



Factsheet

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Carrot weevil *Listronotus oregonensis* and *L. texanus* *Exotic threat to Western Australia*

By John Botha, Darryl Hardie, Stewart Learmonth and Greg Power, Hortguard™ Initiative AGWEST

Background

The carrot weevil adult is a dark-brown snouted beetle about 6 mm long. It overwinters in plant debris in and about carrot, celery and parsley fields infested in the previous season.

The species *L. oregonensis* occurs in north-eastern North America as well as Atlantic Canada. *L. texanus* occurs further south, in Texas.

Potential impact

Climate matching with other parts of the world indicates that in WA the areas south of the line from Perth to Albany would provide a suitable habitat for *L. oregonensis* and to a lesser extent also for *L. texanus*.

Carrot weevil adults rarely fly and consequentially the insect does not spread rapidly. Its presence in a particular location should be evident for a season or two before it builds up to serious levels. Economic damage is done by the larva that tunnels in the root of the plant. Development of a serious infestation can be delayed by not planting carrots or other host crops on or adjacent to sites that were infested the preceding year.



FEEDING DAMAGE TO CARROT ROOTS

PHOTO: ENTOMOLOGICAL SOCIETY OF CANADA



ADULT CARROT WEEVIL

PHOTO: ENTOMOLOGICAL SOCIETY OF CANADA



DISTRIBUTION



For further information on WA quarantine regulations for this pest please refer to the Carrot Industry Protection Plan and Reference Manual, or contact Agriculture Western Australia's Quarantine Entomologist, Mike Grimm, on (08) 93683752.

Plants affected

Carrot weevil attacks mainly carrots, celery, parsley and parsnip.

Season of occurrence

In spring or early summer, overwintering adults become active and mate after a few warm days. In WA they would be laying eggs from mid to late November. However, they do not attack the new crop until it is at the first true leaf stage. Only a few eggs are laid on the root below the crown. Before egg laying, adult females chew small cavities in the petioles (80%) or crown (18%) of carrots and then deposit an average of two to three eggs in each, sealing the cavity with a black exudate. Eggs hatch after one to two weeks and the young larvae tunnel down into the petiole, heart and root or leave the stalk and roots via the soil. After feeding for at least three weeks, larvae leave the carrot and pupate in the soil. After one to two weeks, adults emerge. If warm weather or an early crop has permitted adults to mature early in summer, some second-generation eggs and larvae may develop.

Symptoms

Adults mainly feed on leaves and petioles which show sooty mould and honeydew, and larvae on the petiole, heart and roots of plants. Feeding tunnels tend to occur in the upper one-third of the root, showing a conspicuous, darkened, partly open tunnel in the crown after the larva has matured and left the root. Some young plants may wilt and die as the root is tunnelled by the developing larva. The damage is not otherwise conspicuous until the larvae are nearly mature. Carrot weevil also causes severe root and crown injury to celery plants.



PHOTO: AGWEST

LARVA TYPICAL OF CARROT WEEVIL



PHOTO: ENTOMOLOGICAL SOCIETY OF CANADA

ROOT AND CROWN INJURY TO CELERY

