Fact Sheet

White-fringed weevil in potatoes

TASMANIAN INSTITUTE OF AGRICULTURE

Introduction

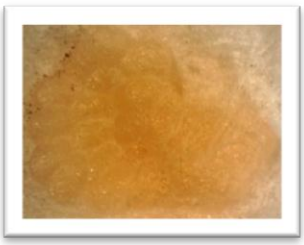
The white-fringed weevil (*Naupactus leucoloma*) is a major pest of several crops in Australia, particularly potatoes, lucerne and peanuts. Originally from South America, they were first reported in New South Wales in 1932 but are now found throughout cropping areas of Australia, including Tasmania where they appear to be increasing their range. Infestations in pasture and lucerne often go unnoticed until crops are planted. Once established, they are extremely difficult to eradicate.

Damage

The weevil grub (larva) is the pest stage. They live in the soil and feed on the roots of a wide range of plants. In potatoes they burrow into tubers, leaving small, shallow holes which can become infected with other organisms. Adult weevils feed on a wide variety of plants (over 380 plant species) at the base of leaf margins, leaving characteristic “notching”, but this seldom causes economic damage.

Description and life-cycle

ADULTS: Slate-grey with distinctive white stripe on each side of the wing cover (resembling a sunflower seed on legs),10-13 mm in length. Wing covers fused together, so they cannot fly but can walk long distances. Emerge from soil in late November through to April, with peak numbers usually in February. All adults are female and can lay over 1000 eggs each. One generation per year.



EGGS: Very small (<1 mm diam.), oval, laid in clusters of about 12-60 in the soil on roots, in ground litter beneath plants or on stems and lower leaves of plants. Milky-white when first laid, changing to dull light-yellow. Fixed together with a sticky, gelatinous mass which hardens into a protective film allowing them to withstand drought for several months. Soil sometimes sticks to an egg mass making detection impossible. Hatch in about 2 weeks after rain or irrigation.

GRUBS: Grey-white body with yellow-brown heads, large black mandibles (jaws) and no legs. Head is retracted into the body so only the jaws are clearly visible. Eleven growth stages (instars) with the first being a non-feeding stage that can survive for several months in the soil before moulting to the second instar to commence feeding on roots. Fully grown grubs are about 13 mm x 6 mm and cause the most damage. Found in the soil mostly at depths of 5-15 cm.

PUPAE: White, 10-12 mm long, found in oval chambers 5-15 cm deep in the soil in spring and early summer. Turn brown just before hatching.

Fact Sheet

White-fringed weevil in potatoes

Control

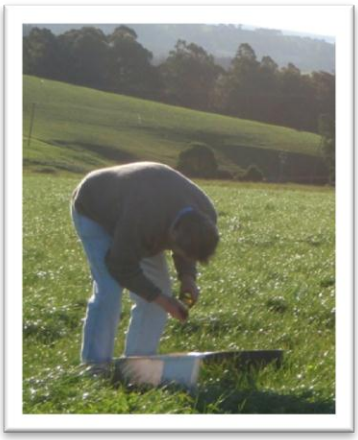
Control of white-fringed weevil grubs with insecticides is difficult and can give variable results. Planting of potatoes in paddocks previously sown to legumes or other preferred hosts should be avoided. Already established infestations within a paddock are best reduced by having long-term rotations of unsuitable host plants such as cereals or grasses (without legumes).

Sampling paddocks for grubs

A sampling plan for white-fringed weevil grubs, previously devised by researchers in Western Australia and Victoria, aims to assess the risk of damage to potato crops before planting so that informed decisions can be made on whether there is a need to apply insecticides or not.

Sampling is best done during winter months when grubs are large, easy to identify and readily visible in the soil:

- Use a spade to take a sample of soil (approximately 20 cubic cm);
- Sift through the soil by hand to search for the white grubs;
- For an average sized paddock take 5 spade samples from each of 9 randomly selected and widely separated areas;
- If more than 1 grub is found in the 9 sampling areas, then consider either not planting to potatoes or treating the soil with an insecticide before planting;
- If weevils are present in only localised patches, then treatment of just these areas may be adequate.



Summary

• White-fringed weevils are an intractable pest once established on a farm.
• Numbers can build-up in paddocks unnoticed, particularly in pasture sown with clover or in lucerne.
• Before planting potatoes, soil should be sampled to determine whether grubs are present or not.
• If warranted, either treat with a control agent or reconsider planting to potatoes.
• Established white-fringed weevil infestations within paddocks can be reduced with long rotations of unsuitable host plants such as cereals or grasses.

This information was prepared by the Tasmanian Institute of Agriculture, University of Tasmania, as part of Horticulture Australia Ltd project PT09027, funded by the Processing Potato Industry and matched with funds from the Federal Government.