

The Opportunity for Use of Biological Controls

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It is possible to manage thrips and pesticide-resistant thrips using biological control options as the main component of your integrate pest management strategy.



Commercially available biocontrol products

Contrary to the US, major flower-producing countries like Colombia do not have many commercially available biocontrol products:

- *Phytoseiulus persimilis* and *Neoseiulus californicus* are both predators of spider mites but will not significantly contribute to thrips control.
- *Beauveria bassiana* is an entomopathogenic fungus that will kill thrips.
- Mineral oils are very useful to integrate with biocontrol (e.g. as a cutting dip) but are not technically a biopesticide.

Entomopathogenic fungi

- Preventative and curative applications effective for thrips control.
- Apply as a cutting dip. Good coverage is essential.
- When spraying, apply as low volume, fine mist that contacts both upper and under leaf surface, and avoid run-off.
- Cold fogging is possible when applying *Beauveria bassiana*.
- Granular formulation on substrate helps control against thrips pupae.

Native Thrips Predators

- Many naturally occurring landscape predators that are the same or similar to biocontrol agents available in the US.
- In Colombia, there are native predatory mites that live on the foliage or in the substrate, *Orius insidiosus*, which eats thrips, aphids and lepidoptera and generalist predators like lacewings (*Chrysopa*), syrphid flies and lady beetles.
- Many can be mass reared on the farm or attracted to habitat plants.
- Regular releases of predators will prevent and reduce thrips populations.

Integration of Biocontrol and Pesticides

- Integration of biocontrol and pesticides is not easy but possible!
- Depending on the product, pesticide residues on crops and greenhouse structures can persist and negatively affect biocontrols.
- Stopping broad spectrum pesticide use may cause outbreak of secondary pests.
- Well-considered use of pesticides can reduce pest populations before the release of biocontrol agents so they have a better chance of success.
- Consult pesticide-biocontrol side-effect database for compatibility.



Cutting dips



Orius insidiosus



Predatory mite