

Clover Root Weevil

Frequently Asked Questions

WEEVILS

How did it get to NZ?

We don't know if it arrived by sea or air but possibly by sea as there appear to have been 2 initial entry points Auckland and Tauranga.

Is our biosecurity good enough?

There are a host of organisms currently not in New Zealand that we would prefer not to have and it is inevitable that some will cross our borders regardless of how effective border security is. That many have so far been kept out suggests our border biosecurity is effective.

How many generations of weevils in a season?

In the southern South Island at least one and quite likely a partial second.

We have had notching for 20 years – is there anything else other than CRW that does this?

Several insects cause notching and, although CRW is distinctive, notching by other insects can sometimes appear similar.

Do wet winters and stocking rate affect CRW larvae?

We do not think wet winters will affect larvae survival and do not know if heavy stocking will cause significant mortality, they are very robust.

How many flights do they have a year?

One dispersal flight per generation.

Is there any advantage in targeting insecticide at peak flight times?

This is unlikely to be very effective.

Does the insecticide affect other insects?

Broad spectrum insecticides like chlorpyrifos, which is registered for use against CRW, will affect a wide range of insects.

Will we get rid of all CRW?

No, CRW is here to stay.

Does it like wet saturated soils?

It is unlikely that wet soils will affect CRW but prolonged flooding may do.

Is there any other weevil killer on the horizon?

We have investigated some other biological options and will continue to do so.

When do the weevils and wasps fly?

In the southern South Island the weevils fly predominantly in mid-summer. The wasp flies whenever the weather is warm enough for activity but only makes very short flights while hunting the weevils or seeking food.

WASPS

What happens to the wasp after it's eaten the weevil?

When the wasp larvae reaches the end of its development it bursts out of the weevil and forms a cocoon in the litter on the soil surface. It emerges from this as an adult in 10-20 days.

Is there a predator for the wasp?

We are confident that no natural enemies were introduced with the wasp but it is very likely some predators already in our pastures will prey on it.

Is the wasp spread with the wind?

Generally the wasp will be spread as eggs or very small larvae within flying weevils.

How available are the wasps for release?

There are several places the wasp can be collected from.

How do we tell the wasp is in the weevil?

The weevils must either be dissected or kept alive in a cage for several weeks to allow the wasp larvae to emerge from the weevil.

How do we get more?

Parasitised weevils can be collected from anywhere the wasp has established.

RELEASE MANAGEMENT

Do you release wasps and infected larvae?

We generally release the wasps as larvae inside weevils but occasionally release adult wasps and sometimes put out cocoons.

P.T.O.

How many releases per/ha, @100 weevils/release?

We know a single wasp is enough to establish a wasp population but generally release 100-400 parasitised weevils per paddock. We would expect most weevils within that paddock to be parasitised after 12 months and that the wasp will also be spreading to other pastures after that time.

If your neighbour has a release can you wait for them to come to you?

Yes

Where are you best to let the parasitised weevils go (location in property/wind)?

Choose a paddock that has a weevil population and some clover to support the weevils. A warm paddock will probably speed up wasp establishment and don't release into a paddock that is due for cultivation in the next 3-4 years. Release on the upwind side of your farm may assist later spread to the rest of your farm, alternately a central location where there is lots of stock or vehicle movement may also assist spread.

When releasing parasitised weevils, how do we manage the stock?

Normal stock management should continue.

How does the wasp over winter?

The wasp over winters as larvae inside the weevils. Adult wasps and pupae will not survive the winter.

Do we put them in sheltered spots and shelterbelts?

A warm spot will probably aid establishment.

PASTURE MANAGEMENT

How tolerant will clover be when it is re-sown?

Clover seedlings are particularly vulnerable to weevil feeding.

How did they re-establish clover in the North Island?

Some by resowing pastures and some by natural establishment from clover seed banks in the soil

Do we need to do a lot more soil testing- monitoring N levels?

Nitrogen applications are a critical means of alleviating some of the impact of clover root weevil.

Whats in white clover that attracts them, is it pheromones/sight/sugars?

It is likely to be a combination of factors that attract the weevils to clover.

Do we need to change our pasture mix, increase red clover and herbs, less ryegrass to reduce shading?

White clover is particularly affected by CRW, using other types may be useful and anecdotal evidence suggests there may be an increased role for sub clover and red clovers especially the newer varieties. Lucerne, chicory and plantain are unaffected. Pasture management to assist clover growth will help the clover plants to tolerate damage by CRW.

Any difference in impact on weevils and grub between cultivation and minimum tillage?

While cultivation may kill a few larvae they are very resilient. Unless a non-clover break crop is used before establishing new pasture damage will result regardless of whether cultivation or direct drilling is used. technique.

Will clover growth in spring be as badly affected?

CRW larvae feed over the winter and pupate in spring so for a short period in spring there may be less pressure on clover plants - most damage is done over winter.

Is there studies on white clover species (some varieties are being promoted as more resilient to CRW in seed literature)?

This is being investigated, some varieties may be able to cope with CRW better than others.

Whats the point of putting in a break crop if the all the surrounding paddocks have CRW?

Using a break crop provides a weevil free seed bed in which to establish clover. CRW will reinvade the following summer but the clover seedlings are given a chance to establish before weevil attack occurs.

Is it ok to truck stock from one block to another that you think is unaffected/property to property?

The weevil is probably already there! but not noticed yet.

Beekeepers are also affected, do we need to allow clover to seed especially on higher country?

Establishing a seed bank can provide a source for clover to re-establish from once weevil pressure is reduced by the wasp. This may be particularly relevant especially in difficult to work country?

Clover seed bank can last 5 years in soil.

How are people producing clover seed coping?

More insecticide applications are being used.

How do we manage our lamb finishing paddocks until we get CRW under control and cost (I will flick this to Graham Butcher too, he may be able to bring an article together that includes costs for different options)?

I'll leave this for Graham

FUNDING

Has the funding dried up?

Are you hamstrung by costs.

How much do they cost?

what do you need funds for.

Seed companies, fertiliser companies, industry bodies willing to help?

I can't comment on these other than to say there is a need for ongoing wasp releases and dissemination of information on how to deal with CRW.

Clover root weevil.
Photo: Australian Biosecurity

