

Mini data sheet on *Oemona hirta*

Oemona hirta was added to the EPPO A1 List in 2013. A full datasheet will be prepared, in the meantime you can view here the data which was previously available from the EPPO Alert List (added to the EPPO Alert List in 2010-deleted in 2013).

Oemona hirta (Coleoptera: Cerambycidae) - Lemon tree borer

Why: *Oemona hirta* is a common pest in New Zealand which attacks citrus trees (hence its common English name 'lemon tree borer') as well as a wide range of woody plants including fruit, ornamental, and forest species. This pest was intercepted by the NPPO of the United Kingdom on *Wisteria* plants for planting in 1983 and 2010. A rapid PRA conducted by the British NPPO concluded that *O. hirta* could be a threat to the UK and also to other parts of Europe, and recommended adding it to the EPPO Alert List.

Where: *O. hirta* is a native longhorn beetle of New Zealand, and so far it has only been recorded in this country.

Oceania: New Zealand. Present on both Islands (except in very dry areas), it is recorded mostly from the Northern half of the North Island and around Nelson in the South Island.

EPPO region: Absent. Intercepted by the United Kingdom in 1983, and again in 2010 on plants for planting of *Wisteria* imported from New Zealand.

On which plants: *O. hirta* is a highly polyphagous species which feeds on many plants (more than 40 plant genera). In New Zealand, *Citrus* spp. are the major host plants but many other species of economic importance can be attacked. *O. hirta* has been reported on fruit crops, such as: *Diospyros kaki*, *Ficus carica*, *Malus*, *Prunus avium*, *Prunus domestica*, *Prunus dulcis*, *Prunus persica*, *Punica granatum*, *Pyrus*, *Ribes uva-crispa*, *Vaccinium*, *Vitis vinifera*; forest trees and woody ornamentals such as: *Acacia*, *Acer*, *Aesculus hippocastanum*, *Alnus*, *Betula*, *Corylus*, *Crateagus*, *Juglans*, *Eucalyptus*, *Euonymus japonicus*, *Hibiscus rosa-sinensis*, *Pinus* (conifers are mentioned as rarely attacked), *Platanus*, *Populus*, *Quercus*, *Rosa*, *Ulex*, *Ulmus*, *Wisteria*. In non-cultivated environments, *O. hirta* is also mentioned as part of the invertebrate fauna of mangrove trees in New Zealand.

Damage: Damage is caused by larvae which bore into the wood of branches and stems. Although living predominantly in branches, larvae can also mine into the trunk of trees. Adults feed on pollen and nectar. The larvae of *O. hirta* bore long tunnels in woody tissues (both sapwood and hardwood) with side tunnels leading to holes through which frass is ejected. Larval feeding activities can cause wilting and dying of twigs and branches, as well as die-back in tree crowns. Attacked branches are more susceptible to wind breakage. In New Zealand, *O. hirta* is mainly considered as a citrus pest (e.g. severe damage was reported in Northland and Gisborne regions in the late 1990s), but it can attack other fruit crops or ornamental trees and shrubs. In particular, damage has been reported in the 1990s on apple orchards near Hamilton, vineyards in Hawkes Bay, or persimmon (*Diospyros kaki*) in the Waikato region. In poplar nurseries, *O. hirta* may cause damage when it girdles the living stumps used for the production of cuttings.

In most parts of New Zealand, *O. hirta* requires at least 2 years to complete its life cycle. Eggs (2.0-2.2 mm) are laid singly (from October to January) in leaf and branch junctions, bark crevices, and fresh pruning wounds. During its 2 month's life, a female can lay approximately 50 eggs. Newly hatched larvae bore directly into the wood. Larvae are creamy white with dark brown mandibles, and full grown larvae can reach 35 mm long. They can be found all year round and remain inside trees for more than a year. Pupation can be observed from June to October and lasts approximately 3 weeks. Pupation takes place in a cell which consists of a short length tunnel blocked with two plugs formed from short strips of wood. In New Zealand, adults emerge from October to January. Adults are slender beetles (15 to 30 mm long) with long antennae and fine transverse ridges on the prothorax. The body colour varies from red-brown to almost black.

Pictures of *O. hirta* can be viewed on the Internet

http://www.landcareresearch.co.nz/research/biosystematics/invertebrates/invertid/bug_details.asp?Bu_Id=104
<http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/oemonaHirta10.pdf>
<http://www.fera.defra.gov.uk/plants/publications/documents/factsheets/lemonTreeBorer.pdf>

Transmission: In the literature, adults of *O. hirta* are reported to be good flyers, being most active in the morning (from 5 to 7 am) and the evening (from 7 to 9 pm). A peak of flight activity occurs in October and November in New Zealand. However, there is no data on the distance they can fly and on how rapid natural spread might be. Infested plants are likely to transport the pest over long distances, and the UK interceptions on Wisteria clearly demonstrate that such a possibility exists. Due to the hidden mode of life of this insect during most of its life cycle, infestations are difficult to detect during visual inspections (the presence of sawdust may be a sign).

Pathway: Plants for planting of host plant species from New Zealand, cut branches? There is no evidence that this insect can be transported on wood (it seems unlikely as larvae feed on living plants).

Possible risks: *O. hirta* is a very polyphagous species and many of its host plants are of major economic importance in the EPPO region; being cultivated as fruit crops (e.g. citrus, pome and stone fruits, grapevine), woody ornamentals or forest trees. Although further studies are needed on the potential of establishment of *O. hirta* in the EPPO region, large parts of New Zealand have a temperate oceanic climate which is comparable to many parts of Western Europe. It seems that *O. hirta* has the potential to establish outdoors, at least in parts the EPPO region. There is relatively little information about the control of *O. hirta* in orchards or nurseries. Control of tree borers is in general difficult. Once larvae enter branches and trunks, chemical control is considered impractical. Research has identified possible biological control agents parasitizing larvae, such as: *Xanthocryptus novozealandicus* and *Campoplex* sp. (both Hymenoptera: Ichneumonidae), *Aspicolpus hudsoni* (Hymenoptera: Braconidae), and *Steinernema feltiae*. Pruning of infested twigs/branches at appropriate periods (with destruction of pruned parts and protection of wounds) can help to reduce pest populations. If introduced into the EPPO region, *O. hirta* is likely to present a threat to fruit orchards, forest and amenity trees, as well as to the nursery sector.

Sources

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INTERNET

FERA website (GB)

Rapid assessment of the need for a detailed Pest Risk Analysis for *Oeomona hirta*, the lemon-tree borer.

<http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/oeomonaHirta10.pdf>

Plant Pest Fact Sheet. Lemon tree borer *Oeomona hirta*.

<http://www.fera.defra.gov.uk/plants/publications/documents/factsheets/lemonTreeBorer.pdf>

HortNET. Horticulture and Food Research Institute of New Zealand. HortFACT by JR Clearwater (dated 1988) Lemon Tree Borer Life Cycle.

<http://www.hortnet.co.nz/publications/hortfacts/hf401033.htm>

New Zealand Farm Forestry Association. Lemon-tree borer.

<http://www.nzffa.org.nz/images/design/Pests/Oeomona-hirta/Oeomona-hirta.html>

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