

RESEARCH INFORMATION

CROP: CHICKPEA.	LOCATION: WEE WAA, NSW.
RESEARCHER: AGRISEARCH.	DATE: OCT 2002

A trial was conducted in Sept/Oct 2002 to determine the effect of an array of Vortex Traps on *Heliothis Helicoverpa* spp. infestation of an irrigated chickpea crop by monitoring the larvae population present. *Heliothis* population was predominantly *Helicoverpa punctigera* (80%)

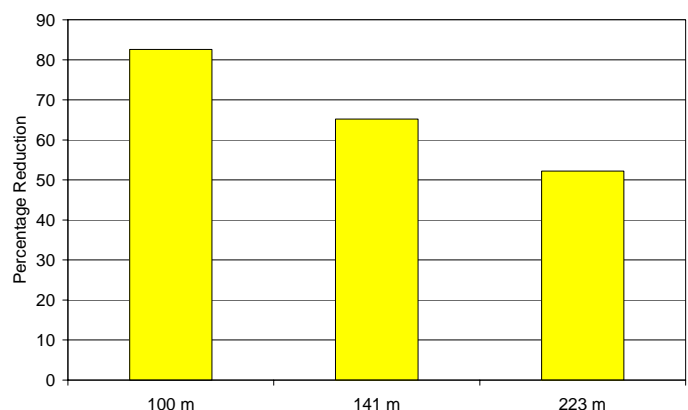
The trap array was 4 traps placed 100 metres in from each edge of the field and 200 metres apart. The site was monitored and the trial initiated when *Heliothis* activity began. Assessments were conducted by counting the number of *Heliothis* larvae present in 8 to 10 metres of row per assessment site. Nine assessment sites were monitored during the trial.

The assessments demonstrated that the Vortex Traps significantly reduced the number of *Heliothis* larvae present for a distance of up to 223.6 metres from any light.

The *Heliothis* population remained below the economic threshold level of 1 larvae per metre for a distance of 100 metres from any light, for the duration of the trial.

The results strongly indicate that within its effective range, the Vortex Trap array provided significant commercial control of *Heliothis*.

Figure 1. *Heliothis* larval infestations in a chickpea crop (2002) showed a marked reduction in the number of larvae present when in close proximity to the Vortex Trap. A greater than 50% reduction in the number of larvae present was detected up to 223 m away from the traps. This compared to the larval infestation present in a chickpea crop at an assessment point 800m from the traps and on the opposite side of a levy bank that was



considered not to be under the influence of the traps.¹

Figure 2. In the chickpea trial conducted in 2002, a small area was not treated with insecticide after the Vortex Traps were introduced to the field. This area was 100 m away from the traps. An area the same distance away from the traps was also treated along with the remainder of the field. When compared to the assessment point 800 m away and “sheltered” from the traps, the 100 m assessment points with or without an insecticide spray both remained under commercial threshold throughout the entire trial.²

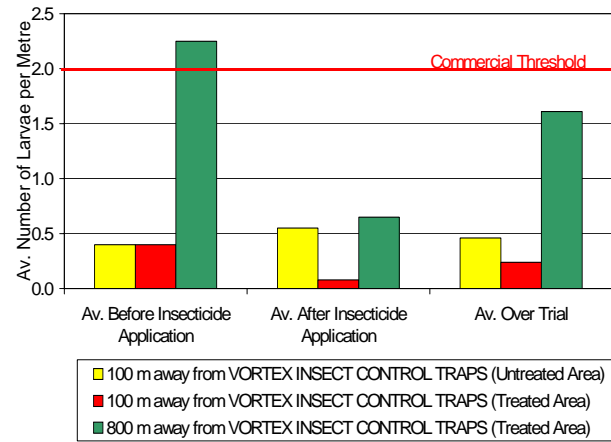


Figure 3. While the Vortex Traps do attract other insects, the impact on the number of beneficial insects present is negligible compared to current commercial management. In the cotton trial conducted in 2002/2003, counts were conducted on all other species present in the cotton. The results show an increase in the number of beneficial insects compared to the central area where no traps were present. Some of this increase can be attributed to the reduction in sprays used on the area under the influence of the traps.³

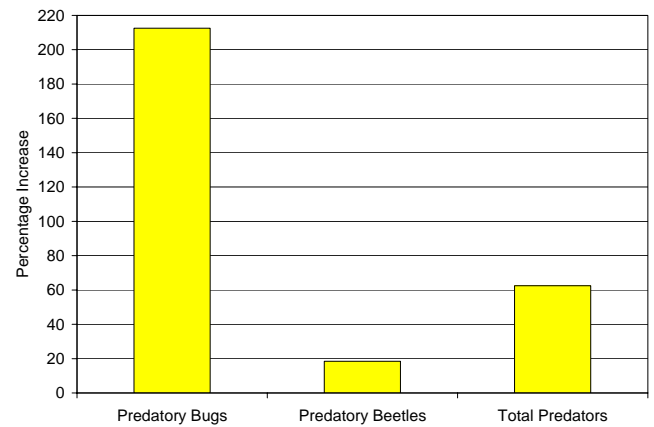
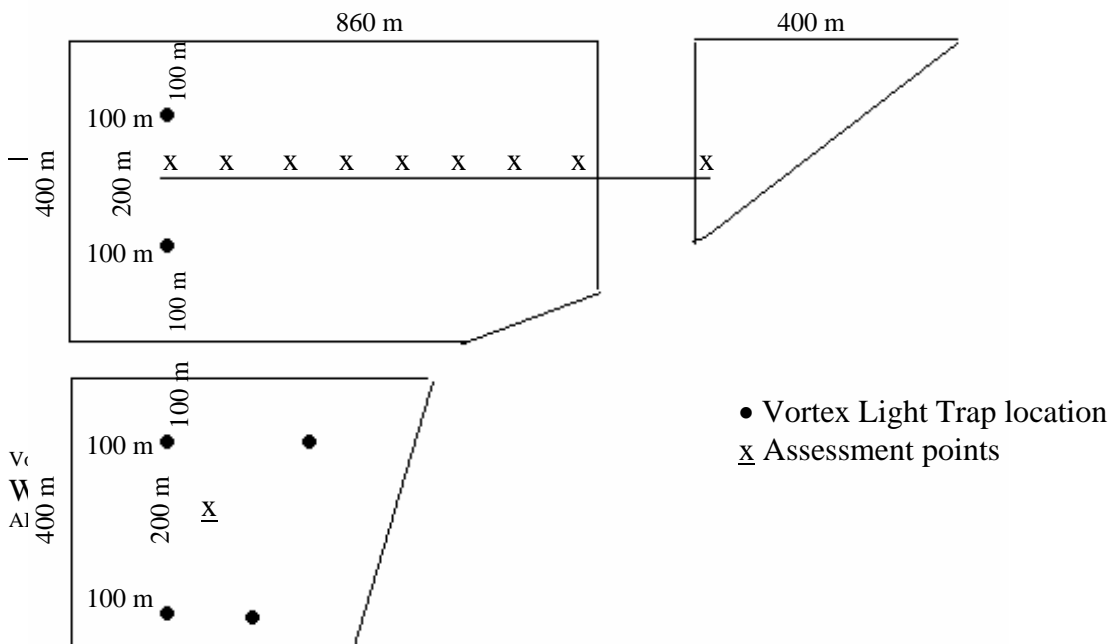


Figure 4. Experimental Design

The trial was laid out as shown in the diagram below:



The light array was laid out as presented in the diagram above and consisted of 4 Vortex Light Traps spaced 100 metres apart and 100 metres in from the edge of the fields. Two additional Vortex light Traps were located in the bottom field to minimise the migratory effect of moths towards the lights in the top field. Nine points spaced approximately 100 metres apart starting from the line of the array were assessed.

CONCLUSIONS

The array of Vortex Light Traps significantly reduced the number of heliothis larvae present for a distance of up to 223.6 metres from any light.

The heliothis population remained at below the economic threshold level of 1 larvae per metre for a distance of 100 metres from any light, for the duration of the trial.

The results indicated that within its effective range, the Vortex Light Traps array provided significant, commercial control of heliothis.