

# 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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### Spring/Summer Issues

Sylvia Jelinek

The spring saw early onset of virus symptoms in zucchini, with a high incidence of virus infection in varieties with little to no virus tolerance in the summer months. By January all three zucchini viruses (PRSV, ZYMV and WMV2) were present in the Sydney Basin, leaving some growers with no option but to abandon their crop or move swiftly into planting a more virus tolerant variety sooner than previous years.

Image courtesy of Stacey Azzopardi



**Zucchini fruit exhibiting the extreme form of zucchini mosaic virus symptoms**

There is an increasing occurrence of a fungal disease primarily found in silverbeet seedlings called *Aphanomyces*. This pathogen is known to affect silverbeet and beetroot. The symptoms are root rot, blackening of the lower stems and damping off. Seedlings perish rapidly and in extreme cases death of entire seedling trays.

*Aphanomyces* is spread with water and there are currently no registered chemical controls. Enquiries are underway in obtaining a pesticide permit to manage this problem.

Many field eggplant growers within the Sydney Basin also suffered damage or loss of plants due to a wilt disease caused by a fungus known as *Verticillium*. A means to avoid this disease is to rotate the growing beds from season to season. The fungus can survive in the soil for 2-3 years and there are no chemicals registered for its control.

### IPM Benchmark Survey

Sylvia Jelinek

Firstly, I would like to extend a big thank you to the growers that participated in this survey, whether it was face to face or by telephone. The details of growers are strictly confidential and will not be published or disclosed to any other parties.

The IPM benchmark survey was undertaken to determine the level of IPM the vegetable growers within the Sydney Basin had adopted. Several surveys were conducted at the commencement and throughout this project. As we are now nearing the end of the Vegetable IPM project, it was decided to assess the current level of IPM adoption in the Sydney Basin by using the same IPM benchmark survey. This is also a yard stick in measuring the basic success of the Vegetable IPM project.

The results were not a surprise to those conducting the large scale survey.

The survey results demonstrate that vegetable growers more successfully adopt IPM practices when they use a trained IPM consultant.

The adoption of IPM practices has increased during the course of the vegetable IPM project from 2004-8. Those using a consultant significantly improved their level of IPM adoption, while other growers made improvements in specific areas, such as variety selection and general crop management.

## WFT Spray Strategy Schedule

Sylvia Jelinek & Grant Herron

Very little has changed since 2007 in regards to insecticide options available for controlling western flower thrips (WFT) outbreaks. Over-dependence on spinosad (Success<sup>®</sup>) can and will lead to WFT resistance and total chemical failure making this a significant concern for growers. Without spinosad, pesticide options for managing WFT are limited or in the case of some crops, non-existent. Although it would be nice to have a silver bullet solution to the problem and have a suite of chemical options available for the control of WFT in vegetable crops, the research and registration process can seem slow. Several new products are being investigated and it is hoped that there will be a break through in the near future.

**ONLY USE SPINOSAD  
AFTER REGULAR  
MONITORING & RECORD  
TAKING SHOWS YOU REALLY  
NEED IT!!!**

**Keeping in mind the three  
spray strategy schedule**

### ➤ **Spraying**

Adult and larval stages of WFT can be effectively killed by insecticides, but the eggs (laid inside leaf tissue) and pupae (mostly in soil) are protected from sprays (see the diagram of the life cycle of WFT). For this reason three sprays are recommended to cover the time taken for eggs to hatch into larvae and for pupae to develop into adults.

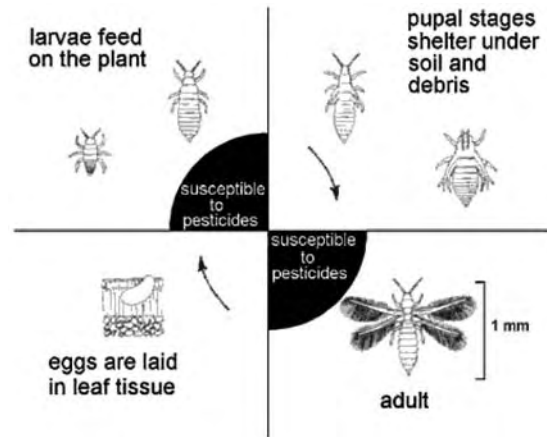
➤ **A series of three sprays of the same chemical several days apart will be effective for killing the majority of thrips.**

The interval between applications varies with temperature. In cooler areas or at cooler times of the year (10°C–20°C) the length of the lifecycle is 25–35 days. At 20°C–30°C the life cycle is 15–25 days. Therefore, the higher the temperature, the shorter the interval between sprays (3-6 day range); however you must follow the product label directions for the minimum interval between successive applications.

➤ **An important note on applying consecutive sprays and chemical resistance.**

To reduce the chance of WFT becoming resistant, apply three consecutive sprays of the same chemical and then alternate to a different chemical group for the next series of sprays. There must be at least a three week break

(<20°C) or a two week break (>20°C) before another series of sprays is applied. If monitoring indicates the need to spray earlier, then insecticide resistance, inappropriate spray application or inadequate farm hygiene should be suspected, and expert advice sought.



➤ You should continue to monitor numbers of WFT so you know when to apply another series of sprays. If WFT are building up on sticky traps or you see many WFT on your plants or fresh damage is visible then consider spraying again.

➤ However, if the same insecticide is always used to control WFT, the thrips will become resistant and the chemical will no longer be effective.

## How well do you know your own farm?

Sylvia Jelinek

So.....How well do you know your own farm?

- Do you monitor your crops for pest and diseases?
- Do you remove as many broadleaf weeds as possible throughout the growing season?
- Do you know what pests, diseases, plant disorders and beneficial insects occur on your crops?

If you answered **NO** to one of these questions, you probably don't know your farm as well as you thought. Everything that is situated on a farm, whether it be the irrigation, soil type, crops, insects and plant pathogens; they're all part the farming environment.

➤ Crop monitoring is essential in decision making in regards to the timing of a spray application for pest and disease control or beneficial insect release for the pest in question. Monitoring the crop gives you a more accurate picture of what is happening in the cropping environment, this ensures unnecessary spray applications (calendar spraying). Only spray when it is necessary.

Image courtesy of Stacey Azzopardi



**Greenhouse farming mixed with hydroponic lettuce and rural boundaries**

➤ Reducing broadleaf weeds throughout crops, end rows and farm boundaries prior to planting and during the cropping season ensures there is low virus incidence; as most weeds harbour insect pests, including thrips and aphids that transmit diseases. Broadleaf weeds are also known to act as a plant virus reservoir, in which creates a green bridge for pests and diseases to contaminate newly planted crops much faster than on a weed free farm.

Image Courtesy of Stacey Azzopardi



**Andy Ryland BBC & Sylvia Jelinek NSW DPI inspecting insects vacuumed from a crop**

➤ The ability to recognise and clearly identify pests, diseases, plant disorders and beneficial insects that occur on vegetable crops is essential in decision making, especially in treatment selection for the pest or disease in question, as there are many factors to consider;

1. That the correct treatment is selected and not misdiagnosed.
2. Reducing the incidence of pesticide resistance.
3. That any treatments or spray application administered to the crop is at the right time and doesn't disturb beneficial insect activity.

4. Cost, if the incorrect treatment is applied, it has been all for nothing and can be as beneficial as burning money.

As the summer months have passed, has it been a hard task to identify insects and plant diseases within your crops through the busy growing period? It may be a great time to recruit an IPM consultant to monitor your vegetable crops weekly and advise you on the best action to take on growing a healthy crop and generate the highest possible yield using IPM practices. 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.

## Hydroponic Lettuce Growers Meeting

Sylvia Jelinek

The NSW Farmers' Association Hawkesbury Horticultural Branch held their first meeting for the year on Tuesday February 3<sup>rd</sup> with a line up of guest speakers. Including; Helena Whitman (AUSVEG) and Alison Anderson (Veg IDO) presented the EnviroVeg program; Graham Nicol (Bayer) also presented on a trial results of a pesticide that may soon be registered in Australia called Movento<sup>®</sup> for sucking pests; Dr Leigh Pilkington (NSW DPI) updated growers and industry on the WFT/Hydroponic lettuce project; Len Tesoriero (NSW DPI) relayed findings from hydroponic lettuce virus surveys; Dr Sophie Parks outlined her results from the recently completed 'Pesticides in hydroponic lettuce review'; Sylvia Jelinek (NSW DPI) conducted a brief workshop to establish resource development opportunities for hydroponic lettuce growers within the Vegetable IPM project; and finally Hazim Arafeh (Semini's) talk about fancy lettuce varieties.

Image courtesy of Stacey Azzopardi



**Alison Anderson (Veg IDO) discussing the benefits of the EnviroVeg program**

This association is a great forum for growers and industry to meet and communicate the current events and issues in hydroponic lettuce.

To obtain further information or to become a member of this association please contact Frances Vella, NSWFA Regional Service Manager on 0428 228 818. The next scheduled meeting is to be held on the evening of Tuesday 28<sup>th</sup> April.

## Coming Events

Sylvia Jelinek

➤ **The Australian Vegetable Industry Conference** is a biennial event, this year's theme 'growing a healthy Australia' is aimed at demonstrating the industry's commitment to playing its part in addressing Australia's health issues. The 2009 conference will be held at the Melbourne Convention Centre from Monday 4 May until Wednesday 6 May, followed by the National Vegetable Expo in Werribee from Thursday 7 to Friday 8 May. Visit this site to register online [www.vegieconf.com.au/registration.html](http://www.vegieconf.com.au/registration.html)

➤ **The 2009 National Conference of the Australian Hydroponics and Greenhouse Industry** to be held at the Sydney Showgrounds from 19–22 July 2009 will undoubtedly be the largest industry conference and trade exhibition of its kind in the Asia-Pacific region. Carrying the theme of 'Futurefresh – Modernising Australian Farming'. The large, fully integrated trade exhibition will provide a unique opportunity for businesses associated with commercial hydroponic and greenhouse crop production to showcase their products. The key activity for Sydney growers will be workshops on important topics highlighting pesticide residues and food safety; business planning; and getting the best out of your technology. For further details or to register for this conference please call (03) 6231 2999 or register online at [www.ahga.org.au](http://www.ahga.org.au) or email [info@cdesign.com.au](mailto:info@cdesign.com.au)

## Greenhouse Vegetables in the Sydney Basin

Sylvia Jelinek

NSW DPI's Greenhouse Vegetable District Horticulturist Jeremy Badgery-Parker is currently working on 'Implementing preventative pest and disease management

practices'. If growers would like a one on one demonstrations or further information on The Association of Greenhouse Vegetables NSW Inc. please contact Jeremy on 02 4348 1920 or 0412 819 465

## Greenhouse Vegetable ID Guide

Sylvia Jelinek

'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 invaluable to most vegetable farmers. Available through the DPI bookshop on 1800 028 374 or email: [bookshop@dpi.nsw.gov.au](mailto:bookshop@dpi.nsw.gov.au)

## Further Information

[www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au) for pest and disease management information

[www.apvma.gov.au](http://www.apvma.gov.au) for chemical permits and registrations

Sylvia Jelinek  
Vegetable IPM Project Officer  
NSW Department of Primary Industries  
Phone: 02 4588 2135 or 0437 977 263  
Email: [sylvia.jelinek@dpi.nsw.gov.au](mailto:sylvia.jelinek@dpi.nsw.gov.au)

Leigh Pilkington  
Research Scientist  
Gosford Horticultural Institute  
NSW Department of Primary Industries  
Phone: 02 4348 1953 or 0409 77 00 61  
Email: [leigh.pilkington@dpi.nsw.gov.au](mailto:leigh.pilkington@dpi.nsw.gov.au)

Alison Anderson  
NSW Vegetable Industry Development Officer  
Phone: 02 9576 5449 or 0400 600 628

Email: [alison.anderson@bigpond.com](mailto:alison.anderson@bigpond.com)

**Growers interested in IPM demonstrations, pest & disease management advice or to get in contact with an IPM consultant in your area; are encouraged to call Sylvia Jelinek on 0437 977 263**