

Fruit Growers Tasmania Conference - *Berry field session IPM notes*

June 18, 2016

Griggs orchard, Lucaston Park & Stuart Griggs blueberry orchard, Castle Forbes Bay

Strategies for managing 2-spotted mites in raspberry tunnels

Cindy Edwards - IPM practitioner and consultant, YV-Fresh

Monitor:

It is important to find any infestation or even a single mite very early. However, persimilis can be slow to establish in cool conditions.

Introduce predators:

- *Pytoseiulus persimilis* 'persimilis': The most common predator commercially available for 2-spotted mite management
- *Californicus*: If conditions get tough - hot and dry, this mite may be better than *Persimilis*
- Check your consignment: Make sure there is a healthy population of predators and if on leaves, not too many 2-spotted mites

Vermiculite or leaves?

Vermiculite is convenient and doesn't have any 2-spotted mites. There is a danger of them starving if no 2-spotted mites in the crop or if the consignment has been delayed. It also can be hard to distribute in raspberries in the canopy. Leaves have the potential to carry too high a load of 2-spotted mites which mean the *persimilis* won't be able to keep up with the pest population. The advantage of leaves is that they carry all stages from egg to adult of the *persimilis*. This is good insurance during transit and when distributed in the crop. Leaves also come with 2-spotted mites as a starter food source for the predator. This is a good option if pest levels in the crop are very low or you are taking a 'pest in first' approach.

Helping your predators establish

Dust: is physically irritating and damaging to predators. The pest 2-spotted mite seems to cope better.

Humidity: *Persimilis* will establish better in slightly humid conditions whereas the pest 2-spotted mites prefer it dry.

The issue of dust and humidity can be managed by keeping the inter-row grassed or with some green cover. You should be mindful of broad leaved weeds as these can be a host for pests such as green vegetable bugs, mirid bugs and thrips. One comment made was to choose which grass you sow with care as some have proved slippery even for quad bikes.

Management of scarabs in blueberries

Cindy Edwards - IPM practitioner and consultant, YV-Fresh

Red headed cockchafer *Adoryphorus couloni*, (Bermeister) is a common grass grub pest common in Tasmanian pastures. It is particularly difficult to manage as the larvae feed underground. The redheaded cockchafer has a life-cycle of two years, most of it spent underground. The adult beetles emerge from the soil from late winter to early spring (end August to early October) and fly at dusk, to mate before egg-laying. Management targets the early larvae in the soil from late spring to late summer.

The entomopathogenic nematode, *Heterorhabditis zealandica* produced by Ecogrow Australia Pty Ltd as 'Weevilnem', controls a number of turf and nursery pests, including redheaded cockchafer. The product is best applied when soil temperatures reach 15°C in late spring through to mid-summer.

<http://www.ecogrow.com.au/pdfs/ECO%20Brochure%2002.pdf>

A biological control, Chafer Guard, formerly known as BioGreen™ Granules, was based on a fungus, *Metarhizium anisoplaie*. The granules containing the fungi were drilled into the soil and then attacked both the larva and adult stages of the redheaded cockchafer. Unfortunately the product has been removed from the market due to production problems.

Blueberry plant protection guide 2015-2016

[Melinda Simpson](#), NSW DPI Blueberry Industry Development

Resource: [Blueberry plant protection guide 2015-2016](#)

Phytophthora

This is a water borne fungus that is difficult to manage once established. The organism is spread in water, soil, and on infected nursery stock. It has a wide host range.

Pythium and *Phytophthora* symptoms can be very similar, with yellowing or reddening of leaves and lack of new growth. Below-ground symptoms vary from slight necrosis of young rootlets to extensive necrosis with (partial) reddish-brown discoloration of crowns and main roots. Infected bushes are stunted and may die eventually. The pathogens live in the soil and produce swimming spores (zoospores) that infect the roots during conditions of high soil moisture. Root rot is much more severe in poorly drained, low oxygen and heavy soils. Soil temperatures between 20 and 32°C promote disease development. Thick-walled chlamydozoospores or oospores are the primary overwintering structures and are released into the soil as the roots break down. These structures can survive for many years in soil.

Preventing root rot: (notes from [Pacific Northwest Plant Disease Management Handbook](#))

- Plant only disease-free plants. Inspect and discard any incoming diseased nursery stock.
- Amend soils with composted sawdust or bark mulch to provide good aeration for roots.
- Plant in raised beds to improve aeration and drainage
- Amend soil with gypsum before making raised beds and planting.

- Do not over-irrigate, especially in drip irrigation fields, so that the soil is saturated for 48 hours or more. Irrigate deeply and allow drying between irrigations. It is recommended to bury drip lines or place emitters away from the base of the plant.
- Do not overfertilize with nitrogen. Higher levels of phosphorus and potassium appear to help by stimulating root production.
- Ensure drainage away from plants in wet or poorly drained soil. Subsoiling beside the row often helps. Planting into raised beds or hills will also help.
- Dig out plants with 50% or more mortality to roots and tops. They are unlikely to recover even with chemical treatment.
- Avoid reusing pots from a previous crop for propagation. If pots must be reused then wash off all debris and soak in a sanitizing solution or treat with aerated steam for 30 min.

Botryosphaeria or 'tip die back'

This is what is often observed at the end of the season, after a severe weather event or associated with pruning cuts. Physical damage is often the point of entry for the fungus. It can be seen as dead tips. The best prevention is to use disease free planting material. Particular attention should be given to hygiene of pruning equipment, cleaning regularly and particularly after pruning any suspicious or diseased wood. Dead tips should be pruned to 2 to 3 cm below the dead cane. Any diseased material should be removed and burnt.