

USEFUL LINKS

A regularly updated website including information on CRW biology & control, links to trial reports & farmer case studies: www.cloverrootweevil.org.nz

Or search "Clover Root Weevil" in the sites below:
www.agresearch.co.nz | www.biosecurity.govt.nz

FOR FURTHER INFORMATION

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Financial support for this project was provided by SFF, AGMARDT, Ballance, Pasture Partners, Meat & Wool NZ



PASTURE PEST IDENTIFICATION

BEWARE! CRW Larvae are easily confused with other pests. Below are examples of what you may find during autumn and spring in soil. S=Spring; A=Autumn.



Black beetle 30mm long
North Island only (S)



CRW 2-6mm long
(S & A)



NZ grass grub 20mm long
Honey brown head (S)



White fringed weevil
15mm long (A)



Tasmanian grass grub
15mm long (A)



Adult Weevils



CRW
4-6mm



White fringed
10-12mm



Irenimus
4-7mm

Clover Root Weevil

A major problem for NZ
How to minimise its costs for farmers



Waterproof on-farm tool

WHY IS CLOVER IMPORTANT?

Nodules on roots fix atmospheric nitrogen – 50-300 kg/ha/annum in grazed pasture.

- Acts as a natural source of fertiliser in pastures
- Reduces the need for supplementary N applications
- Improves sustainability

Increases overall feed quality, leading to higher productivity.

A THREAT TO CLOVER: CLOVER ROOT WEEVIL

Clover root weevil (CRW) is present throughout the North Island and is spreading down the South Island. CRW feeds exclusively on clover, preferring white over red. The larval stage is the first pest in New Zealand to target clover nodules, reducing its ability to fix N. CRW can completely destroy clover in severe cases.

IS CRW STILL A PROBLEM?

Yes! It would cost the pastoral sector millions of dollars per year if nothing is done to control this pest.

On individual farms an unchecked infestation could decrease farm gross margins by 10-15%.

WHAT DOES CRW LOOK LIKE?

Adult CRW are what you are most likely to see as they are above ground. Larvae are below ground, have a bright white body with a brown head capsule.



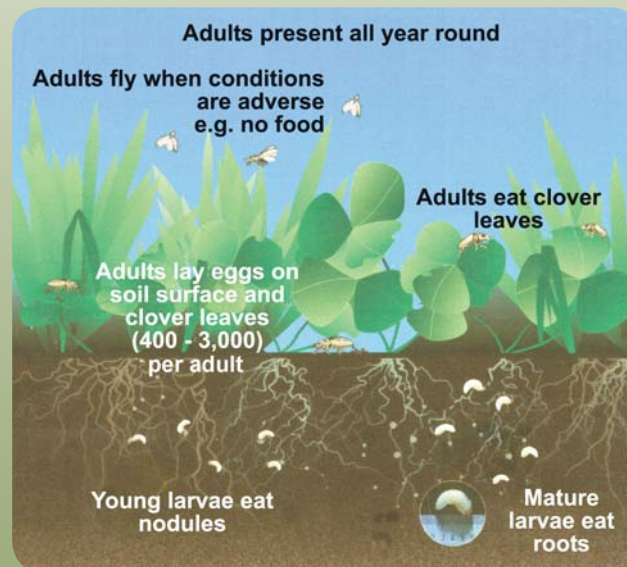
Adult CRW



CRW larva

WHEN SHOULD I LOOK FOR CRW?

CRW are present throughout the year, but adult weevil numbers peak in summer. Larval numbers peak in spring and autumn. Adverse conditions, e.g. drought, can reduce CRW populations but they can quickly recover when the clover comes back.



If clover is already stressed, e.g. by inadequate fertiliser, overgrazing or other pests, CRW can be the straw that breaks the camel's back.

WHAT DAMAGE DOES CRW CAUSE?

- Adults attack clover seedlings and leaves and may totally defoliate the plant.
- Larvae are the most damaging, attacking nodules & roots.



Leaves
U-shaped notches most visible sign



Nodules
Most serious impact on N fixation



Roots
Production & persistence reduced

HOW CAN I MAINTAIN MY CLOVER?

A combined approach is required to maintain healthy and productive clover in the presence of CRW, including the following factors:

N Application

- Applying small amounts of N after grazing in spring and autumn can help clover withstand CRW larval attack – exact quantities of N will vary with your own nutrient management plan.

Note: grasses may outcompete clover if too much N is applied.

Grazing Regime

- Trials have shown that intensive grazing in spring enables clover to compete with grass and thrive. Conversely, sufficient pasture cover in summer protects clover stolons from burning in direct sunlight.

Pasture Renovation

- Using a non-host plant, e.g. brassica or maize, removes pests such as CRW and nematodes so clover can be re-established into a 'clean' site. Cost analysis has shown economic benefits.
- Sowing upright tetraploid perennial ryegrasses as companion plants helps clover to persist better than diploid grasses which can shade and crowd the clover.
- Choose clover lines that suit your farming system and are more tolerant of drought and pests. This will help it to persist in pastures under stressful conditions.

Biological Control

- A parasitic wasp is being distributed throughout NZ and can help to control CRW numbers.
- Its regional impact is affected by environmental conditions, so it is not a 'silver bullet'. This tiny wasp feeds on nectar and doesn't sting humans!

