

Citrus longhorn beetle

Anoplophora chinensis



Figure 1. Citrus longhorn beetle adult (21-37 mm in length) and exit hole (6-11 mm across)

What is it?

The citrus longhorn beetle, *Anoplophora chinensis* (Forster), is a non-native pest that is extremely damaging to a wide range of broadleaved trees and shrubs. It is a quarantine pest for the European Union. The natural range of the beetle includes China, Japan and other countries in South East Asia. Citrus longhorn beetles have been moving around the world in ornamental trees from Asia. They pose a serious threat to horticulture, forestry and native trees in the UK.

Why the concern?

Citrus longhorn beetles have been intercepted in the UK at nurseries, bonsai importers and in private gardens on trees and bonsais imported from China, Japan and South Korea. The most common hosts have been maples especially *Acer palmatum* (Japanese maple).

An outbreak of citrus longhorn beetle was detected in Lombardy, Italy in 2000. The pest has now become established in Lombardy despite eradication measures that have included the destruction of thousands of mature trees. Between 2008-2010, Lombardy plant health service planned to spend €10 million on eradication measures. Outbreaks of the pest have also been discovered in Soyons, France (2003), Westland, the Netherlands (2007), Rome (2008) and Boskoop, the Netherlands (2009). In and around Boskoop, there is a high concentration of nurseries supplying trees and shrubs to the rest of Europe. Although there are no known outbreaks of the citrus longhorn beetle in the UK, the numerous interceptions in the UK since 2005 and outbreaks in Europe demonstrate that there is a significant threat to the UK.

What does it look like and what are its symptoms?

Adult beetles are large and black with variable white markings. Particularly distinctive are their antennae, which are longer than their bodies (between 1.2–2 times body length) and are black with white/light blue bands. The larval stage of the beetles is the most damaging. The larvae feed internally on the pith and vascular systems of the lower trunk and root. The tunnels created by the feeding leave trees susceptible to diseases and wind damage. The adults can cause more limited damage by feeding on foliage and eating young bark.



Figure 2. Citrus longhorn beetle adult (21-37mm long)

Citrus longhorn beetles spend most of their life, as larvae inside a trunk or root, and hence there can be little or no external sign of their presence to anyone inspecting a host tree. Their lifecycle can be one to two years in Asia, however in the UK the lifecycle is likely to be at least two years and more likely three or more years as in the Netherlands. The most obvious symptoms of citrus longhorn beetle damage are adult exit holes (see photo on front page) which are typically 6-11 mm in diameter and are generally found towards the base of trunks and exposed roots. Other less obvious symptoms include bleeding sap at the site that eggs have been laid, piles of frass (sawdust like droppings) at the base of an attacked tree and bulges in the trunk indicating the presence of a pupal chamber.



Figure 3. A citrus longhorn larva within its cut open host plant, the larvae grow up to 56 mm in length



Figure 4. The tunnel and exit hole left within a young Japanese maple tree that had been infested by a citrus longhorn beetle

What are the hosts?

Citrus longhorn beetle has an extensive host range of deciduous trees and shrubs including many species native to the UK and species grown as ornamentals. In 2008, the EU Commission passed emergency measures aimed at stopping the introduction and spread of this pest within the Community. The Decision referred specifically to the following trees and shrubs which are known to be the most significant hosts of citrus longhorn beetle: *Acer* spp. (maples), *Aesculus hippocastanum* (horse chestnut), *Alnus* spp. (alder), *Betula* spp. (birch), *Carpinus* spp. (hornbeam), *Citrus* spp., *Corylus* spp. (hazel), *Cotoneaster* spp., *Fagus* spp. (beech), *Lagerstroemia* spp., *Malus* spp. (apple), *Platanus* spp. (plane), *Populus* spp. (poplar), *Prunus* spp. (cherry etc.), *Pyrus* spp. (pear), *Salix* spp. (willow), and *Ulmus* spp. (elm).

What time of year have citrus longhorn beetles been seen?

Adult beetles have most commonly been found in the UK in July and August, but findings have occurred as early as May and as late as October.

How can *Anoplophora* spp. beetles be controlled?

As well as being difficult to detect, citrus longhorn beetles are difficult to control because the larvae and pupae are protected from foliar insecticide treatments and most predators, by the surrounding trunk or roots. Currently, the only totally effective way of controlling larvae is to fell and chip, burn or deeply bury infested trees. Foliar insecticide sprays can be effective against adults, but are not effective against larvae and pupae. An additional shortcoming of using foliar insecticides is that adults may fly off before they consume any treated foliage.



Figure 5. Tree felling in Italy for citrus longhorn beetle control

Keep a good look out

If you suspect the presence of this pest or see a beetle that you suspect to be a citrus longhorn beetle, trap it if possible, and immediately report the finding to your local Fera Plant Health and Seeds

Inspector:

Tel: 01904 465625

Email: planthealth.info@fera.gsi.gov.uk

Web: www.defra.gov.uk/fera/plants/plantHealth

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