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## Information

### TORTRIX MOTH SPECIES IN THE UK

This pest is becoming more of a problem on nurseries as it has managed to diversify from attacking orchards and soft fruit plantations to targeting ornamental plants. About 20 species of tortrix moth can be found on apple trees but the following are now considered to be the most damaging for nursery stock growers.

#### 1. Carnation tortrix moth (*Cacoecimorpha pronubana*)

This is highly polyphagous (see below), can over-winter as a caterpillar and therefore cause damage early in the season. There can be two generations of this moth, one in June/July and one in August/September. Eggs have been found during the winter months on plants too, which then hatch in April/May. The most obvious damage symptoms are holes in the leaves and the rolling and webbing of the leaves allows the pale green caterpillars to feed out of sight by grazing the leaf surface and damage is not often noticed until the moths have emerged. It is difficult to control the pest once this has occurred and close monitoring of vulnerable species is key in identifying when to spray effectively (see control methods below).

Vulnerable species include *Malus*, *Prunus*, *Citrus*, *Ribes*, *Robinia*, *Acer*, *Cupressocyparis x leylandii*, *Cytisus*, *Dianthus*, *Euphorbia*, *Fuchsia*, *Jasminum*, *Ilex aquifolium*, *Laurus nobilis*, *Ligustrum vulgare*, *Mahonia aquifolium*, *Pelargonium*, *Petunia*, *Rhododendron*, *Rosa*, *Syringa vulgaris*, *Arbutus*, *Euonymus japonicus*, *Hedera helix*, *Hippophae rhamnoides*.



#### 2. Summer fruit tortrix moth (*Adoxophyes orana*)

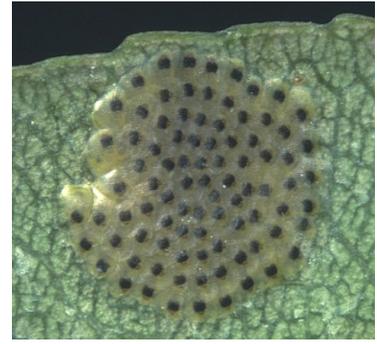
This is the dominant species in fruit orchards in the South East of England but has spread to other areas. It has two complete generations a year and over-winters as a caterpillar under leaf fragments attached to bark and stems with silk threads. The caterpillars reappear in late March to early April to feed on leaves and then pupate. The second generation of moths can occur in late July to early September and the caterpillars produced from this generation do not eat as many leaves as the first generation as they go into hibernation quite quickly. However, there can be a significantly greater

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amount around compared to the first generation, so controls need to be in place to reduce the number of pests coming out during the spring months.



### 3. Cyclamen tortrix moth (*Clepsia spectrana*)

This is also known as straw-coloured tortrix moth and attacks plants from the Cyclamen family.



### **Chemical control**

1. Nemolt (teflubenzuron) acts as a stomach poison, which then interferes with the moulting process, leading to death. Apply as soon as larvae are seen as it is more effective on young caterpillars.

2. Dimilin Flo (diflubenzuron) is in the same chemical group as Nemolt and must not be used in succession to avoid pest resistance. It has the same action as Nemolt and is also much more effective on young caterpillars.

3. Runner (methoxyfenozide) is a moulting accelerating compound which also controls codling moth and winter moth.

4. Insegar WG (fenoxycarb) is a growth inhibitor and acts in a similar way to Nemolt and Dimilin Flo. It controls summer fruit tortrix moth and codling moth.

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All these products affect the growth of the caterpillars and therefore immediate knockdown will not be seen until the larvae try to pupate. Continue to monitor traps to check for any adult development after application. Apply as soon as young growth emerges in the spring to remove over-wintering populations.

### **Biological control**

1. *Bacillus thuringiensis* (Dipel DF) is a naturally occurring micro-organism which can be used in a range of environments but is most effective under protection. Apply when caterpillars are actively feeding and then at 7-10 day intervals until the end of the hatching period. Spray on dry foliage only. Once the crystal proteins (plus bacterial spores) have been ingested by the larvae, they become activated in the gut, which breaks down the protein and releases the spores. The protein and spores attack the lining of the gut. The spores then proliferate and infect other susceptible caterpillars. The pests die after 2-3 days once treated foliage has been eaten. From experience, a high humidity level is beneficial for the product to work to its full extent.

### **Identification**

Pheromone traps are used extensively in fruit crops to monitor the activity of the adults during May/June. Appropriate timing of treatments can then occur before damage is seen. If unsure of the moth species, then introduce several traps. Books are available from either the Agricultural Document Library (AdLib) online at [www.adlib.ac.uk](http://www.adlib.ac.uk) or Atropos Books at [www.atroposbooks.co.uk](http://www.atroposbooks.co.uk). Both are clear and concise and give good detailed information.

Traps are available from Dove Associates.

### **Acknowledgements**

UK Moths of Great Britain and Ireland online at [www.ukmoths.org.uk](http://www.ukmoths.org.uk)  
[www.glaucus.org.uk](http://www.glaucus.org.uk)  
[www.gardensafari.net](http://www.gardensafari.net)  
[www.inra.fr](http://www.inra.fr)  
[www.invasive.org](http://www.invasive.org)  
[www.fargro.co.uk](http://www.fargro.co.uk)

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