

IMPACT

integrated management of forest
pests addressing climate trends

Pest profile – Western Conifer Seed Bug

Scientific name: *Leptoglossus occidentalis* (Heidemann)
Taxonomic position: Hemiptera, Coreidae.
Common name: Western Conifer Seed Bug or Leaf-footed bugs,



Hosts: Conifers and pines in hedgerows, woodland edges, parks and gardens.

Threats: The western conifer seed bug (WCSB) is regarded as an invasive forestry pest because of the damage it causes during consumption of Douglas-fir (*Pseudotsuga sp.*) conifer seeds and developing cones of various other species of the pine family (*Pinaceae*). They also feed on developing seeds and fruits of a wide variety of plants, including dogwood and sumac. Nymph feeding causes significant seed loss in commercially important crops with seed destruction rates of 80% been recorded in some nurseries. Thus, its direct economic impact is a reduction in the quality and viability of conifer seed crops.

Distribution and spread: Previously limited to western North America but in the past 50 years it has increased its range in North America. In 1999 it was introduced into western European countries, by being accidentally transported in timber, and its spread could also possibly have been aided by Christmas tree shipments, where it has spread rapidly and during 2008-2010 influxes of immigrants were reported from the coast of southern England, which have subsequently spread to form a wide distribution throughout the UK but not Ireland.

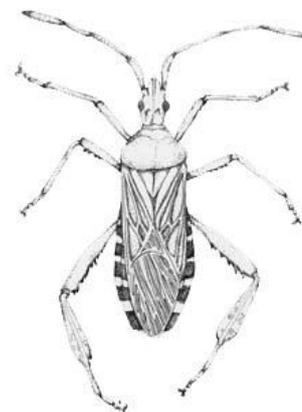
Climate change: In warmer regions it has been observed feeding on non-coniferous plants such as citrus and pistacia so with predicted warming it could attack other tree species.

Control: These bugs do not bite or sting, nor do they cause damage to the home as they look for warmer places to overwinter. They will, however, give off a pungent odor if handled, which is part of the insect's defensive strategy. They also make a buzzing sound when flying. If found indoors, they should be removed by hand using tissue paper or rubber gloves, before disposing.

Monitoring: In many cases, it has not been possible to associate pest records with observations on potential host plants. Therefore it seems desirable that studies on the distribution of *L. occidentalis* and the possible impacts of this invasive species on coniferous forest ecosystems or in urban environments should be conducted.

The Adult

The insects overwinter as adults under protective debris and other shelter. However, during the cool season they are semi-dormant. They neither reproduce nor feed, but rather live off fat reserves. In spring these bugs move outdoors to nearby coniferous trees and feed on male flowers and year-old cones. The adult WCSB is a dull brownish colour, about $\frac{3}{4}$ inch long, with a flattened leaf-like expansion on the hind legs and a faint white zigzag stripe pattern across the midpoint of its upper surface. The females are larger than males. When an adult insect takes flight, it lifts its wings to reveal bright yellow-orange areas on its back.



Eggs: Beginning in late May, females lay rows of eggs glued in small groups on needles of the host trees. The eggs hatch in about ten days and the young nymphs then begin to feed on tender cone scales and sometimes the needles. The immature or nymph stages somewhat resemble wingless adults. The nymphs are orange and brown, becoming reddish-brown to brown as they develop. Nymphs pass through five stages and reach adulthood by late August and September.

Adults then feed on ripening seeds and cones until cold weather arrives and the insects begin seeking over-wintering quarters.

There is only one generation per year.

The IMPACT project, with partners Forest Research in Wales, Swansea University and the National University of Ireland, Maynooth is looking at improved pest control measures. Top of the agenda for the *Integrated Management of forest Pests Addressing Climate Trends (IMPACT)* team is assessing how changing climate will influence the damage caused by pests and pathogens. The project is part funded by the European Regional Development Fund through the Ireland – Wales Programme (INTERREG IVA) and Forestry Commission Wales. For more information log on to:

www.impactproject.eu

