Department for Environment Food & Rural Affairs

Plant Pest Factsheet

Citrus longhorn beetle

Anoplophora chinensis

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

Background

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. The main pathway of introduction of this pest into Europe has been with ornamental trees from Asia. It poses a serious threat to horticulture, forestry and native trees in the UK.

Why the concern?

Citrus longhorn beetle has been intercepted in the UK at nurseries and at premises involved in importing bonsai and ornamental trees from China, Japan and South Korea. The pest has also been found associated with imported trees in private gardens. The most common hosts have been maples especially *Acer palmatum* (Japanese maple).

An outbreak of citrus longhorn beetle was detected in Parabiago, Lombardy, Italy in 2000 and since then two other outbreaks have been detected in Lombardy at Montichiari (2007) and Gussago (2008). Between 2001 and 2013, Lombardy plant health service spent €180 million on eradication measures, including the removal of over 25,000 trees, however the pest may have spread too far for eradication to be practical. Outbreaks of the pest have also been discovered in Soyons, France (2003), Turanj / Sveti Filip I Jakov, Croatia (2007), Westland, the Netherlands (2007), Rome (2008), Boskoop, the Netherlands (2009) and Prato, Italy (2014). 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 the 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 and 2 times the 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 cause much more limited damage by feeding on foliage and eating the bark of young shoots.

Figure 2. Citrus longhorn beetle adult (21-37 mm in length). Fifty pence coin provided for scale.

Citrus longhorn beetles spend most of their life as larvae inside the main 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 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. These holes are circular and on smooth barked trees resemble drilled holes. Other less obvious symptoms include scars/slits on the bark at the site that eggs have been laid and piles of frass (sawdust like droppings) at the base of an attacked tree. In thin stemmed trees bulges in the trunk can indicate 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 March 2012, the EU published emergency measures to reduce the risks of the introduction and spread of *A. chinensis.* These include requirements concerning the importation of plants from China and other third countries where the pest is native, plus the production and movement of plants produced within demarcated areas in the EU. They also set out the measures that member states are required to take to eradicate or contain populations of the pest. This includes a list of ‘specified plants’ to which measures apply, and which are known to be the most significant hosts of citrus longhorn beetle. They are: *Acer* spp.

(maples), *Aesculus hippocastanum* (horse chestnut), *Alnus* spp. (alder), *Betula* spp. (birch), *Carpinus* spp. (hornbeam), *Citrus* spp., *Cornus* spp. (dogwood), *Corylus* spp. (hazel), *Cotoneaster* spp., *Crataegus* spp. (hawthorn), *Fagus* spp. (beech), *Lagerstroemia* spp., *Malus* spp. (apple), *Platanus* spp. (plane), *Populus* spp. (poplar), *Prunus laurocerasus* (cherry laurel), *Pyrus* spp. (pear), *Rosa* spp. (rose), *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 citrus longhorn 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 remove the infested trees and roots systems and to safely dispose of the material by chipping, burning or by deep burial. Foliar insecticide sprays can be effective against adults, but are not effective against larvae and pupae. Pheromone traps have been used to monitor populations in Lombardy.

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

Advisory Information

If you suspect the presence of this pest or see a beetle you suspect to be a citrus longhorn beetle, trap it if possible, and immediately report the finding to the relevant authority:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, Sand Hutton, York. Tel: 01904 405138
Email: planthealth.info@apha.gsi.gov.uk

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit:**
Email: hort.marketing@gov.scot

For **Northern Ireland**, contact the **DAERA Plant Health Inspection Branch:**
Tel: 0300 200 7847 Email: planthealth@daera-ni.gov.uk

For additional information on UK Plant Health please see:
https://secure.fera.defra.gov.uk/phiw/riskRegister/
https://www.gov.uk/plant-health-controls
http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases
https://www.daera-ni.gov.uk

Authors

Original: Dominic Eyre and Neil Giltrap (Defra) February 2010
Update: Helen Anderson, Dominic Eyre and Neil Giltrap (Defra) May 2016