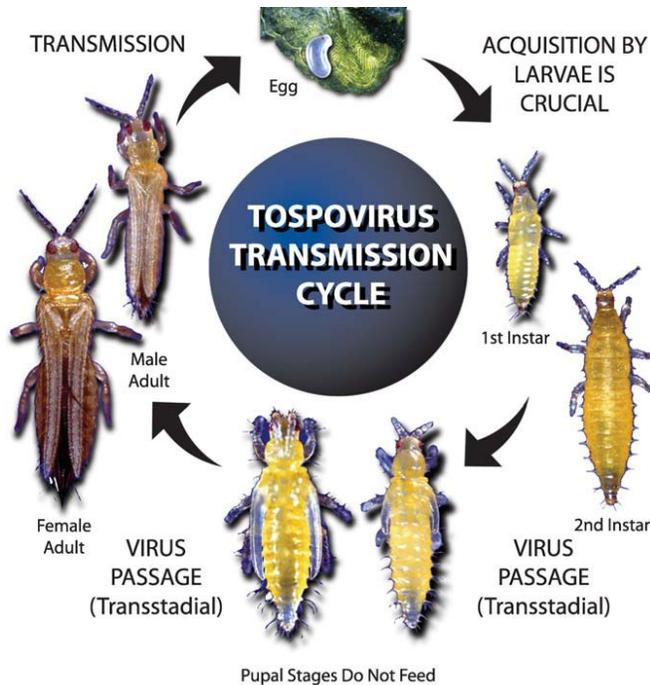


Thrips Control

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As a follow up to the recent article in the March 2018 ADS Bulletin, “Viruses and Insects – An Intricate Relationship” where we discussed some of the practices that could reduce the thrips numbers in our gardens, we will add one more tactic that would be effective: biological control.



First, the reason to focus on thrips control is that several viruses of dahlia are spread by thrips. The association between certain viruses and thrips is very intricate and complex. Thrips (is used as both singular and plural: one thrips, ten thrips) acquire viruses such as Tomato spotted wilt virus (TSWV) and other tospoviruses in their larval stages of insect growth and the virus is transmitted through pupal stages to the adult stage. The emerging adults can start spreading the virus for the rest of their life. Interestingly, adult thrips that feed on an infected plant can pick up the virus from that plant but won't be able to transmit to other plants. An adult thrips has to lay its

eggs on an infected plant; the larvae that hatch, when they feed on that infected plant may acquire the virus and the emerging adult of the next generation will start transmitting the virus.

The plot thickens! Some of the dahlia viruses, notably TSWV and INSV are capable of multiplying in their thrips vectors! This is a unique phenomenon since the vast majority of plant viruses do not multiply in their insect vectors. Thus these two viruses have two disparate hosts: plants and insects, making controlling these viruses very difficult. Moreover, these viruses can infect and survive in numerous alternate hosts – many of them weeds.

To make matters worse, thrips have a wide host range and they feed on hundreds of different plants that include the crops we grow and many weeds. Some of these plants are hosts for viruses as well. Thus, thrips act as a 'bridge' for some viruses between crops and weeds.



Breaking this cycle continues to be a challenge as complete eradication of alternate hosts of thrips is neither practical nor economical.

One non-chemical option is the use of blue and yellow sticky cards. It has been shown that thrips get attracted to these two colors. Having these sticky cards at the plant canopy would help reduce the numbers to some extent. If the cards become 'filled' with insects, it is advisable to replace them with fresh cards about once a week.

Another approach to reduce the thrips numbers in our gardens is a chemical option. Spinosad is available in formulations for garden applications and is sold as 'Monterey Garden Insect Spray'. Organic in nature, Spinosad is effective against thrips. One important thing to keep in mind when it comes to using Spinosad is not to over-do it. Excessive use could result in developing resistance in thrips to this chemical. Count the thrips on the sticky cards on a weekly basis. One guideline is to apply Spinosad if the thrips numbers exceed, on an average, 20 on the sticky cards, with no more than 3 or 4 applications during the season. There are several retailers that sell Spinosad and couple of sources are listed below:

<https://www.planetnatural.com/product/monterey-garden-insect-spray-spinosad/>

<https://www.arbico-organics.com/product/monterey-garden-insect-spray-spinosad-concentrate/pest-solver-guide-ants>

Biological control involves using living organisms that were found to have a harmful effect on a particular target pest. There are a few commercial products available that are effective biological control agents against thrips.

Predatory mites: Can be very effective in a greenhouse setting. The scientific name is *Neoselius cucumeris*. In the Pacific Northwest, they can be purchased from <https://www.arbico->

[organics.com/category/pest-solver-guide-thrips](https://www.gardenofeatin.org/organic-pest-control/pest-solver-guide-thrips) . The *Orius insidiosus*, a predator bug, is quite aggressive towards thrips and other small insects and can be very effective in thrips control when temperature is above 73°F. The Orius preys on thrips at various growth stages and can be applied in greenhouses, gardens and in the field. They can be purchased from <https://greenmethods.com/orius/>. The purple pepper plant can be planted between the dahlias to help keep the Orius fed in the absence of their prey (the thrips and other small insects).

Another biocontrol agent that was found to be effective against thrips in greenhouse conditions is Mycotrol ESO (*Beauveria bassiana*), an organic biocontrol product on a 10 to 14-day spray schedule.