Identification & Advisory Service

Vine weevil
*Otiorhynchus sulcatus*

Vine weevils are fairly large beetles belonging to the weevil family, recognised by their long snout (rostrum) and elbowed antennae. The adults are all female, with the ability to reproduce parthenogenetically, producing female-only offspring from unfertilised eggs. Females lay hundreds of eggs over extended periods and once hatched, the larvae eat the roots, tubers and lower stems of a wide range of herbaceous plants. When they have emerged the nocturnal, flightless adults continue to eat plant foliage. Vine weevils are consequently widespread and substantial, horticultural pests.

Identification
This is a fairly large species of weevil and adults are around 1cm in length. Adults weevils are distinguished by their long rostrum, elbowed antennae and bi-lobed tarsi. Vine weevils have a dark, matt appearance and orange tufts of hair on the wing cases (elytra). They are nocturnal creatures and have fused wing cases which make them flightless beetles. Their presence is often indicated by notch shaped cuts left in vegetation. The larvae can be found in the soil below plant bases, resting in a distinctive ‘C’ shape. Larvae grow to 1.5cm, and are plump, pale and legless with hardened, brown head capsules.

Possible confusion
There are 18 species of weevil belonging to the *Otiorhynchus* genus in the UK. All are closely related to the vine weevil, and are easily confused. Adults of these other species feed on an array of plants and cause similar damage to vegetation, but the larvae are considered less problematic.

Rough strawberry-root weevil
*Otiorhynchus rugosostriatus*

Browner, reddish colouration with punctate elytra. Adults can reach 5.5-8.5 mm in length. A frequent strawberry pest found in the south of the UK.
Raspberry (clay-coloured) weevil

*Otiorhynchus singularis*

Paler than the vine weevil with clay-like colouration and elytra coated in short hairs. Smaller size reaching 8mm in length. Adults and larvae damage a wide range of food plants including conifers, bramble and raspberry plants. Widespread throughout the UK but mainly found in the west of the UK.

(5) Adult *Otiorhynchus singularis*

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**Distribution and habitat**

The vine weevil is native to the UK and Europe and is established in nurseries, greenhouses and gardens throughout Australia and North America. It is able to attack a broad range of host plants, including popular herbaceous shrubs such as rhododendrons and hydrangeas.

**Life cycle**

Female vine weevils have the ability to reproduce by telotoky, a form of parthenogentic reproduction where offspring develop from unfertilised eggs, producing only females. Within these male-less populations, each female can lay several hundred eggs without the need for male fertilisation. Eggs are laid and dropped into the soil near food plants, often in gardens and indoor pots. The larvae hatch 10-15 days later and remain in the soil where they feed on roots. The larvae have 6 instar stages, growing larger with each stage and in the final phase, when they are most damaging, eating large roots. After pupating the adults are initially white, with their colouration becoming darker and elytra hardening over the next 6-10 days. The adult emerges from the soil after dusk and starts feeding on foliage, returning to the top surface layer of soil during the day. In the UK larvae emerge May to June but often emerge earlier if developing in indoor house pots, between March and April.

**Damage**

Vine weevil larvae destroy the roots system of many garden and house plants, causing loss of root function, wilting and death. Adults feed on a range of foliage but damage plants considerably less than larvae. The diversity of food plants targeted, nocturnal behaviour of the adults and hidden, subterranean larvae mean that vine weevils can be challenging to detect and control. Vine weevils are consequently considerable pests in gardening, horticulture and agriculture.

**Dealing with infestations**

Monitor plants each week for early signs of vine weevil infestation, such as leaf edge notching where adults have been feeding and unexplainable wilting of plants. Check for larvae in the surrounding soil of dying plants and search for the nocturnal adults by torch at night. Remove and destroy any larvae or adults and dispose of soil where weevils have been found as this may contain more eggs, pupae and larvae. As adults are flightless, barriers such as netting, placed around plants, reduce colonisation. Many chemicals are available, however biological control can be more effective than use of insecticides, which kill natural insect predators of the larvae including centipedes and ground beetles. Nematode worms, such as *Steinernema carpocapsae*, and *Heterorhabditis bacteriophora*, which attack and destroy larvae are commercially available. Insectivorous predators, such as birds, can be encouraged by providing nest boxes.

**To find out more:**

BBC Gardening, Pests and Diseases

Royal Horticultural Society Advice
[www.rhs.org.uk/Advice/profile?PID=234](http://www.rhs.org.uk/Advice/profile?PID=234)

The American Rhododendron Society, Black vine weevil biology and management
[www.scholar.lib.vt.edu/ejournals/JARS/v49n2/v49n2-cowles.htm](http://www.scholar.lib.vt.edu/ejournals/JARS/v49n2/v49n2-cowles.htm)