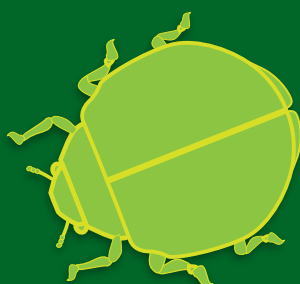


BUGS FOR BUGS



Bugs for Bugs Update

Autumn 2017



The adult maculate ladybird beetle (photo: CSIRO)



A batch of maculate ladybird eggs



A maculate ladybird larva feeding on aphids

The spotted ladybird

Natural aphid control

Bugs for Bugs has invested a great deal of R&D effort into the development of a rearing method for an exciting new biological control product.

Harmonia octomaculata (common name the maculate ladybird) is a promising tool in the fight against aphids. To keep things simple we have decided to call it the 'Spotted Ladybird'.

Aphids have the capacity to arrive suddenly and build up in numbers very quickly. They suck directly on plant sap and when in high numbers can cause leaf curl and other damaging effects to plants. Honeydew and subsequent sooty mould are also familiar to most growers. Many aphid species also transmit plant viruses.

While pesticides are available to control aphid populations they are becoming less effective due to the development of resistance. Also, the detrimental effect of these pesticides on beneficial species often leads to secondary pest outbreaks.

The good news is that aphids have an impressive suite of beneficial insects that are ready to feed on them. Some of these allies include lacewings, parasitic wasps, hover flies and of course the ladybird beetles. It is usually a combination of these insect groups that can give us rapid and effective control of aphid populations.

With the newly commercially available 'Spotted Ladybird' growers have another tool in the war against aphids. The option to release specialist aphid feeding ladybird beetles strategically can help accelerate the progress of biological control of these menacing pests.

Problems with thrips, mites or whitefly?

Try predatory mites!



The little beneficials that make a big difference

Predatory mites are becoming increasingly important players in the crop protection scene.

These little beasts are now recognised as affordable and effective alternatives to pesticides. They are the backbone of successful biological control programs in a diverse range of crops worldwide.

They have proven to be particularly valuable when it comes to dealing with insecticide resistant pests. For example they are used to control western flower thrips and spider mites, for which there are few other tools available.

We have very few effective miticides remaining. Using predatory mites wherever possible will help to conserve these valuable products for the future.

Bugs for Bugs has worked hard over the years to develop efficient and robust rearing systems so that we can deliver a reliable supply of affordable predatory mites to growers across Australia and beyond.

The key to success with predatory mites is selecting the right mites for the job, and doing the best you can to make the crop environment favourable for the mites you introduce.

The following guidelines describe the features of each of our predatory mite species, with tips for best use.



Alejandro Haro, manager of raspberry and blackberry production for the Costa Group at Corindi, checking on his predatory mites

Tips for optimising predatory mite establishment and performance

- avoid the use of broad-spectrum pesticides
- remember that the harmful effects of these products may persist for many weeks, so ensure that chemical residues have had time to degrade before introducing predatory mites
- start releasing predatory mites as early as possible, before pests have had time to build up
- increase humidity in the crop environment during hot dry periods
- minimise dust and avoid temperature extremes where possible
- provide a source of pollen to sustain populations of Californicus and Montdorensis during periods when pest pressure is low

The Costa Group

Industry leaders in berry IPM

The Costa Group is one of the largest berry producers in Australia. They supply both export and domestic markets, distributing their berries under the well-known Driscoll's brand.

The Costa Group are committed to implementing IPM in their berry production and they continuously undertake research to improve their IPM systems.

Alejandro Haro, manager of raspberry and blackberry production at their Corindi operation in New South Wales, has been working closely with Bugs for Bugs to optimise IPM in his raspberry crops. He currently introduces lacewings and a range of predatory mites (Persimilis, Californicus, Montdorensis, and Hypoaspis) as part of his IPM program.

Some biocontrol agents are released preventatively, while others are used to treat pest hotspots as they develop. For example, they introduce the generalist predator Californicus as soon as the crop begins to flower, allowing it to feed on pollen while laying in wait for the pest mites that it prefers to feed on. Persimilis,

the more specialised spider mite predator, is introduced to treat spider mite infestations as they arise.

The Costa Group sees significant advantages in using IPM. By spraying less and using only the softest crop protection products they preserve natural populations of beneficial insects and mites, and these volunteers help to keep their crops clean. They are able to pick their berries every day of the year without residue and withholding period issues, and they have a safer working environment for their staff.

Alejandro is concerned about insecticide resistance, but pests do not develop resistance to their predators, so he knows that IPM is the most sustainable approach. By focusing on biological control and minimising insecticide applications Alejandro is helping to preserve the precious IPM compatible crop protection products for times when they are really needed.



CALIFORNICUS

- prey on a range of pest mites including two-spotted spider mite, broad mite and cyclamen mite
- are particularly 'tough' predators
- tolerate a wide range of climatic conditions, making them suitable for use in environments that are too hot and dry for other predatory mites
- are able to survive well at low prey densities by using pollen as a food source
- are less sensitive to pesticide residues than many other predatory mites, and can be introduced earlier if residues are present

PERSIMILIS

- are specialist predators of two-spotted spider mite
- are one of the world's earliest and most widely used commercially reared biological control agents
- are highly mobile predators, which move readily between plants and can colonise large areas
- thrive in humid environments



MONTDORENSIS

- a breakthrough for modern horticulture in the war against resistant pests
- prey on thrips, whitefly, and other small insects and mites including spider mites, broad mite and rust mites
- are able to survive well at low prey densities by feeding on honeydew and pollen

From left to right: Californicus, Persimilis and Montdorensis (photos by Andrew Manners, Denis Crawford and Marilyn Steiner)



Fresh@Heart glasshouse cucumber grower recommends Optiroll Super

Fresh@Heart is a leading supplier of cucumbers to the Australian market. Manager John Ide uses yellow Optiroll Super to catch whitefly, thrips, aphids and rutherglen bugs. John is very happy with the results. He uses the sticky rolls in every planting, spacing them at 5 row intervals throughout the glasshouse. "We use them to pick up bugs before we even plant, and they do a great job."

Optiroll Super is another handy Bugs for Bugs product that helps growers like John to manage pests with minimal insecticide inputs.

We would love to hear from you

We are constantly trying to improve our products and services, and learn more about optimising the application of our biocontrols in the field. Please keep in touch and share your feedback with us.

Contact us through our website or find us on Facebook.

Looking for an extra tool to combat fly-in pests?

Optiroll Super is a new addition to our product range and complements our existing sticky traps.

These specially designed sticky rolls are 100m long and 15 or 30cm wide and are designed to maximise the capture of flying insects such as whiteflies and thrips.

The distinctive pattern has been shown to enhance the capture of most flying insects.

Use **Optiroll Super** to encircle the perimeter of the growing area or place along crop rows to mass-trap flying insects.

Optiroll Super

Now available in yellow and blue



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