



Initial screening for control of adult male red clover casebearer moth (*Coleophora deauratella*)

19 December 2017

Moths were collected from a red clover paddocks in mid-Canterbury on 12 December 2017. These were held in vented cages in a shade house. Humidity in the cages was kept elevated using tissue moistened with tap water.

On 13 December 2017, moths were treated with field rates of Mavrik® (a.i. 240 g/l tau-fluvalinate), Lorsban (a.i. 500 g/l chlorpyrifos), Karate Zeon® (a.i. 250 g/l lambda cyhalothrin) and Exirel® (a.i. 100 g/l cyantraniliprole). Control treatments were water only and water plus adjuvant. Each treatment was replicated eight times with 7-8 moths in each dish.

Moths were placed into 150 mm Petri dishes lined with filter paper and confined with a coarse metal mesh lid. Treatments were applied using a knapsack sprayer. At the completion of application, dishes were transferred to a controlled environment room (18°C, natural light) where the mortality assessments were made. At the completion of the mortality assessments, dishes were sprayed with tap water and loosely covered with plastic lids.

Assessment took place approximately 4.5, 24 and 48 hours following treatment.

Results

There was rapid mortality using Mavrik®, Karate Zeon® and Lorsban™ 50EC following application as evidenced by high mortality after only 4.5 hours following treatment (Table 1).

Table 1 Mortality of adult male red clover casebearer moth after treatment with selected insecticides. Mortality corrected using Henderson-Tiltons formula

Treatment	Corrected mortality percentage*		
	4.5 hrs	24 hrs	48 hrs
Water	2	12	20
Water and adjuvant	0	24	42
Mavrik®	82	89	96
Lorsban™	100	100	100
Karate Zeon®	98	100	100
Exirel®	13	71	75

* Results subject to change following further analysis

The results provide a promising indication that some of the insecticides currently used provide effective control of red clover casebearer moth. However, the provisos are that in the field, adults may not receive a direct application due to location in the foliage. In addition, female moths may be less mobile and therefore not come into contact with residues.

Always consult your agrichemical adviser before implementing control measures and practice bee-safe application techniques.

Additional information

Details of what we know to date are outlined below:

- Red clover casebearer is a small moth (about 8mm long) and is very similar to two other species of clover casebearer moth (*Coleophora* spp.) that are already well established in white clover in New Zealand. The principal host plant of red clover casebearer is red clover, although it has occasionally been reported overseas as damaging other clover species (including white clover, haresfoot trefoil).
- Adult moths are expected to be seen in New Zealand from October-December. Eggs are laid by the female moths at the base of florets and the larvae feed on developing seeds in the florets over summer from inside their 'cases' (Figure 1). The first signs of low level damage are holes found in individual red clover florets.
- The moth overwinters as mature larvae typically near the soil surface or in leaf litter. The larvae then pupate and emerge as adults the following spring/summer.
- Currently (December 2017), red clover casebearer has been confirmed from North Otago to North Canterbury, and is likely to have been present for some time. It is also likely to be present throughout the South Island and into southern North Island.
- A small number of parasitoid species are already present in New Zealand introduced to control the *Coleophora* spp. found in white clover. These parasitoids attack the larvae, and may prove effective control agents for red clover casebearer in the future.

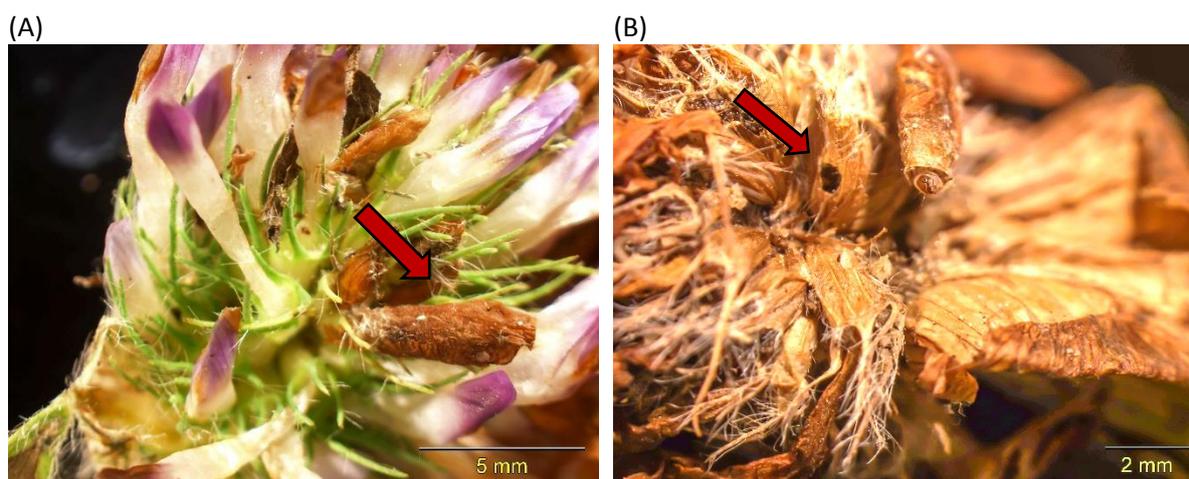


Figure 1. Case containing a feeding red clover casebearer moth (A) and the typical 'hole' type damage seen (B) from feeding damage.

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