



Welcome to the latest issue of Plant Clinic News

Welcome to the August/September issue of Plant Clinic News.

In this issue we publish a renewed appeal for vigilance in the face of further findings of Asian longhorn beetles and recent findings of another alien longhorn beetle, the lemon tree borer are discussed by Joe Ostojá-Starzewski; Anastasia Korycinska and Joe Ostojá-Starzewski report on a recent finding of the European corn borer in a maize crop in the south west of England, a new threat to maize crops in the UK? and Chris Malumphy answers the question, 'What's been eating my mango?'

In a typical year Fera's plant clinic will receive over 6,000 samples. Using traditional and molecular techniques our specialists can diagnose any plant health problems.

So if you come across something that you have never seen before, sending samples to the Plant Clinic can be the best way to avoid costly disease and pest damage.

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Citrus longhorn beetles found in England – Please remain vigilant!

- Joe Ostojá-Starzewski

The need for continued vigilance for citrus longhorn beetle (*Anoplophora chinensis*) remains high. This very damaging non-native wood-boring pest from Asia feeds on and develops within, a very wide range of trees and shrubs, including many species that are native to the UK. Infested trees can be seriously damaged or even killed by this beetle and thus it poses a serious threat to horticulture, forestry and woodland trees.

So far this year, 3 adult citrus longhorn beetles have been reported and captured by members of the public from different areas of England (Merseyside, East Sussex and Rutland). The first two were associated with Japanese maple (*Acer palmatum* and *Acer shirasawanum* 'Aureum' respectively), with single exit holes identified in the plants concerned. The third was found in the grounds of a local school, but following a local publicity initiative and an area survey by Fera's Plant Health and Seeds Inspectorate (PHSI) the host plant (*Acer palmatum*) from which the beetle emerged was identified in a nearby garden. In each of these cases the plants involved had been imported into the UK.

Public vigilance together with the actions of the PHSI are continuing to mitigate the risk of this pest causing outbreaks and becoming established, but clearly it remains a threat. It is very good news that beetles are being reported and captured when found, but please stay vigilant, and if you suspect the presence of this pest or see a beetle that you suspect to be an *Anoplophora*, trap it in a sealed jar if possible and immediately contact your local Plant Health Authority.

What to look for

Adult beetles are very distinctive (Figure 1). They are large, measuring 21-37 mm in body length and are shiny black with scattered patches of white hairs. In addition they have very long antennae that are also black, but ringed with pale blue or white hairs. The larvae, the most directly damaging life stage, are wood-borers (Figure 2) that develop within their host. An infestation can be indicated by the appearance of sawdust-like debris from the trunk of the host plant, but often the first sign of an infestation is the appearance of an adult beetle, leaving an emergence hole 6-11mm in diameter (Figure 3).



Figure 1. Adult citrus longhorn beetle



Figure 2. Adult citrus longhorn beetle larvae within an *Acer* sapling



Figure 3. Adult citrus longhorn beetle and emergence hole



The lemon tree borer, another longhorn beetle threat?

- Joe Ostojá-Starzewski

The lemon tree borer (*Oemona hirta*) is a damaging and highly polyphagous alien longhorn beetle native to New Zealand. In its natural range it is recorded from more than 40 different plant genera including both native and many introduced species such as apple, birch, elm, gooseberry, grape, hazel, holly oak, pear, poplar, rose and willow to name but a few. In June a consignment of *Wisteria* rootstocks arrived from New Zealand and were delivered to a number of nurseries. In two instances these were found to be infested with the active *O. hirta* larvae and all the plants were destroyed. Both findings were connected to the same supplier. Several other related consignments of *Wisteria* rootstocks had also been imported to other UK nurseries from the same supplier but have now been checked for evidence of infestation.

What to look for

The adults are rather unremarkable brown beetles (Fig. 4) reaching about 3cm in body length. Both sexes are about 3.8 times longer than broad, clothed in pale yellow hairs, but the most distinctive feature present in both sexes is a series of, ridges on the dorsal surface of the thorax (Fig. 5), a feature most prominent in male specimens and not present on any of our native longhorn species. The larvae which develop hidden within their host plant are creamy white with dark brown to black mandibles (jaws) and reach 35 mm in length and 8mm in width when fully grown.

Biology and dispersal

In New Zealand the life-cycle takes at least 2 years to complete. The larvae which are active throughout the year bore directly into the host and as they develop form long galleries, with periodic side branches to the surface through which they eject their sawdust-like droppings (frass). Adults live for about 2 months and are good flyers, being most active in the morning between 5 and 7 am and in the evening between 7 and 9 pm.

Detection and damage

Finding lines of frass ejection holes is one indication of the presence of live larvae, but the feeding activities of the larvae can also cause small twigs to die or wilt resulting in clusters of dead leaves. Major damage by larger larvae can weaken branches to the point that they break under wind pressure of fruit load or may

even be girdled and die. In New Zealand, *Oemona hirta* is of great economic importance since all commercial citrus varieties are attacked. Although best known as a serious pest of citrus trees, *O. hirta* also causes damage to other top fruit and some soft fruit (e.g. blueberry) crops. Ornamental trees and shrubs are also attacked and forestry crops (*Populus*) can be damaged.

Potential threat

New Zealand has a largely temperate climate (temperate oceanic) much like the UK, so taking climate and the availability of suitable hosts into account, it is likely that *O. hirta* could establish both outdoors in the UK and under protection although most hosts will not be grown in such a situation. In the UK top fruit and our native trees could potentially be at risk.

What you should do

Any suspected outbreaks of *O. hirta* or other non-native plant pests should be reported immediately to your local Fera Plant Health and Seeds Inspector, or you can phone 01904 465625 or Email: planthealth.info@fera.gsi.gov.uk.

Plant Pest Factsheets for *O. hirta* and a range of other pests are available to download from:

www.fera.defra.gov.uk/plants/publications/plantPestDiseaseFactsheets.cfm



Figure 4. Female lemon tree borer



Figure 5. Showing the ridges on the thorax



A new threat to maize crops in the UK?

- *Anastasia Korycinska and Joe Ostojá-Starzewski*

Ostrinia nubilalis, the European corn borer (ECB), is a serious moth pest of maize and is native to southern Europe. In the USA, where it was introduced accidentally in the early 20th century, it is considered to be one of the most significant insect pests of field maize and can cause substantial losses. It is also reported that many other crops including snap pea, lima beans and potato can be infested if moths are abundant before maize is available, or late in the season when senescent corn becomes unattractive for egg laying. In some parts of the USA potato is reported to be more attractive to this pest than corn during peak adult emergence. In Europe it is estimated that ECB causes losses in maize crops of 5-7% annually.

The caterpillars of ECB are quite small reaching 25 mm in length when fully grown; are dirty white or reddish purple in colour and have brown spots and dark stripes along their bodies (Figure 6.). The caterpillars tunnel into the stem of the host plant and develop hidden inside. Sometimes the only indication of an infestation is the appearance of excrement (frass) on the outside of the stem (Figure 7.), or when a weakened stem snaps, revealing tunnels. The non-descript brown adult moths have a wing span of up to 34 mm and fly at night during June and July.

Up to the 1930s ECB was classed as a rare migrant to the British Isles. Since then ECB has been progressively extending its range northward through Europe and has become a regular migrant to England. Moths have been recorded mainly south of a line joining the Wash and the Bristol Channel, and particularly in the East. Breeding colonies of ECB have been established in England for many years, feeding almost exclusively on mugwort (*Artemisia vulgaris*) on waste ground in the counties bordering the Thames estuary and around some towns on the south coast (Portsmouth and Southampton).

This year, for the first time, damage has been observed and active larvae have been found in two maize crops in the UK, both in the south-west of England. This is a significant development as maize is an increasingly important crop across England and Wales. The area of maize cultivation has increased from about 25,000 to 172,000 hectares in the last 30 years, with the majority being produced for fodder. It is against this background that a rapid pest risk assessment is being produced by Fera. This will help to confirm a UK policy position on this pest and provide information and advice for growers in this sector.



Figure 6. Corn borer caterpillar inside maize stem



Figure 7. Evidence of a corn borer infestation, frass produced from maize stem



What's been eating my mango?

- Chris Malumphy

The mango seed weevil (*Sternochetus mangiferae*) is native to central Asia, but has spread to almost all the major mango growing regions of the world. As its common name suggests it develops inside a mango seed and adult beetles and larvae are occasionally found in Britain inside imported fruit. In July a live adult (Fig 8.), which measured about 1 cm in length, was found in a box of fresh mango fruit imported from India, a rare but significant find. The market for mangoes in the European Union is one of the fastest growing of all exotic fruits. Figures for the period 2003-2007 show that mango consumption increased across the EU by 7%, with the UK recording the highest rate of increase (20% per year). The UK is also the largest market for mangoes, accounting for 29% of EU consumption. In 2007, the UK alone imported 56 thousand tonnes of mangoes with an approximate value of 60 million pounds. Mangoes are grown to a limited but increasing extent around the Mediterranean. The last figures available (2000) show that Europe (including Israel) produced 35 thousand tons of mangos. Because of this industry and the fact that the mango seed weevil is still absent from Europe, this pest is notifiable to the plant health authorities. So if you do find one inside your mango fruit, you now know 'What's been eating my mango', and please notify Fera.



Figure 8. Adult mango seed weevil

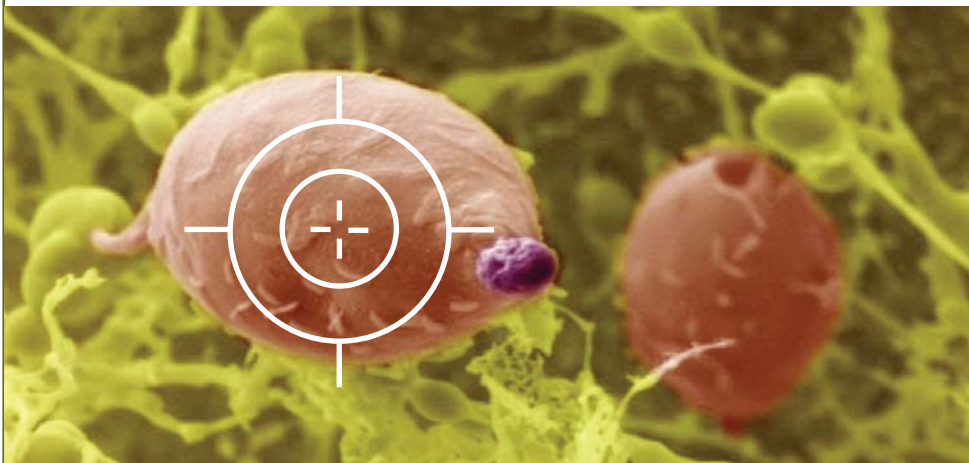
The best form of defence is **ATTACK**



**Just because you
can't see them
doesn't mean they
are not there**

Targeting diseases with routine screening of plants, irrigation water and growing media is a vital part of the war to stop disease destroying your crops and damaging your business.

Call our Plant Clinic to discover how attacking the causes of disease can protect your business.



Sporangia of *Phytophthora* sp. — magnification 3000x

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In the October/November issue: Western corn rootworm has it gone for good?; Potato early blight, an update; Viruses and viroids of peppers; New mealybug pests, a threat to protected crops and ornamentals? and Dominic Eyre an Author biography.