

NSW VEGETABLE IPM NEWSLETTER

Integrated Pest Management for Insects and Viruses in Sydney Vegetables



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Your Levy at Work

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In this issue

- Autumn/Winter Pest Issues
- Zucchini Virus Trial Results
- IPM Accreditation and Training
- How to Protect Your Natural Enemies and Encourage Them
- Sydney Basin Growers Meeting
- AHGA Conference
- Pest, Beneficials, Diseases and Disorders: Field Identification Guides

Autumn/Winter Pest Issues

Sylvia Jelinek

The autumn months brought some much needed rain to the Sydney Basin. Conversations with growers and consultants along with brief field surveying found that in most cases western flower thrips (WFT) presence and tomato spotted wilt virus (TSWV) incidence were low for the mild months of autumn in comparison to previous years. High numbers of winged aphids (mainly green peach aphid) were recorded later in the season on cabbages, cauliflower and late season zucchinis.

Fortnightly plantings of susceptible varieties planted in Sydney that have been monitored on a weekly basis have not shown any current lettuce aphid (CLA) since spring, 2008. Monitoring will continue throughout the year, with more in-depth observations in the coming spring. It seems to be a mystery as to where CLA have disappeared to in the Sydney Basin. Similar plantings in WA have also not hosted any CLA although it has been found in some plantings in Victoria.

Samples of lettuce downy mildew collected in the Oakdale area have shown resistance to the chemical metalaxyl (Ridomil®); further testing is underway to see how far reaching the resistance is within the Sydney lettuce growing areas.

If you suspect that the applications of pesticides that you are applying to your crop are failing to suppress disease, the pathogen present on your

farm may have chemical resistance. Currently a resistance testing project funded by HAL and AusVeg being undertaken across Australia, assessing Sclerotinia, Botrytis, white blister, downy mildew and bacterial pathogens for resistance to pesticides. If you are encountering spray failure you should have the pathogens tested to ensure you aren't wasting money applying chemicals which may not work as well as they normally do. For further information on where and how to send samples please contact Dr Leanne Forsyth (NSW DPI) on 02 4640 6428 or leanne.forsyth@dpi.nsw.gov.au

IPM Accreditation and Training

The Australasian Biological Control Association Inc./Sylvia Jelinek

The Australian Biological Control Association Incorporated (ABC) is currently implementing an Advanced IPM accreditation scheme. Crop consultants gain accreditation and are then able to nominate specific growers for grower accreditation.

Image courtesy of Australasian Biological Control Association Inc.



Accreditation enables the grower to use this Trade Marked IPM logo on their product

To gain accreditation the consultants are assessed by a panel of experienced IPM practitioners who are members of the ABC. Applicants must meet a set of criteria that demonstrates that they:

- Have a clear understanding of the role of beneficial organisms in the crop that he/she works.
- Use cultural controls to enhance the activity of beneficial organisms or to reduce pressure from pests.
- Conduct on-farm routine monitoring of pests and beneficial organisms specific to the crop grown.
- Can demonstrate a genuine reduction of standard farm practices or norms in the use of synthetic insecticides.
- That the frequency of pesticides applied and the types of materials selected is appropriate for an IPM program (for the specific crop).
- Consideration is given to biological control as a component of the overall pest management strategy.
- Have a means of maintaining and enhancing current and advanced knowledge of IPM principles and practices.
- An accredited consultant can then nominate growers who fit the grower requirements.

Accreditation enables the grower to use the Trademarked IPM logo on their product. This logo is a measure of a high level of commitment to IPM recognising the need to reduce chemical inputs and minimise environmental and human health impacts.

For further information refer to the Goodbugs website www.goodbugs.org.au or contact you IPM Project Officer Sylvia Jelinek on 02 4588 2135.

Zucchini Virus Trial Results

Sylvia Jelinek

As part of the Vegetable IPM project in managing viruses and vectors in zucchini crops in the Sydney Basin, the project officer and plant health research unit worked with the plant pathology diagnostic lab at EMAI to identify the viruses found. Papaya ringspot virus was found to be a little more widespread which by the end of the season, has been a common find. All three zucchini viruses (ZYMV, PRSV, WMV2) were found on farms at various locations around the Sydney Basin. Zucchini virus was present in high numbers at farms that continued to use the industry standard Congo (non tolerant variety) and by having successive plantings. Incidence of zucchini viruses occurring were reduced if there was a break in plantings or if tolerant varieties

were used. There is also a greenhouse (lab based) trial currently being conducted and should be concluded shortly. This trial includes inoculating common weeds and plants (crop) that are usually within the vicinity of zucchini farms to establish whether those plants and weeds host any of the zucchini viruses with or without symptoms in an attempt to draw some valuable data to prove to growers that weed eradication, end of crop clean up and basic farm hygiene are vital in lowering virus incidence on farm.

Image courtesy of Leanne Forsyth



Len Tesoriero NSW DPI, Denis Persley QDPI & Brendan Rodoni Vic DPI inspecting & surveying a zucchini crop for viruses and diseases

In late April, Len Tesoriero, Leanne Forsyth and Sylvia Jelinek (NSW DPI) along with interstate visitors Denis Persley, Cherie Gambley (QDPI) and Brendon Rodoni (Vic DPI) went on a four day viral survey of Sydney field vegetable farms collecting samples and assessing the levels of viruses in different regions of the basin.

AHGA Conference

Sylvia Jelinek

The 2009 National Conference of the Australian Hydroponics and Greenhouse Industry was held at Sydney Showground from 19–22 July 2009 carrying the theme of 'Futurefresh – Modernising Australian Farming'. The large, fully integrated trade exhibition provided a unique opportunity for businesses associated with commercial hydroponic and greenhouse crop production to showcase their products. The key activity for Sydney growers were workshops highlighting pesticide residues and food safety; business

planning; and getting the best out of your technology.

Image courtesy of Sylvia Jelinek



Jodie Cooper NSW DPI, Dr Barbara Hall SARDI & Dr Leanne Forsyth NSW DPI demonstrate good farm hygiene practices on the farm tour at Flora International during the AHGA Conference

The most exciting part of the AHGA Conference was the organised farm tours which included a guided tour of NSW DPI's Elizabeth Macarthur Agricultural Institute, closely followed by an expedition to a greenhouse cut flower farm that practices IPM, where farm hygiene was demonstrated by all attendees wearing disposable lab coats, overshoe booties and latex gloves whilst visiting the facility – a practice that has been demonstrated to successfully lower incidence of several diseases and some insect and mite pests. This was concluded by a visit to a large Sydney Basin Cucumber/Tomato greenhouse farm, where delegates and local growers interacted over a traditional Lebanese feast.

How to Protect Your Natural Enemies and Encourage Them

Sylvia Jelinek

In the quest to becoming an IPM grower in an open field cropping system, protecting and encouraging natural predators is an important objective. Although there are many levels of IPM adoption a grower can implement.

A way to encourage natural predators to become a part of the farm ecosystem is to observe good farm hygiene practices; the initial stage would include:

- End of crop clean up
- Off farm waste disposal
- Weed eradication
- Cease using broad spectrum chemicals
- Planting resistant or tolerant varieties

To take things a little further would be to engage in ecosystem servicing, which is a form of conservation biological control or habitat

management. Things that need to be considered include:

- Knowing your insect pests
- Recognising your beneficial insects
- Understanding what crops and weeds host insects of interest
- Understanding the relationship between insect pest and beneficial insects
- Being mindful of the effects fungicides and insecticides have on beneficial insects
- Knowing how to time a pesticide spray application if and when it is needed

The final level of IPM growing would be to apply all of the previous steps as well as introducing and protecting commercially produced biological controls, such as predatory mites or parasitic wasps.

On a large scale farm it is advised that an IPM consult be employed to monitor weekly through the crops and also by using insect trapping systems. A trained (accredited) IPM consultant can provide recommendations on how to consider the farm in a pest and disease perspective.

Natural enemies, also known as beneficial insects and biological control agents, can clean up a pest problem if they are given the chance. Protecting naturally occurring beneficial insects is as easy as understanding what pesticides may be toxic to their survival (or different life stages of the beneficial), so avoiding broad spectrum chemical applications is a start and using target specific or new generation insecticides if the need arises would be a better choice. Beneficial insects are also commercially produced and available for purchase throughout Australia for many common vegetable pests.

Some IPM compatible options include paraffinic oils, petroleum oils, pesticides soaps (potassium salts of fatty acids) such as Natrasoap[®] and botanical oils like Eco-Oil[®]. There are many biological spray options that are a great alternative to heavy residual chemicals, such as; DiPel[®] *Bacillus thuringiensis* Vivus[®] or Gemstar[®] Nuclear Polyhedrosis Virus of *H. armigera* for caterpillars, and VectoBac[®] WG Biological Larvicide *Bacillus thuringiensis* subsp. *israelensis* for the control of fungus gnats. Always observe the label directions before use and be aware of what crop and pest the spray is registered and permitted for.

Horticultural consultants and IPM consultants provide suggestions and advice along with monitoring results. Ultimately the grower is responsible for final decisions and actions regarding recommendations of pesticide use and

their application. For a list of IPM consultants in your area please contact Sylvia Jelinek (NSW DPI) 02 4588 2135.

Sydney Basin Growers Meeting

Sylvia Jelinek

On Tuesday 23rd of June, Over 60 growers and consultants from the Sydney Basin and the Central Coast came together at Penrith Panthers to listen to important current issues.

Image courtesy of Sylvia Jelinek



Jozef Wolters Lefroy Valley, Len Tesoriero NSW DPI, with Greenhouse growers' Joe El Boustani & Tony Hatem at the Sydney Basin Growers Meeting

Stephen Goodwin, *Biocontrol Solutions*, spoke about the future of the greenhouse industry in the Sydney Basin; Matthew Plunkett and Peter Malcolm, *NSW DPI*, introduced and briefly ran through the nutrient and water smart farms project that is now underway in the Sydney Basin; Jeremy Badgery-Parker, *NSW DPI*, discussed how improving greenhouse profits through disease prevention and better farm management was a realistic possibility to all greenhouse growers; and Rick Donnan, *Growool Horticultural Systems*, promoted the AHGA conference at Sydney Olympic park in July and the benefits a delegate would gain from attending.

Image courtesy Leanne Forsyth



Alison Anderson (Veg IDO) & Sylvia Jelinek NSW DPI at the Sydney Basin Growers Meeting

Alison Anderson Veg IDO presented an update on the vegetable industry

development program and was farewelled as the NSW Vegetable Industry Development Officer, and thanked for all her hard work and support to the vegetable industry in her many years of duty.

Cucurbit Field Identification Guide

Sylvia Jelinek

The "Pest, Beneficials, Diseases and Disorders in Cucurbits: Field Identification Guide" has been printed and was launched at the recent Australian Vegetable Industry Conference in Melbourne. Copies are being sent to all levy paying cucurbit growers around the country and will be available for purchase at \$28.00 for all non-levy payers. Initial responses have been very positive. This publication is a must for any cucurbit grower, also invaluable to agronomists and consultants.

Just a reminder that the 'Pests, Beneficials, Diseases and Disorders in Greenhouse Vegetables: Field Identification Guide' first edition is now available at a reduced price of **\$18**. This publication is a must for any greenhouse vegetable grower, but can also be a very useful guide to most vegetable farmers.

Both of these guides are available through the NSW DPI bookshop on 1800 028 374 or email: bookshop@dpi.nsw.gov.au

Further Information

www.dpi.nsw.gov.au for pest and disease management information

www.apvma.gov.au for chemical permits and registrations

www.dpi.qld.gov.au/infopest to subscribe to the Infopest AGVET DVD

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