidermal leaf tissue, sometimes causing complete defoliation before the buds open. From the latter part of the third instar until pupation, the

larvae roll the leaves into shelters within which they feed, eating all but the larger leaf veins, and then pupate. It is during this period of larval development that most defoliation occurs. The larvae pupate from early June to mid-June and the adults emerge 7-14 days later. *C. conflictana* completes one generation per year. As second and third instar larvae remain in mined buds and developing leaf clusters for a period of 10-14 days in the spring, sampling at this time provides an estimate of the potential population and forms the basis for defoliation forecasts.

For more information on the biology of *C. conflictana* refer also to Davidson & Prentice (1968), Furniss & Carolin (1977) and USDA (1979).

DETECTION AND IDENTIFICATION

Symptoms

Infested trees show rolled leaves and may be completely defoliated for a year or two but normally recover with only growth loss. Usually, defoliation occurs in early summer and attacked trees re-leaf in mid to late summer but new foliage is sparse, individual leaves are smaller and tree crowns appear thin. Outbreaks characteristically last 2 or 3 years.

Morphology

Eggs

Eggs are pale-green and laid in large flat masses usually on the upper surface of aspen leaves in June and July.

Larva

The large larvae are grey-green to nearly black.

Adult

The forewing is greyish with basal, middle and outer brownish patches and the wing span is 25-35 mm.

MEANS OF MOVEMENT AND DISPERSAL

Passive wind dispersal of larvae can occur and spread is also ensured by moth flight. In international trade, *C. conflictana* is liable to be carried by plants and cut foliage of *Populus tremuloides* and other host plants.

PEST SIGNIFICANCE

Economic impact

In Canada, severe defoliation has been observed in Ontario (West). Severe infestations have also been recorded in Manitoba and Saskatchewan (covering 25 000 km² or more). However, little is known about the effect of severe infestation on aspen stands. Tree mortality to date has been negligible.

Control

Chemical control (aerial spraying) can be implemented. The role of natural enemies (the tachinid *Omotoma fumiferanae* and the ichneumonid *Glypta* sp.), as well as the use of *Bacillus thuringiensis* subsp. *kurstaki* (Holsten & Hard, 1985) are under study. Sex pheromones are also being investigated for trapping or possible mating disruption (Wheatherston, 1976).

Phytosanitary risk

C. conflictana was recently added to the A1 list of EPPO, but is not regarded as a quarantine pest by any other regional plant protection organization. In Ontario, *C. conflictana* is considered as one of the major defoliators of *P. tremuloides* causing growth

reduction. However, data on tree mortality resulting from defoliation is so far inconclusive (Thomas, 1978). *C. conflictana* may therefore present a certain risk to plantations of aspen and other *Populus* spp. in Europe, but is probably less significant than *Choristoneura* spp. on conifers.

PHYTOSANITARY MEASURES

Prohibition of the import of plants and cut foliage of *Populus* from infested countries, as recommended by EPPO (OEPP/EPPO, 1990) for other North American pests of poplar, is the appropriate measure to prevent introduction of *C. conflictana*.

BIBLIOGRAPHY

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