

Report on the first year insecticide trials

A complete report of the first year insecticide trials from the HAL project (VG01028), 'Improving lettuce insect pest management' is available to growers and industry. A full copy of the report can be obtained by request or downloaded from: <http://www.agric.nsw.gov.au/reader/17246>

A Gattton trial during May 2002 assessed the efficacy of Azamax[®] (a neem based product from Organic Crop Protectants), two rates of S1812 (an unregistered chemical from Sumitomo) and Proclaim[®] (from Syngenta) against **heliiothis** and lucerne leaf roller. A best management option (BMO) treatment was also compared. Chemicals used in the BMO treatment included Dipel Forte[®], Success[®] and Avatar[®]. Azamax[®] performed poorly against Heliiothis and Lucerne leaf roller while the BMO was the best performer, although this was not significantly different from the S1812 and Proclaim[®] treatments.

An **aphid** trial in a glass house evaluated Natrasoap[®], Azamax[®] + Eco-oil[®], dimethoate, Bio-oil[®] and Calypso[®]. Results showed that after one day, dimethoate performed the best, followed by Calypso[®]. Results were similar seven and fourteen days after the spraying, but with Calypso[®] performing equally well. On all of the three sampling dates Natrasoap[®], Azamax[®] + Eco-oil[®] and Bio-oil[®] gave no aphid control.

A further three insecticides were evaluated as soil drenches applied prior to planting, targeting aphid and other sap sucking insect control. The trial plots were monitored periodically for insects up to 32 days after planting (DAP). The trial was artificially infested with aphids at 3 and 10 DAP.

A new chemical being trialled from Syngenta, had good results in significantly reducing aphids, thrips and leafhopper numbers. Confidor 200SC[®] also significantly reduced the aphid & thrips population. The effect of MTI446 on insects was not clear, generally it was not significantly different to the control. The effective period of the chemicals could not be established due to low aphid numbers late in the trial. This was a direct result from the large numbers of *Hippodamia variegata* (ladybird beetle) impacting on the trial.



Soil drench trial site

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Evaluating pesticide persistence in hydroponic lettuce

Confidence in the safety and quality of fresh vegetables plays a substantial part in the success of the Australian fresh produce industry. Growers take this issue very seriously. Hydroponic lettuce growers have been alarmed to find levels of pesticide residues in their produce above the MRL. The MRL tests were conducted as part of a quality assurance program. It appears this problem has occurred even when pesticides have been used correctly and all label directions have been followed.

The NSW Department of Agriculture is currently looking at this issue. The project aims to (1) confirm whether or not there is a real problem, (2) to fully explain the issue and (3) to develop management solutions to address or prevent the problem.

Some hydroponic lettuce trials will be conducted at the National Centre for Greenhouse Horticulture, Gosford. This is the first stage of a two year project, partly funded by the lettuce levy. The initial trials are focussing on chemical residues from two commonly used pesticides procymidone (fungicide) and methomyl (insecticide).

For more information, or if you have personally had a similar experience with residues, please contact Jeremy Badgery-Parker, Extension Horticulturist (protected cropping), NSW Agriculture. Tel: (02) 4348 1900. **ALL YOUR INFORMATION WILL BE KEPT TOTALLY CONFIDENTIAL.**

Trial with a difference

Heliothis pressure at the Department of Primary Industries field trials this year was low. To compensate for this the trials included a number of bioassays (testing chemicals using laboratory populations of *Helicoverpa*).

The trials evaluated IPM-friendly products for the control of *Helicoverpa armigera* in southern Victoria. One trial was conducted over the difficult period from hearting to harvest and evaluated the use of insecticides such as Proclaim[®], Prodigy[®] and Sumitomo 1812[®].

Why is this spray trial different from the other trials we've done?

The trial was not dependent on pest pressure. Third instar (medium size) larvae were introduced onto lettuce plants two days before spraying. At the end of the trial, these lettuce plants were harvested and checked for pest presence and pest damage. Additionally, one and four days after the spray was applied, lettuce leaves were taken for bioassay in the laboratory. The purpose of bioassay was to estimate the residual activity of the insecticides on the leaf.

What did we find?

In two days, most of the larvae moved well inside lettuce and were sheltering deep inside. Applied insecticides were not able to make contact with larvae (direct or indirect through leaves). Understandably, the efficacy of the spray is directly related to the protection of the larvae inside the head. In a production situation this means that if growers do not detect insect presence in time, late sprays will not solve the problem.

These trials will help to establish integrated control strategies for *H. armigera* and aid in registration of these products.

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Placing heliothis in the trial

Regional Updates

Victorian Lettuce Season

Pest pressure has been relatively low this season in Victoria. However some lettuce crops had considerable damage from heliothis in March.

In East Gippsland, lettuce quality has been variable due to erratic temperatures and the lack of water, (and possibly from the smoke haze from fires). Thrips have been active and some crops have been affected by Tomato Spotted Wilt Virus (TSWV). Growers on the Mitchell River flats are still on water restrictions, although the summer production season has nearly finished.

In the Melbourne metropolitan growing regions (Cranbourne and Werribee South) the end of the autumn lettuce season is approaching. Some growers have already harvested their last lettuce crops. *H. armigera* have become active (low to moderate) since the end of January till present in Werribee South. In Cranbourne, the active period for *H. armigera* was from mid-February to the end of March. Aphids and thrips (*Thrips tabaci*) have been active since the end of February in lettuce crops in both regions. Some lettuce crops have been severely affected by TSWV in both regions.

Queensland

Silverleaf whitefly has become a problem in lettuce for some Queensland growing districts. The Australian Pesticides & Veterinary Medicines Authority recently approved a permit for Chess Insecticide[®] in head lettuce. Applications for other insecticides have also been submitted to enhance whitefly control. This autumn researchers from the Queensland Department of Primary Industries had trials in lettuce evaluating insecticides for white fly control. Insect pressure is starting to decline due to cooler weather and some rain. Loopers and heliothis are still a problem as is lucerne leaf roller. There is a little TSWV showing in some lettuce crops. Monitoring has shown western flower thrips and tomato thrips about. This could pose a problem if growers are not vigilant.

New South Wales

Harvest is underway at **Hay**. There was some heliothis pressure early April, however presently the pressure is fairly low. Three inches of rain mid April was generally welcomed and has saved some pre watering.

Compared to other years, heliothis pressure has also been moderate in the **Central West of NSW**. A flight of heliothis moths late March resulted with a few crops having some grub damage. There has been some downy mildew & lettuce mosaic virus around the region.

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