

## 7. SLUG TRIALS

### 7.1 EVALUATING THE IMPACT OF CULTURAL AND BAITING TECHNIQUES ON SLUG CONTROL

#### Location:

"South Roxby" Gnarwarre

#### Background:

Slugs are becoming more of a problem for the southern high rainfall crop producers, particularly in canola. This problem seems to be becoming worse as the move from cultivation to direct drilling takes place.

Slugs cause a problem to canola by nipping off the cotyledons as the plant emerges. Widespread crop losses can occur if they are left unchecked. Slugs cause some damage to cereal plants by reducing the leaf area, although the damage is less severe than in canola.

Producers in the high rainfall area are needing to bait multiple times to get effective control and in some years even multiple baiting is ineffective.

#### Aim:

- To assess the value of a number of treatments in controlling slug numbers.
- To assess the impact of these treatments on canola yield.

#### Take home messages:

- A single slug baiting was ineffective at controlling slug populations.
- Direct drilling into a heavy cereal stubble from a previous crop can result in significant slug damage to canola, even with a single baiting.
- Cereal stubble removal by burning, will significantly reduce the amount of slug damage.
- Cultivation prior to sowing will have a positive effect on reducing slug numbers and damage to canola.
- An integrated pest management approach is required to control slugs effectively. Each treatment alone does not adequately control slug populations

#### Researchers:

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Sandy Luddington, *formerly Crop Care.*

**Sowing Rate:** 5 kg/ha

**Variety:** Grace  
3 beds per plot \* 3 replications  
(15 m plot lengths)

**Herbicide:** 2 L/ha Simazine + 2 L/ha Atrazine applied 28/5/02

**Fertiliser:** 120 kg/ha Granulock 15

**Sowing Date:** 26<sup>th</sup> May 2002

**Slug Bait:** 3 kg/ha Meta + 2 kg/ha Slugout (where used according to treatments)

**Rolling:** Use of a 4 wheel motor bike immediately after sowing.

**Cultivation:** An aggressive power harrow machine approximately 1 week prior to sowing.

#### Observations:

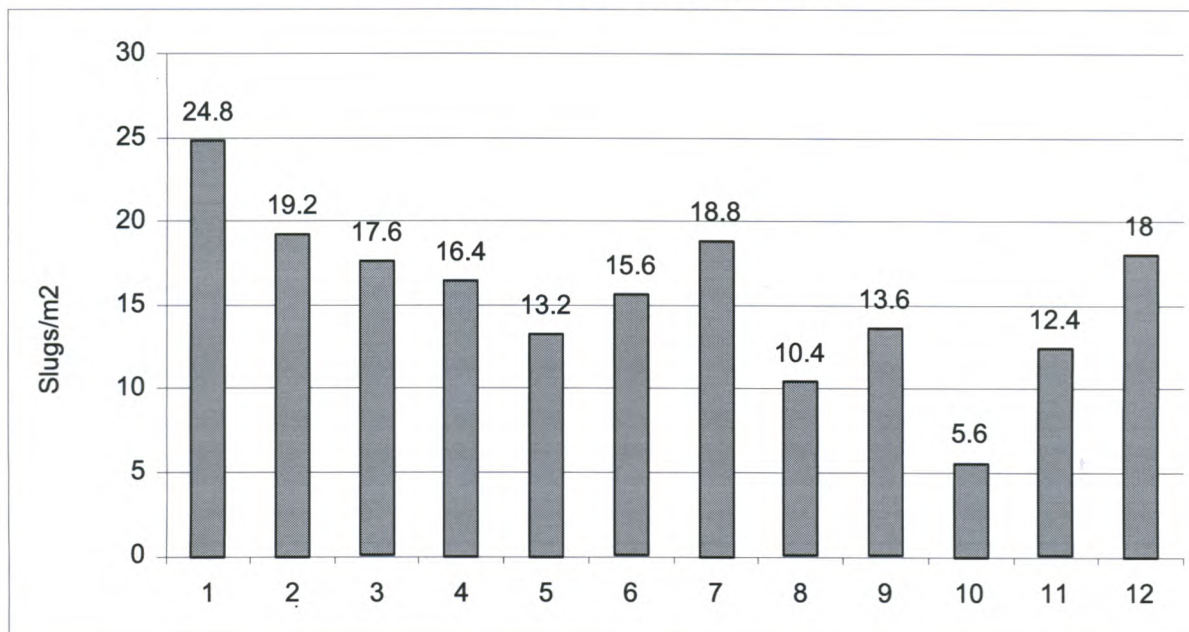
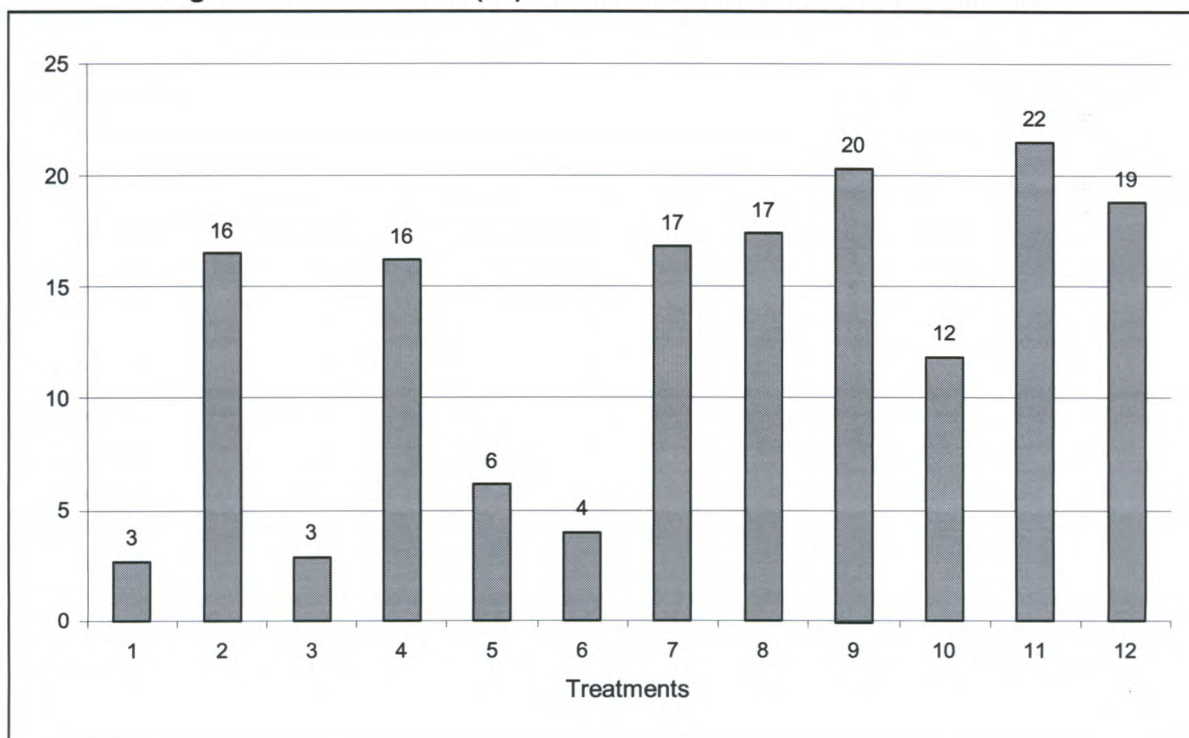
- Slug Counting – Use of 30 cm \* 30cm masonite boards centre bed assessed
- Plant counts undertaken at harvest
- Crop yield determined

#### Treatment List:

T1	direct drill/no burn/no bait
T2	direct drill/ burn/no bait
T3	direct drill/no burn/ bait
T4	direct drill/burn/bait
T5	cultivate/no burn/no bait
T6	cultivate/ burn/no bait
T7	cultivate/no burn/ bait
T8	cultivate/burn/bait
T9	direct drill/burn/no bait/roll
T10	cultivate/burn/no bait/ roll
T11	direct drill/burn/bait/roll
T12	cultivate/burn/bait/roll

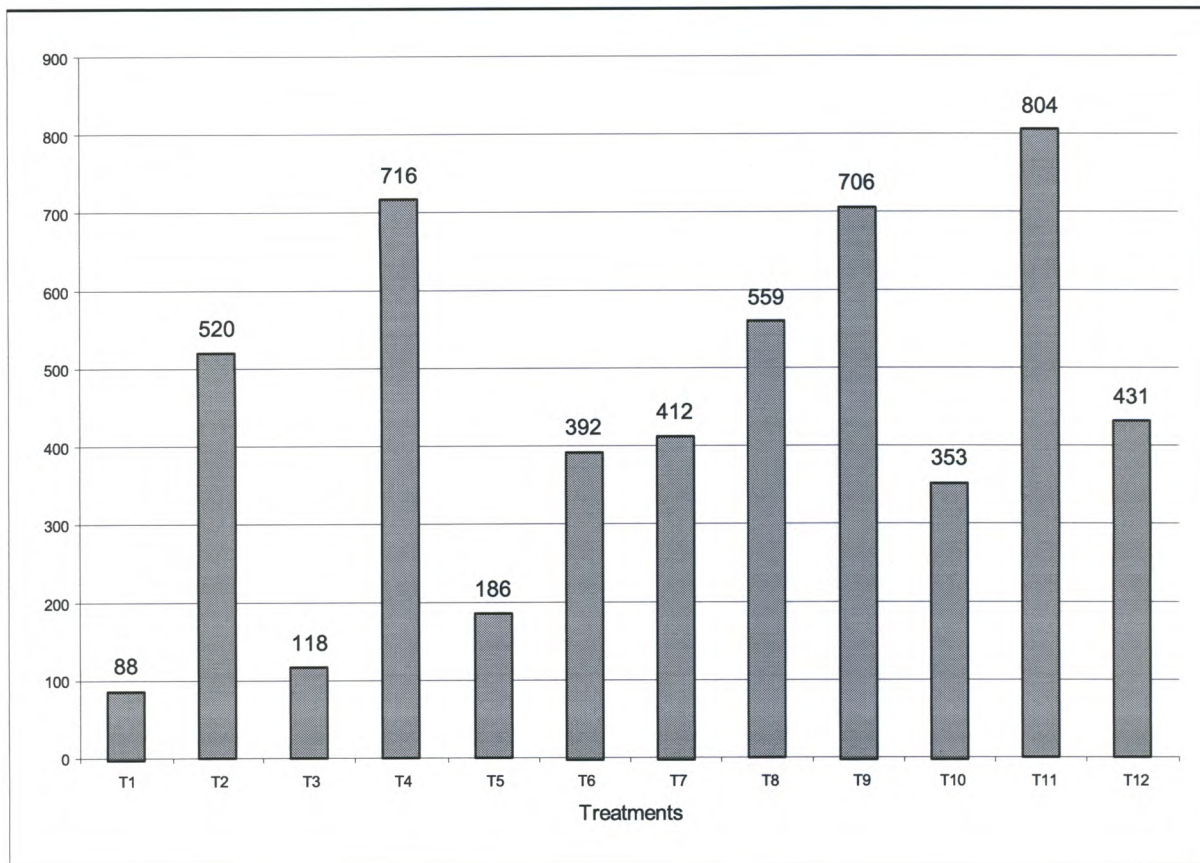
**Results:**

Figure 19 indicates the average slug counts/m<sup>2</sup> for the observation period of 27<sup>th</sup> May to 22<sup>nd</sup> July 2002. Five counts were made during this period under each of the 5 boards in the centre plot of each treatment

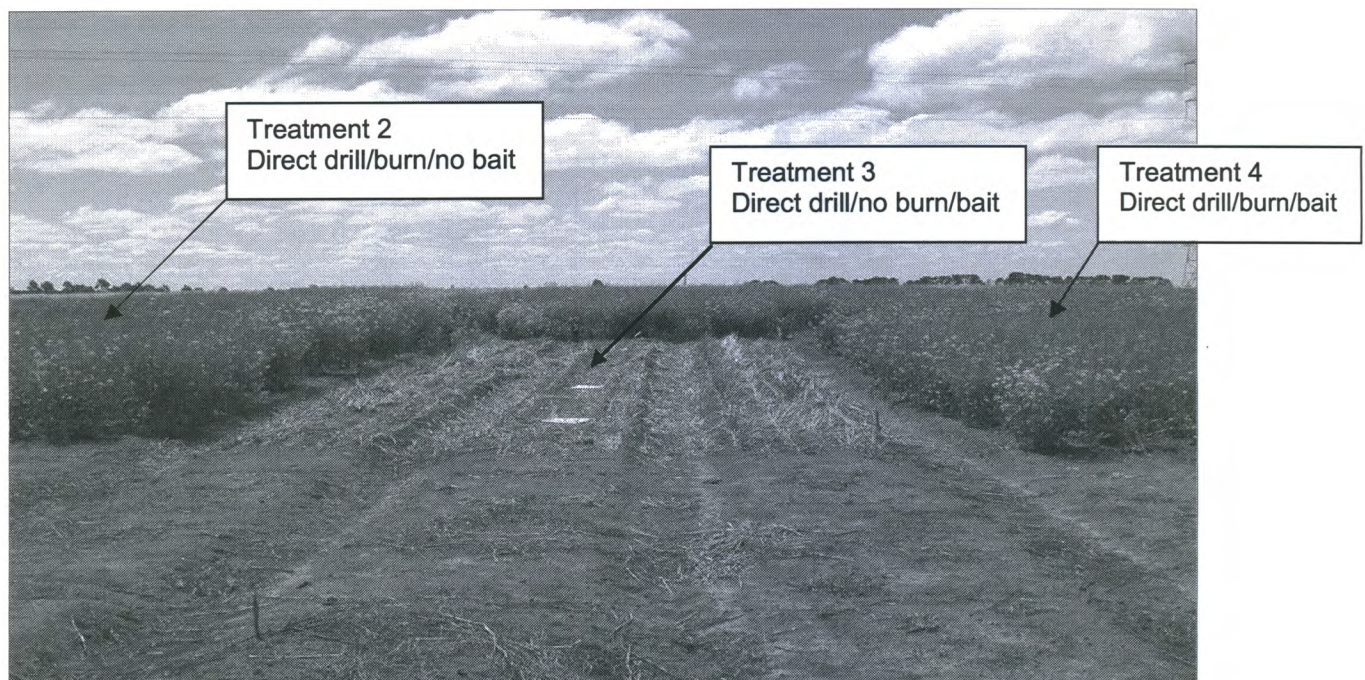
**Figure 19: Average Slug Counts (m<sup>2</sup>)****Figure 20: Plant Counts (m<sup>2</sup>) - Indicates Plant Counts Prior to Harvest**



**Figure 21: Canola Yield (kg/ha) for the Different Slug Treatments**



LSD = 573 kg/ha CV = 53.86



**Photo 9: The above picture was taken on 11/11/02 and show the effect of a non burn treatment (Treatment 3). Surviving plant numbers very low.**



### Discussion:

From Figure 19 it can be seen that slug populations were high during the observation period (27/5 – 22/7) although counts did vary across the treatments. This is of some concern when it comes to assessing each of the treatments for their effectiveness against slugs.

Figure 20 shows a significant difference in plant population at harvest for each of the treatments. Treatments 1,3,5 and 6 had very low surviving plant numbers, with each being a no burn treatment, apart from treatment 6. It would appear that stubble removal by burning has an effect on slug populations.

It appears from Figure 20 that a combination of burning, cultivation, baiting and rolling gave the best slug control.

A single baiting without other cultural treatments appears to be ineffective at controlling slug populations. There appears to be some significant late slug damage to the canola plants.

The final yield (Figure 21) indicates a strong correlation to plant numbers. The best treatment however was only approximately 800 kg/ha, so overall yields were low. Interestingly the best yield was T11 which was direct drill, burn, bait and roll. The CV for the yield data is very high, indicating that there was considerable error in the trial. Given this error, Treatment 11 is only significantly better than treatments 5, 3 and 1.

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