THRIPS

SOLUTIONS GUIDE

Thrips are tiny, elongated insects in the order *Thysanoptera*. Adults have featherlike long, narrow, wings, while immatures are wingless. They can vary in size (0.5-5mm in length) and color ranging from yellow, yellow with a dark abdomen, red, black or a combination, depending upon the genus and species. Many thrips are attracted to flowering plants, feeding on pollen, which is needed for reproduction, as well as the flower petals. In the absence of flowers they prefer to feed on other tender plant tissue such as young foliage and buds.

Western flower thrips (*Frankliniella occidentalis*) is known for being an efficient vector of several Tospoviruses and a persistent problem in greenhouse operations where production occurs year-round. There are several other thrips that can also be problematic on ornamentals and in different production systems:

- Eastern Flower Thrips – *Frankliniella tritici*
- *Onion Thrips – *Thrips tabaci*
- *Tobacco Thrips – *Frankliniella fusca*
- Greenhouse Thrips – *Heliothrips haemorrhoidalis*
- Chilli Thrips – *Scirtothrips dorsalis*
- Echinothrips – *Echinothrips americanus*
- Myoporum Thrips – *Klambothrips myopori*

***A known vector of Tospoviruses**

Western flower thrips

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THRIPS CHARACTERISTICS

Successful control of thrips is difficult because of several biological characteristics:

- Preference for protected areas
    - Thrips eggs are typically inserted into leaf tissue or into flowers, which protects them from insecticides.
    - In the pupal stages, thrips will drop down into the soil where they are protected from foliar-applied insecticides.
    - Adults will often feed in the more protected areas of plants: the flowers and terminals.
- High reproductive rate and short life cycle
    - Adult thrips can survive from 30-45 days.
    - Most are female and lay 150-300 eggs.
    - Development time from egg to adult for many thrips species occurs within 12-14 days at temperatures of 77- 86°F. Under cooler temperatures, development time is longer.
- Adult thrips can fly and are easily carried into a greenhouse by the wind or on clothing

Poinsettia leaves showing signs of thrips damage

DAMAGE

Thrips feed by scraping and piercing plant tissue and sucking out the sap and cellular contents from leaf tissue, flower buds and/or unexpanded shoot tips. As a result, leaf stippling (silvery streaking), scarring and distortion can occur. Terminals may discolor and become rolled and flower petal tissue may have pale or necrotic spots.

Echinothrips

In addition to physical injury, several types of thrips have the ability to transmit tospoviruses, such as impatiens necrotic spot virus (INSV) and tomato-spotted wilt virus (TMSV); which can quickly spread throughout the greenhouse. Plants suspected of being infected by thrips-vectored viruses can be reliably diagnosed only by sending properly collected samples to a laboratory that tests for plant pathogens.

MONITORING AND CULTURAL CONTROLS

- Inspect new plants on arrival for evidence of thrips.
- Sticky cards (yellow or blue) should be used for early detection. Place cards just above the crop canopy (one per 1,000-10,000 sq. ft.; this will vary by crop) and near doors and vents.
- Visually inspect the underside of leaves for fast moving larvae and fecal matter.
- Place a white piece of paper under open flowers. Gently tap the flowers and use a 10x magnifier to examine the insects that fall out.
- For thrips that feed in buds or shoot tips, clip off several plant parts and put in a jar with 70% alcohol. Shake the solution to dislodge any thrips. Filtering the contents of the jar through filter paper may make thrips easier to see.
- Remove weeds within and around the production area. They can harbor pests and serve as a reservoir host for tospoviruses.
- Screen fans, vents and greenhouse openings to prevent thrips from entering.
- Keep floors and areas under benches clean as thrips can pupate in potting soil and plant debris.

THRIPS MANAGEMENT STRATEGY

Controlling thrips requires an integrated strategy of monitoring, utilizing proper cultural practices and effective control agents. Since thrips often feed in hard-to-reach areas of the plant (buds and flowers), thorough application coverage is critical for successful control. Modify your treatment interval to match pest pressure and development time based on the time of year or growing conditions; following the product label recommendations. Apply effective controls early, before high populations develop.

Predatory phytoseid mites, *Amblyseius cucumeris* and *Amblyseius swirskii*, and the predatory bug *Orius* are well-suited for immature thrips control on greenhouse crops.

THRIPS CONTROL SOLUTIONS

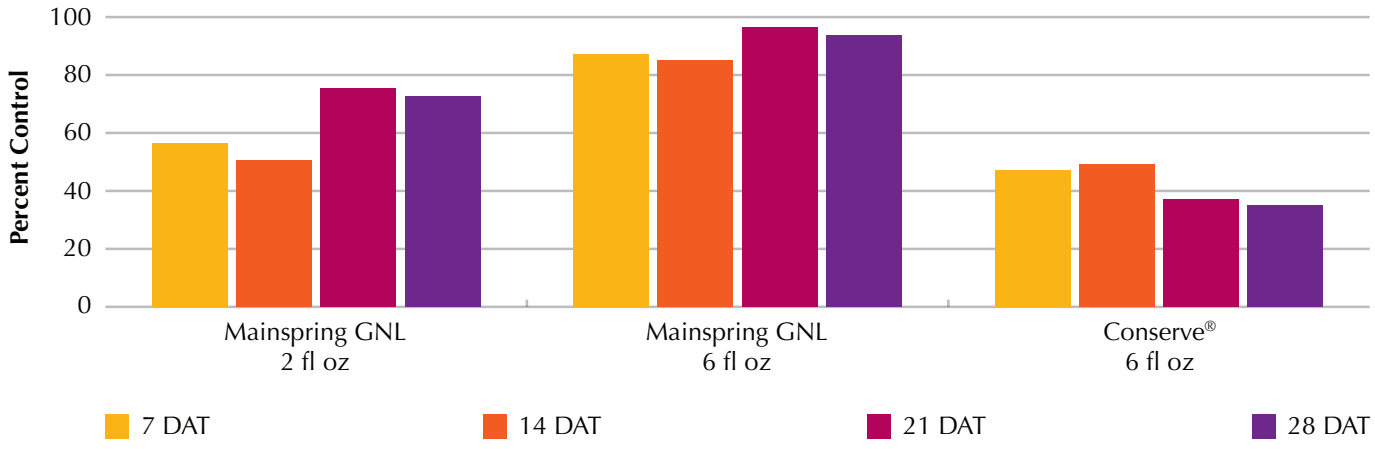
Syngenta offers several products that work well to control thrips with different modes of action to minimize the onset of insect resistance. Apply products with systemic activity early in the crop cycle to keep populations from building to damaging levels. Use products with contact activity as needed for spot treatments or clean up prior to shipping.

Damage is often noticed before the thrips are detected. At that point, thrips populations are probably very high and will be harder to control. It is imperative to monitor for thrips rather than wait for damage to appear.

Syngenta has developed several agronomic programs to protect crops from insect pests and diseases. They can be viewed and downloaded at **www.GreenCastOnline.com/Solutions.**

Insecticide	IRAC Group	Rate (per 100 gal)	Activity	Notes
Avid® 0.15EC	6	8 fl oz (Spray)	Contact Translaminar	• May be used alone or in a tank mix with an insect growth regulator • Apply prior to shipping for clean up
Flagship® 25WG	4A	4-8.5 oz (Spray or Drench)	Contact Systemic Translaminar	• Apply sprays on a 7-14 day interval OR use as a drench for long-term, systemic control • Compatible with predatory mites
Mainspring® GNL	28	4-8 fl oz (Spray) 8-12 fl oz (Drench)	Systemic Translaminar	• Apply sprays on a 14-day interval • Use of an adjuvant at low rates may enhance control OR use as a drench for long-term, systemic control • Compatible with beneficial insects
Scimitar® GC	3	3-5 fl oz (Spray)	Contact	• Apply as needed to reduce immature and adult populations

THRIPS (*KLAMBOTHRIPS MYOPORI*) TRIAL CALIFORNIA (ADULTS & NYMPHS)



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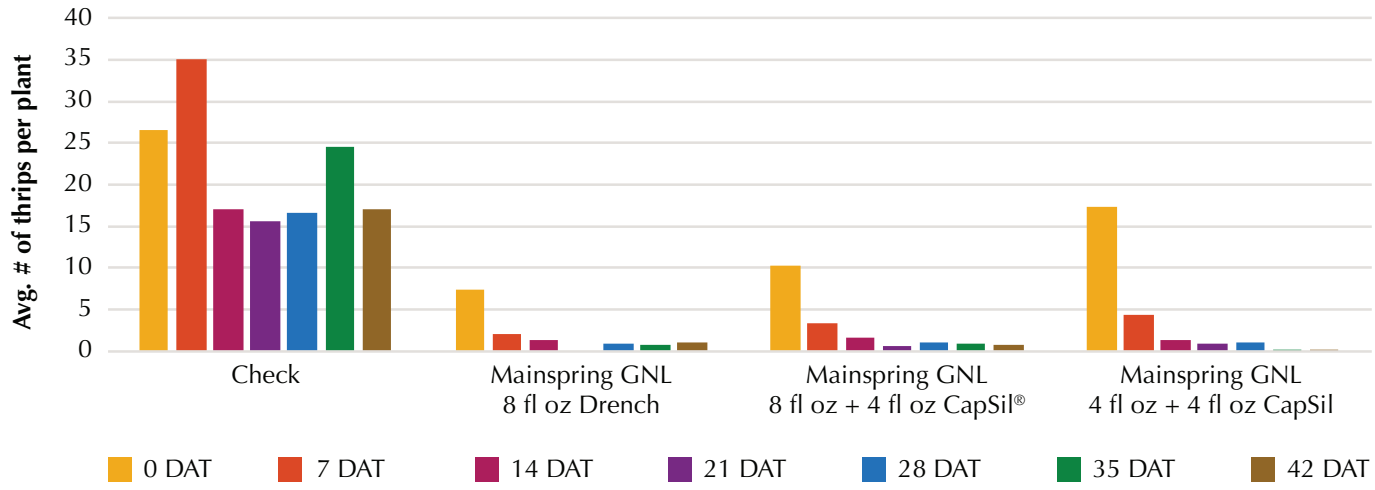
Foliar application; DAT = Days After Treatment

CONTROL OF WESTERN FLOWER THRIPS ON PETUNIA



2017 - Frank, NCSU

DAT = Days After Treatment; Drench treatments applied once; Foliar spray applied on a 14-day interval

Learn more about thrips control at **www.GreenCastOnline.com/Ornamentals.**

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