

NSW VEGETABLE IPM NEWSLETTER

Integrated Pest Management for Insects and Viruses in Sydney Vegetables



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Your Levy at Work

July 2006

Seasonal Virus & Vector Surveys

Stacey Azzopardi

The winter crop surveys have revealed many green peach aphids, but not so much virus. Crops included in the survey for viruses, and insects that spread them, were broccoli, cabbage, Chinese cabbage, daikon radish, silverbeet, lettuce and broad beans. 13 crops were surveyed through the Camden district and the Hawkesbury, four times from planting date till before harvest. While aphids were present in greater numbers early in the crop, no virus incidence was recorded. Adjacent plantings of brassicas on these farms had Turnip mosaic virus present, and other physiological disorders such as tip burn.

Surveys for spring and summer crops will begin in September. Growers are encouraged to participate, so they can take advantage of the early diagnosis of viruses and monitoring for pests.



Paul Horne demonstrates monitoring as the trainee consultants learn about foxglove aphid and currant-lettuce aphid

IPM consultants, at your service

Stacey Azzopardi

Sydney vegetable growers are now in the best possible position for adopting IPM with so many trained consultants now available. Thirteen consultants have taken part in an IPM training workshop co-ordinated by the NSW vegetable IPM Project on April 6-7th 2006.

Visiting from Victoria, Paul Horne of IPM Technologies P/L led the practical exercises, with visits to both greenhouse and field production. As a successful IPM consultant himself, the NSW trainees took on Dr Horne's ideas and suggestions for their own clients. The technical side of IPM was demonstrated by Stephen Goodwin and Marilyn Steiner, with Len Tesoriero offering disease recognition information to the group.

The consultants have now been in discussion with their clients to begin their IPM programs. For those already offering IPM services, they have enjoyed the increased interest in IPM and the networks being developed between companies and private consultants.

Chemical Permits Update

Stacey Azzopardi

A meeting was called by Peter Dal Santo of Ag Aware Consulting and Alison Anderson, NSW Vegetable IDO on the 18th-19th May to discuss the permit situation with NSW vegetables. The lack of IPM compatible chemical options, for both insect pests and diseases was a high priority during the discussions.

NSW growers of lettuce (field and hydroponic), greenhouse cucumbers and tomatoes, Asian leafy brassicas, sweet corn, snow peas, shallots, rhubarb, pumpkins and bitter melon participated in the meeting, listing their key pests and diseases.

It is anticipated that the feedback provided by growers and industry will improve the range of chemical options, from a number of resistance groups, being permitted or registered for our vegetables. Similar meetings were held with the Industry Development Officers around the country as part of the HAL initiative.

Permits and registrations should soon be available to fill in the 'gaps' in chemical control and complement IPM programs on our vegetable farms.

Hydroponic Lettuce: Pest and Disease Management

Hydroponic Lettuce conference speakers covered a diverse range of pest and disease management issues at the Sebel Resort in the Hawkesbury on 21st June. Stacey Azzopardi opened the day with pest and disease recognition, a key for successful monitoring in an IPM program. Chaired by horticulturist Jeremy Badgery-Parker, 70 growers and industry representatives learnt about research results and improvement management techniques, all centred round minimising losses to pest and diseases.

Leigh Pilkington, NSW DPI and growers Joe Camilleri, Andrew Zahra, Joe D'Anastasi with conference participants (Photo courtesy of Alison Anderson)



Growers agreed on the key pest as western flower thrips (WFT) and most devastating disease Tomato spotted wilt virus (TSWV) on their crops. It is in the management of this pest and disease complex where issues such as pesticide residues, insecticide resistance and the lack of pesticide permits and registrations all stem from.

While questions directed to speakers ranged from disinfection options for recirculating nutrient solution to residue testing for local, interstate and imported vegetables, then the message of IPM was loud and clear. The future of hydroponic lettuce production lies in the success (no pun intended) of WFT and TSWV management. Combining a resistance management program and monitoring into your pest management program is your best chance of achieving this.

Contact Jeremy Badgery-Parker on 4348 1900 or Alison Anderson 9746 1865 for conference proceedings and lettuce pest and disease posters.



Len Tesoriero, with grower Ray Manacaro, Sandra McDougall and Leigh James, NSW DPI

(Photo courtesy of Mike Lamond)

Greenhouse IPM Meetings: 'Before' and 'After'

June has been a big month for IPM in Sydney greenhouses. Two successful information days were held for those growers interested in greenhouse IPM. The meetings were focussed on 'before' and 'after' images of IPM farms.



Len Tesoriero deals the new Pest Sense card game to Moustafa Osman, Stacey Azzopardi and Joe Boustani (Photo courtesy of Alison Anderson)

The Boustani farm in Rossmore is owned by the President of the NSW Greenhouse Grower's Association, Joe El-Boustani.

Joe had seen the success following the first farm walk at the Osman's greenhouse IPM demonstration farm in May last year. After learning about IPM from consultants, other growers and NSW DPI, Joe made the commitment to adopt IPM earlier this year.

Joe marked the occasion by offering his farm to other greenhouse growers for a welcoming BBQ and a 'before' IPM meeting on the 8th June.

Growers and industry representatives at the Boustani 'Before' IPM Farm Meeting



Of the hundred or so visitors to Joe's farm, most were there to hear about biological control options for fungus gnats – small black flies with white larvae that damage the roots of cucumber plants, particularly now, during Winter.

They also heard about other soft options for controlling key greenhouse pests including whitefly, thrips, mites and aphids.

The most important message from Joe and the IPM project officer, Stacey Azzopardi was the need to improve hygiene in and around the greenhouse and to start a monitoring program, with the help of a trained consultant.

A fortnight later, and another hundred growers around the barbeque, the Osman family, together with T&W Greenhouse Supplies hosted the 'after' IPM Meeting.



Stacey Azzopardi, NSW DPI with Tony Hatem of T&W Greenhouse Supplies, Joe El-Boustani and Moustafa Osman at the Osman 'After' IPM Farm Meeting

It was a great opportunity for the trained consultants that have been working closely with Stacey and the IPM project team to meet the growers and answer many questions associated with implementing IPM in the greenhouse.

Growers and industry representatives agreed that the best speaker on the day was the owner of the farm. Moustafa Osman gave his experience of his first year using IPM, and how he has used weekly pest monitoring, sticky traps and beneficial bugs to complement soft insecticide sprays on the cucumbers.

Alison Anderson and NSW mid-north coast grower Kim Vincent (Image courtesy of Mike Lamond)



The next phase of the vegetable IPM project is a close liaison with Sydney IPM consultants, and local group meetings for those growers starting their IPM program. The first group meeting for the Picton-Tahmoor growers was held on the 27th April with both growers and consultants.



The Osman family and friends, with Nicholas Srou of T&W Greenhouse, Mohamed Etri and Joe El-Boustani

Other Sydney growers are encouraged to join their local IPM groups and can contact Stacey Azzopardi on 0437 977 263 for more information.

Hydroponic Farmers Federation

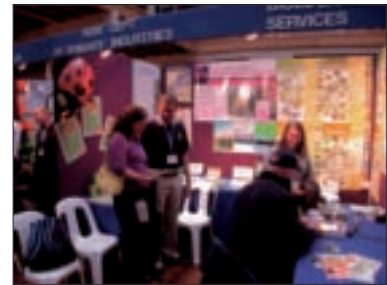
Stephen Goodwin

The Victorian Hydroponic Farmers Federation (HFF) has just completed its 7th Biennial Conference and Trade Exhibition in Geelong on 25 – 27 June 2006.

HFF President Sue Korevaar said that in the two years since the previous conference, she had seen a major change occurring in the hydroponic industry. There had been a gradual shift from

smaller key-man operations to large, high tech systems involving hectares of greenhouse rather than square metres.

Hydroponic tomato growers Anne Wilson and Sonja Peel, Bellarine Hydroponics with Tony Wellham, NSW DPI (left) and



looking at a biocontrol agent with Dr Leigh Pilkington, NSW DPI (right). (Photo courtesy of Stephen Goodwin)

Almost every state in the country has a large-scale hydroponic operation, combining growing and packing facilities mainly dealing in tomatoes, but she foresaw that this trend will expand with significant investment into modern technology for capsicums, cucumbers and other hydroponic crops in the not too distant future.

For this reason, the 2006 HFF Conference concentrated on 'diverse growing' opportunities for existing growers to expand into or develop areas not yet saturated by the bigger operations or by overseas companies that are now looking to import hydroponic produce into Australia.

The program included topics on heating, nutrition, irrigation strategies, hydroponic health and safety, improvements to energy efficiency, marketing and biologically-based IPM.

A trade exhibition gave growers an opportunity to see the latest greenhouse and hydroponic technology and systems. The standard of this was evidenced by the success of HortWorks, a collaboration of companies providing consultant, irrigation, greenhouse, heating and other technical services, products and advice, as the exhibit judged the best at the Conference. NSW DPI was also represented in the trade exhibition with extension publications and technical posters such as the recently published series on pests and diseases of tomatoes, cucumbers and lettuce. DPI also provided growers attending the conference with technical advice and demonstrations on biologically-based IPM in collaboration with the biocontrol company Biological Services, based at Loxton, SA.

Marilyn Steiner and Stephen Goodwin's talk at the conference brought participants and particularly growers up to date on research into protected cropping IPM being conducted by DPI at the Gosford National Centre for Greenhouse Horticulture.

Lettuce Aphids, or are they?

Leigh James, District Horticulturist (Field Vegetable Crops), NSW DPI



Winged lettuce aphid (left) and wingless foxglove aphid (right) (Photos courtesy of Marilyn Steiner)

Just because a Lettuce Aphid or Nas resistant variety is being grown, it doesn't mean that it is immune from aphid colonisation or attack.

When aphids that looked like lettuce aphids were found inside the heads of a Nas resistant crisphead variety in a field lettuce crop in the Sydney basin, they were immediately sent for identification. The aphids were found to be foxglove aphids.

While lettuce aphid is regarded as a more important pest of lettuce, foxglove aphid has the potential to also become a serious contamination pest of head lettuce types as seen in the US over recent years.

Sydney growers are asked to forward their aphids for identification through your district horticulturist. The aphids are difficult to distinguish in the field, but under the microscope can be easily identified.

Although the foxglove aphid has been identified a number of times in the past by NSW DPI during regular monitoring, heavy infestations have previously been confirmed in the Sydney basin.

Foxglove aphid has the potential to become a serious pest problem because;

- Like lettuce aphid, it can feed and breed quickly to large numbers unobserved inside lettuce heads, including in Nas resistant varieties.
- Like lettuce aphid, unless it is observed via regular crop scouting or monitoring early and treated with an aphid insecticide before head formation it is impossible to eradicate it from the head with foliar aphicides. Conserving natural predators and parasitoids is encouraged.
- Foxglove aphid feeds on a greater range of crops than lettuce aphid including; potatoes, leafy vegetables such as lettuce and spinach, ornamentals, cucurbits,

beans, celery, tomatoes, eggplants, capsicums and citrus.

- A host on common weeds in the Sydney basin including shepherd's purse, amaranth, nightshade, sow thistle, dandelion, pigweed and fat hen.
- It can spread many viruses including Cucumber mosaic virus which can infect many different plants, plus potato viruses and zucchini viruses.
- There are no foxglove aphid resistant lettuce varieties.

Contact Leigh James at the Hawkesbury Advisory Office on 02 4588 2100.

TSWV - WFT research update

Marilyn Steiner and Debbie Kent

Major crop losses in both field and protected lettuce due to TSWV are occurring in the Sydney Basin, yet grower response is focused almost entirely on application of pesticides to control thrips, often on a weekly and sometimes a daily basis. No wonder WFT is rapidly becoming resistant to the few effective chemicals. All the thrips and virus seem to be coming from 'the bloke next door'.

Speaking at the hydroponic lettuce field day, Marilyn Steiner emphasized that the greatest risk to crops was within-crop populations of thrips and infected plants, and particularly leaving the latter in situ to breed more carrier thrips. Any plants with symptoms need to be bagged immediately and removed from the site.

In a recent research trial, thrips populations on the plants were shown to be more attracted to green than red cultivars, and to be substantially reduced by aluminium coloured foil over the channels, which repels adult thrips. In other trials conducted at Joe D'Anastasi's farm at Glenorie, two foliar anti-transpirant products applied to inhibit virus transmission were not very effective, but simply spraying water and removing plants with TSWV symptoms halved the infection-rate!



Further trials are planned for next season to test some other new approaches against this problem.

Debbie Kent assessing trial results (Photo courtesy of Marilyn Steiner)