Information Sheet 01/03

Hardy Nursery Stock

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Two new weevils threaten nursery stock – *Otiorhynchus armadillo* and *Otiorhynchus salicicola*

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The HDC were made aware of the potential threat posed by the introduction of these two new pests to the UK and have produced this information sheet to assist growers with identification and control.

Background

Black vine weevil (*Otiorhynchus sulcatus*) (Fig 1) has been the main weevil pest in nursery stock until now, but other native species such as *O. singularis*, the clay coloured weevil, and *O. rugostriatus*, the red-legged weevil, have been known to damage both roots, and foliage (particularly in early summer) of a range of plants and their numbers have been increasing over the past few years.

Recently two new non-native weevil species (*O. armadillo* and *O. salicicola*) have been introduced on plant material from Europe. These weevils are serious pests in the Pistoia region of Italy, France and Switzerland, and *O. armadillo* in southern Germany, and may become serious pests in UK HNS.

O. armadillo has become established in SW London where it has displaced the ordinary black vine weevil and has been recorded in Cardiff, Edinburgh, and parts of Surrey. *O. salicicola* has also been found in SW London and Surrey.

Identification and biology

- *O. salicicola* is much larger than the native black vine weevil (about 1.5 times longer). *O. armadillo* is only slightly larger and could be confused with black vine weevil (Fig 2).
- *O. salicicola* infestations can build up rapidly as two generations are possible per year in warmer conditions, whereas black vine weevil and *O. armadillo* have only one.

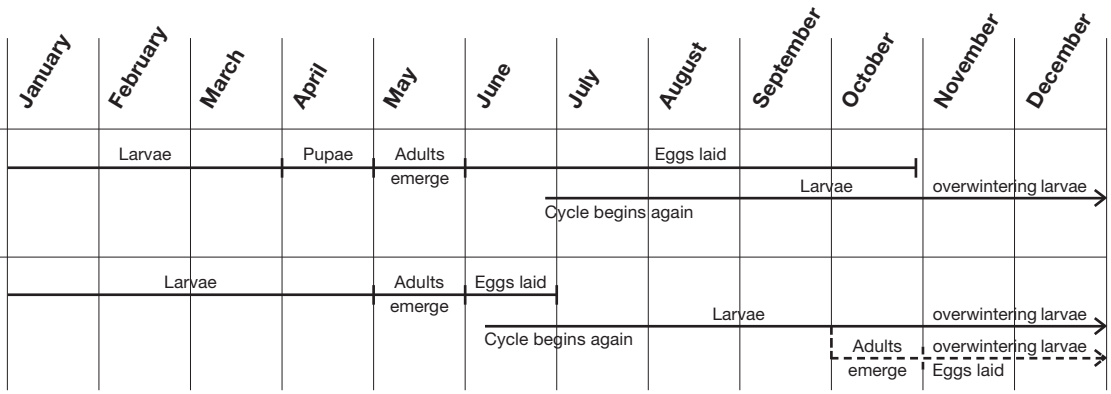
Both species:

- Are nocturnal but may be active during the day as well.
- 'Play dead' if disturbed, as does black vine weevil but,on recovering they crawl rapidly away, unlike black vine weevil.
- Lay small black eggs (less than 1 mm), whereas black vine weevil eggs are pale brown in colour.
- Have males and females, unlike black vine weevil, therefore, increasing the likelihood of developing pesticide resistance.
- Have larvae which feed on roots, while adults feed on leaves causing significant damage.

1 Black vine weevil *(O. sulcatus)* (left) and clay coloured weevil *(O. singularis)* (right) copyright SCRI 2001

2 *O. salicicola* (left) and *O. armadillo* (right) copyright The Natural History Museum

Table 1
Lifecycles



Host plants

O. salicicola and *O. armadillo* feed on a wide variety of HNS plants, including *Viburnum tinus*, Ivy (*Hedera* spp), *Carpinus*, *Taxus*, *Viburnum bodnantense*, *Acers*, *Rhododendron* spp and cultivars, and many conifers such as *Cryptomeria japonica*.

Bay Laurel (*Laurus nobilis*) and Cherry Laurel (*Prunus laurocerasus*) are favourites of the adults of both species of weevil, whereas black vine weevil does not normally feed on these.

Control measures

Cultural control options

Although not much is known about these two weevils, cultural control methods used against black vine weevil, should be effective. Practice good hygiene; clean up neglected areas of the nursery; dispose of old pots and plug trays; bury or burn old compost or sub-standard plants for disposal; check thoroughly bought in pots for the presence of the pests. (See HDC Factsheets 01/03 and 02/03 'Vine weevil control in soft fruit' and 'Vine weevil control in hardy nursery stock'.)

Biological control

Experience in Italy and Switzerland showed that nematodes (*Heterorhabditis* spp; trade name Larvanem) are effective against the larval stage of both weevils when correctly applied at temperatures between 12–28°C. Application must be made when the majority of larvae have hatched and are susceptible to infection.

A new nematode product, Nemasys L using *Steinernema kraussei*, is active at temperatures down to 5°C, so increasing the opportunities for use. This nematode shows excellent control of the black vine weevil and it is likely that this will be the same for these two new weevils.

Chemical control

Researchers in Florence reported high resistance in both species to many chemical drenches. High volume sprays of chlorpyrifos were shown to be effective against the adult weevils. Chlorpyrifos (eg Dursban) is approved for use as a drench on conifers and can be used off-label at growers' own risk on outdoor HNS subjects.

In France the compost incorporated product suSCon Green was found to be effective against these species and from what we know of the mode of action of Vi-Nil and Intercept 5GR, it seems likely that these products would also be effective against both the new species, providing that incorporation is thorough and even.

Action points for growers

The threat from these weevils appears to be real and because there are high numbers in several areas in the South East of England, HNS growers should be alert.

- Watch for unusual or severe leaf notching in early summer, especially on subjects, such as *Viburnum tinus, Laurus nobilis* and *Prunus laurocerasus* that are not normally attacked by black vine weevil.
- Send a sample of notching or weevils themselves to your local consultant, diagnostic laboratory or the RHS for identification, if in any doubt.
- Raise staff awareness to the problem using this information sheet.
- Continue to use control measures for black vine weevil, as it is likely that these will also control the two new species.

Note

All recommendations for use of insecticides are as a guide only. Growers should always check the product label before use. Growers using products under the Specific Off Label Approval (SOLA) system do so at their own risk, and must have a copy of the SOLA before starting application.

For further information on black vine weevil control see HDC factsheet 'Vine weevil control in Hardy Nursery Stock' 02/03.

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