

## White fringed weevil and young vine damage

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*Typical symptoms of white fringed weevil damage alongside healthy vines*

White fringed weevil damage is not a common occurrence but occasionally I see symptoms similar to those shown here. These vines are in the second growing season but vines are susceptible in their first growing season and I have visited properties over the years where this has been the case.



*Typical white fringed weevil symptoms*

The distribution of the symptoms is often random and isolated to individual or clusters of vines which gives a clue to start looking for the underground damage caused by white fringed weevil.

The damage is apparent and normally close to the surface once you start to dig around the vine. Sometimes it is possible to find the active grubs in the soil as you remove it from around the vine.

However, you are not guaranteed to find one as it depends on the time of the year and number of grubs. There may have only been one grub, so they can be easy to miss.



White fringed weevil can cause severe damage to the underground parts of the vine. By the time symptoms like the above become apparent the vines are generally completely ring barked and not likely to recover, or if they do, they are severely compromised and open to infection from root and trunk inhabiting fungi.



*Underground white fringed weevil damage on the same vine*



Signs roots growing at the surface above damage



White fringed weevil beetle

There are a number of weevils that have white fringes. They all look similar but the white fringed weevil *Naupactus leucoloma* and adult beetle (Centre) are larger and more damaging than the other smaller species.



Weevil larvae and corresponding adult (left to right) apple weevil, garden weevil, white fringed weevil, Fuller's rose weevil, vegetable weevil



White fringed weevil grub

Damage to vines seems to be isolated and random and generally limited to the first few seasons after which the vines trunk seems to become too woody for the white fringed weevil to feed on. I am unsure if they cause significant damage to vine roots. I have noted on two occasions vines planted into old Lucerne paddocks have sustained significant damage.

White fringe weevil thrives in warm moist conditions and are a big problem in irrigated Lucerne in Australia. They have a wide host range and a long-life cycle (224 to 672 days in New Zealand), most of which is spent underground as grubs. They are parthenogenic so females don't need to mate before producing eggs and the eggs need moisture to hatch. This is likely why they are more of a problem in irrigated crops.

## CONTROL

**Avoidance is best**, as chemical control of grubs underground is difficult. The easiest and most effective control of white fringed weevil is prior to planting with shallow repeated cultivations to break up surface thatch and expose the grubs to sunlight and/or birds. Post cultivation surveys of the top 200mm of topsoil are recommended to gauge the success of the cultivation programme. After planting, control is a little more problematic. Sampling soils for the presence of the grub prior to planting is the best way to ensure you don't end up with an unexpected issue (the same could be said for grass grub). There may be some biological control and the Insect parasitic nematode (genus *Heterohabditis*) has reduced numbers in Lucerne crops in Australia.

There has been some success in controlling white fringed weevil beetles with ground sprays of Bifenthrin or Chlorpyrifos (Lorsban) as they emerge. This targets egg laying adults to reduce the population. Dealing with the grubs underground is more problematic. In New Zealand reasonable control has been achieved by incorporating Suscon Green (Chlorpyrifos in the form of a controlled release granule) into the soil. This could be done post planting and I think incorporating Suscon Green into the soil around any replants would ensure that any remaining grubs are killed.

Sustainable alternatives to conventional treatment are also available in the form of organic brews which contain Entomopathogenic fungi to be effective against white fringe weevil at different stages of their life cycle.

**Note:** Suscon Green is an Organophosphate and full protective gear should be worn when applying sprays or granulated product. Its active ingredient chlorpyrifos requires permission for SWNZ members to use.

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