



**Greenhouse Pest Message June 10, 2022**

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**Summer Insect Pests – Thrips**

More growers are or will soon be dealing with more issues with **thrips** during the warmer summer months. As temperatures increase, the time it takes for thrips to develop from egg to adult is shortened.

For example, at 69° F, it takes 26 days for western flower thrips to develop from egg to adult. But, at 81 F, it only takes 10 days!

At 69° F, an adult female lives for 75 days & produces 125 offspring/female. But, at 81° F, an adult female lives for 34 days and produces 228 offspring/female!

When a source of pollen, i.e. flowers are present, their reproductive rates triples. With spring flowering ornamental plants still present, and perhaps weeds, there is plenty of pollen. Thrips pupae may also be present in growing media debris under the benches. Thrips may also be moving inside from outside the greenhouses.



Figure 1 & 2: Thrips feeding damage to hibiscus (left) and dahlia flowers (right).  
Photos by L. Pundt

If you are relying on chemical controls, thrips are notorious for developing resistance, so it is very important to rotate among products with different modes of action. Keep in mind that long rotations are better than shorter rotations. Consider two to three applications with same mode of action before

switching to chemistry with another mode of action (depending upon any label restrictions).

So, what are some options against thrips?

Drenches

Mainspring GNL, as a preventive drench (need well-developed roots), one week to take effect, 4 or more weeks control

*Steinernema feltiae*, insect killing nematodes, as a drench or sprench against thrips pupae

Foliar Sprays

- Aria (29) suppression
- Overture (G)- seems to still be working for growers
- Pylon (13) (G)- plant safety concerns! Not for use on dianthus, kalanchoe, salvia, zinnia ...
- Pedestal SC (15) IGR
- Pradia (29 & 28) suppression
- Mainspring GNL (28) as a foliar spray, include a wetting agent
- Flagship (4A) suppression
- Safari (4A) suppression
- Hachi – Hachi SC (21A)- plant safety concerns! Not for use on impatiens!!!
- Botangard/Mycotrol – alone or tank mix with azadirachtin (IGR) materials
- Ancora – apply when relative humidity is greater than 75% with moderate temperatures.
- Oils such as SuffOil-X provided you can obtain good coverage and follow all plant safety cautions needed when using oil-based products

For more, see New England Greenhouse Management Guide online at <https://greenhouseguide.cahn.uconn.edu/>

Mini sachets containing *N. cucumeris* have been working very well for growers in their spring crops. During the summer months, you may need to consider warmer loving *A. swirskii* or *Orius* spp. with lobularia/pepper banker plants as a source of pollen.

If you are using chemical controls or using biological control agents such as predatory mites that do not fly, you may want to supplement your management strategies with mass trapping of thrips. Yellow hopper tape or larger sticky cards can be used. Place them in the fridge, so they are easier to handle before

placement. Thrips have two flights per day in the morning and evening or they may fly into your greenhouses from outside.

Based upon research in Ontario by Dr. Sarah Jandricic on mass trapping of thrips, researchers caught 150 thrips for every 2 ft of hopper tape every week. They recommended that the hopper tape be placed within 2 to 13 feet of the side vents. You can leave the sticky tape up for 8 to 12 weeks.

In smaller greenhouses, you can use 8 large (16 x 8 inches) sticky cards (often sold for use in greenhouse fruiting vegetables) per 1000 ft<sup>2</sup>. This rate has been successful in pot mum crops. Place the cards or tape just above the crop canopy.

For more: <https://www.greenhousecanada.com/thrips-control-making-the-case-for-mass-trapping-31854/>

### **Leaf Spots on Zinnia**

Both bacterial and fungal leaf spot diseases can occur on zinnia. It is important to know which disease you are dealing with because management strategies differ.

**Bacterial Leaf Spot** on zinnia is caused by *Xanthomonas campestris* pv. *zinnia* which causes leaf spots (but none of the systemic infections that you dealt with this year on zonal geraniums). *Xanthomonas* can be carried on the seed, but seed companies may be hesitant to treat their seed because of potential negative impact on seed germination.

Symptoms: Look for small, water-soaked spots on the leaves often with a yellow halo surrounding the leaf spot. As the disease progresses, these spots turn angular and brown resembling *Alternaria* leaf spot. Often symptoms are most noticeable when the zinnias are beginning to flower.

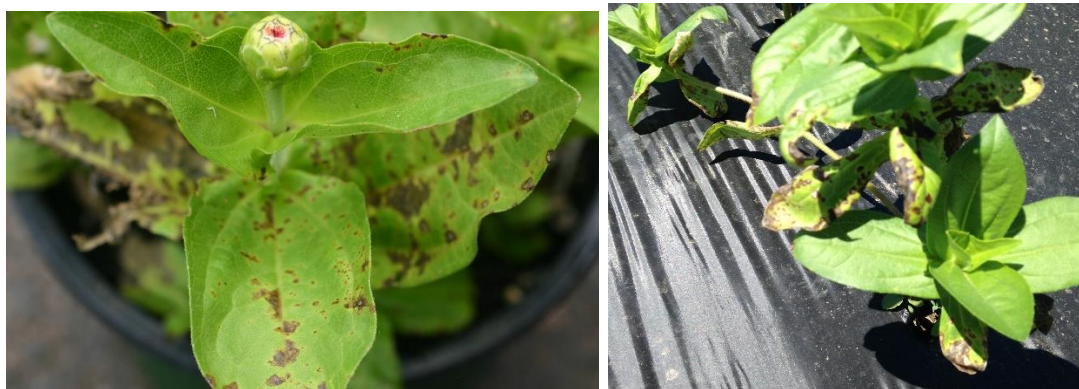


Figure 3 & 4: Bacterial leaf spots on zinnia. Photos by L. Pundt



Management: During production, keep zinnia foliage as dry as possible, and space plants as much as possible. Discard severely infected plants with leaf spots and treat rest of the plants. Alternating biological fungicides such as *B. subtilis* (CEASE) with copper sprays can help.

**Alternaria Leaf Spot** is caused by the fungal pathogen, *Alternaria zinnia*. Look for reddish brown spots that later turn purple with gray centers in the center of these spots. In addition to leaf spots, stem cankers, and flower blight can develop.



Photo credit: John Hartman, University of Kentucky, Bugwood.org

Management: Keep foliage dry and water early in the day. Treat with protective fungicides labeled for Alternaria such as Heritage, Daconil, mancozeb or copper compounds.

For more: <https://ag.umass.edu/greenhouse-floriculture/photos/zinnia-alternaria-leaf-spot>

*Funding provided by USDA NIFA CPPM grant 2021-70006-35582.*

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