Issue No.16

Lettuce Leaf

June 2004

Preparing for lettuce aphid

The arrival of the lettuce aphid *Nasonovia ribis-nigri* in Tasmania has prompted a nationwide action to prepare the Australian lettuce industry for a further spread of this serious pest.
In response to that a national survey plan has been implemented by all states. Plant Standards Branch of Department of Primary Industries was responsible for coordinating and carrying out aphid surveys in Victoria. All lettuce growing regions in Victoria were surveyed to a protocol in the first half of April, followed up with sticky traps monitoring. In the second half of May PSB officers installed Lettuce Aphid Pan (Water) traps in all lettuce growing areas. Traps are being monitored on a weekly basis. The next step will be a spring survey of aphids primary hosts (currants, gooseberries).

PSB officer Adrian Rakimov installing aphid traps

PSB is also developing a Lettuce Aphid contingency plan, with industry, in order to deal with a future detection of the aphid in Victoria. This plan will document the first actions that will occur if an LA detection is made. Industry input into the plan will hopefully see an accepted standardised approach if the situation arises in the future.
If lettuce aphid is confirmed in a district, interim control measures will be implemented (in consultation with industry) in order to maintain market access for unaffected regions within the state.

For more information contact Gary Darcy
gary.darcy@dpi.vic.gov.au
Plant Standards DPI Tel: (03) 9210 9392

History of Nasanovia resistance

Nr-resistance was found in Lactuca virosa (refer photo) by the Institute for Plant Breeding in the Netherlands in 1978. Crosses were made with cultivated lettuce varieties and these were released to private breeding companies. The private breeding companies found that the resistance was strongly linked to negative characteristics so that it was virtually impossible to make resistant varieties with suitable characteristics for commercial growers. Rijk Zwaan was the first company to eliminate this linkage with undesirable characteristics after 17 years of research.

Rijk Zwaan was granted a patent in Australia in March 2001 and the New Zealand patent was granted in October 2000. Rijk Zwaan has been selling Nasonovia resistant varieties in Europe since 1997. Every year the sales of resistant varieties increases as more and more resistant varieties become available and produce buyers indicate their preference for resistant varieties over chemical solutions.

Wild Lettuce- *Lactuca Virosa* a source for *Nasanovia ribisnigri* resistance

How does the resistance work?
The first fact to mention about the resistance is that it was transferred by conventional breeding techniques. The resistance is based on the inability of lettuce aphids to feed on resistant plants. If the aphids don't move from the resistant plants they will simply starve. The resistance has no effect on taste of the lettuce.

For more information contact Arie Baelde
Rijk Zwaan Tel: (03) 5348 9000

Lettuce Ute Guides Due to a printers error some of the distributed Lettuce Field Identification guides have pages missing or some pages with double printing. If your are unfortunate and own such a copy, please return it to Andrew Creek or your vegetable Industry Development Officer for replacement.

NSW Agriculture

State Government Victoria Department of Primary Industries

Horticulture Australia

NPV through sprinklers

DPI Victoria carried out trials for the second year on application of Nuclear Polyhedrosis Virus through overhead sprinklers for control of *Helicoverpa* spp. The trial also looked at the changes in effectives of NPV over time after application.

NPV was applied three times at 750 mL/ha.
The residual effectiveness of the NPV applications was measured by feeding samples of the treated crop to laboratory reared *H. armigera* larvae in a series of bioassays. Leaf samples for the bioassays were taken 1 day, 4 days and 6 days after NPV was applied.
The bioassays showed consistent patterns in mortality after each application, with a decline in larval deaths occurring with increasing time after the NPV application. On average larvae died 7 days after feeding and mortality was 72% for 1 day after spraying, 55% for 4 days after spraying and 45% for 6 days after spraying. These results confirm that NPV loses effectiveness after application due to degradation of the NPV in the presence of the ultraviolet light but there is still some degree of effectiveness.

Our results showed that NPV was successful in controlling *Helicoverpa armigera* larvae when applied through overhead irrigation sprinklers. However NPV must be applied at the end of irrigation to prevent it being washed off or applied as a specific application separate from irrigation. The most important factor when applying NPV through the sprinklers is a correct calibration. It is strongly advised to calibrate your irrigation system using industrial dye if you intend to use this application method.

For more information contact Slobodan Vujovic
DPI Knoxfield Tel: (03) 9210 9222

Hay news

Things have cooled off at Hay with some heavy frosts in the last month. Heliothis pressure is low, with only a few moths being caught in pheromone traps. The numbers of Western Flower Thrips recorded in yellow sticky traps has reduced to an average of 1 or 2 per week. Much less than the autumn trappings.

A visit of Paul Horne & Jessica Page from IPM Technologies was highly regarded by growers in attendance. Everyone came away with a better understanding of the "integrated " in IPM.

Daryl Gibbs, a local agricultural consultant is now regularly monitoring some grower's properties. IPM Technologies is continuing to assist by reviewing monitoring data and discussing required actions.

Soil drenches for aphid control also kills beneficial insects

In late spring 2003, NSW Agriculture evaluated unregistered insecticides from Syngenta, Sumitomo and Bayer. The insecticides were applied as a banded soil drench prior to transplanting. This was the second year of such trials and they indicated greater efficacy in a lighter soil type.

These trials significantly showed:

- All insecticides equally controlled aphids.
- The chemicals killed leaf hoppers, rutherglen bugs, mirrids and vegetable weevils for up to 6 weeks.
- Confidor® 200SC was the most active chemical.
- All 3 chemicals indirectly killed beneficial insects.
- Thrips populations were not significantly reduced, however it appeared they were effected.

In the later half of the trial, dead ladybird beetles, lacewings, nabids and carabids were common in the chemical treated plots. This is presumably because they were feeding on the less mobile, poisoned insects.

For more information contact Andrew Creek
NSW DPI Tel: (02) 6951 2653

Jessica Page and Sav Mirabelli visually check lettuce for insects.

For further information contact: Andrew Creek, NSW Agriculture, Ph (02) 6951 2653, Fax (02) 6951 2692
or - Slobodan Vujovic, DPI Knoxfield, Ph (03) 9210 9222, Fax (03) 9800 3521
www.agric.nsw.gov.au/reader/veg-lettuce or www.nre.vic.gov.au/agvic/ihd/projects/lettuce.htm