

Vegetable beetle may cause problems in canola

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In southern Australia, the vegetable beetle is known to damage summer grown crops, for example sunflowers. Its larvae (also known as false wireworms) are present in the soil from autumn to spring, but are not known to cause damage to canola. But in past seasons some agronomists and growers have suggested vegetable beetle causes damage to canola crops.

In 2006, some growers in the southern regions of Western Australia with early (April) sown canola crops at the three to five leaf stage, observed vegetable beetle (*Gonocephalum misellum* – Blackburn)

chewing stems and growing points. In some cases, portions or whole paddocks had to be reseeded.

A laboratory trial had been conducted in 2005 to determine if there is a corre-

lation between temperature and potential vegetable beetle damage. Further trials in 2006 and 2007 concentrated on finding control options.

Laboratory trials found that damage to

TABLE 1: Average temperature and rainfall

Year	Month	Air temperature (°C)		Soil temperature (°C)		Rainfall (mm)
		Min	Max	Min	Max	
2006	April	9.57	18.83	14.50	21.17	1.79
2006	May	8.18	18.24	11.97	18.06	0.74
2006	June	5.23	16.27	8.81	14.84	0.77

Information from weather station data operated by the Department of Agriculture and Food at Mt Barker, Jerramungup, Katanning and Esperance

THE MAIN POINTS

- Vegetable beetle *Gonocephalum misellum* (Blackburn) may cause economic damage to canola under winter conditions.
- But the rate of damage is greatest when temperatures are higher than 15°C.
- The availability of food sources other than canola may decrease crop damage.
- Control options are limited to baiting.



Damage to canola by vegetable beetle in the field.

FIGURE 1: Rate of canola consumption by vegetable beetle (*Gonocephalum misellum*) in the absence of alternative food sources

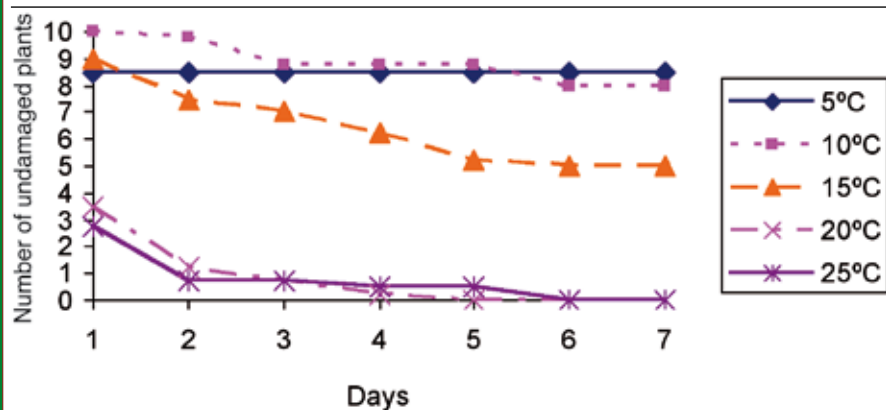
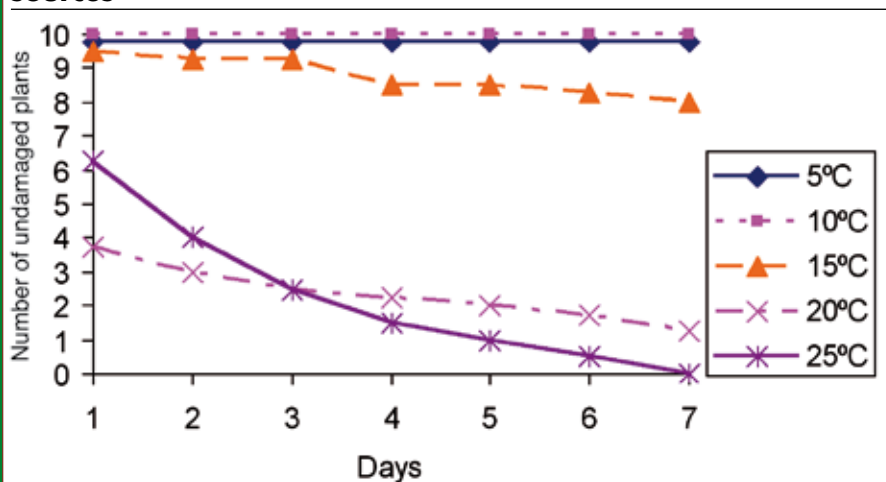


FIGURE 2: Rate of canola consumption by vegetable beetle (*Gonocephalum misellum*) in the presence of alternative food sources





Vegetable beetles damaging canola plants under laboratory conditions.

canola by vegetable beetle was minimal at or below 15°C (0–6 per cent plant number decline per day) and greatest at 20 to 25°C (15–59 per cent plant number decline per day). If beetles were exposed to temperatures of 5°C, no feeding damage occurred (Figures 1 and 2). If beetles had a food choice,

in this case seedling canola with weeds (ryegrass, clover and radish), then there was less damage to canola. The major difference between the 2005 and 2006 growing seasons was slow growth of April sown canola and decreased alternative feed (weed growth) in paddocks due to limited moisture.

Temperatures in April and May in 2006, appear to have been suitable for beetle damage (Table 1), based on amount of feeding damage observed in these studies (Figures 1 and 2).

Control options

Chemical spray control options trialed by growers were found to be ineffective and there was some conjecture that seed treated canola sustained less damage. Field based trials found that vegetable beetle are tolerant to commonly used agricultural insecticides.

Trials in the laboratory and field found that bait applications, rather than insecticidal sprays, caused the highest mortality. Laboratory trials found that canola with methiocarb or cracked wheat baits sustained the least damage especially when compared to canola with seed dressings or canola without any treatments (Figure 3). Vegetable beetles exposed to methiocarb and cracked wheat bait had the highest mortality.

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FIGURE 3: Percentage of canola leaf material undamaged by vegetable beetle at 25°C

