

Thrips Control: Unleash the Arsenal

| Rick Yates

>> Published Date: 3/30/2015

Many growers entered the spring 2015 season with swords drawn, anticipating another fight to the finish with Western flower thrips (WFT). Rampaging thrips can leave scarred blooms and deformed leaves, and can spread tospoviruses in their wake.

Not too many years ago, growers would occasionally dump an entire planting of impatiens due to a high level of infection with the thrips-transmitted viruses, TSWV and INSV. At the time, a lack of effective pesticides, combined with the huge host range of the thrips, led to these two diseases threatening the economic health of our industry.

The tide turned when Conserve received a greenhouse label and quickly proved to be just what the doctor ordered. Outstanding thrips control, excellent plant safety and a four-hour REI seemed almost too good to be true for growers weary from doing battle with thrips. Conserve's long list of good qualities may have also proven to be its Achilles' heel. Growers began to use it almost exclusively for thrips control, leading to a significant decline in its effectiveness.

This article covers the insecticides currently showing good activity on WFTs, but please avoid the temptation to skip over the next few paragraphs to get there. Resistance management labeling and good pesticide stewardship dictate that we cannot simply hammer away with pesticides as our "silver bullet." If pesticides are the beginning and end of our control efforts, then I predict we're setting ourselves up to revisit the troubles from the past. With respect to WFT, we still have a few arrows in our quiver. Before we let them fly, we need to take a holistic approach to WFT control.

Scouting, exclusion, sanitation, rotating pesticides and biological control agents (BCAs) have been the battle cry of educators for a long time. Integrated pest management (IPM) may not be new, but it remains the framework on which effective pest control is built.

Examination and exclusion

The centralization of young plant production, much of it offshore, brings some challenges. Stock producers may have the same crops in production year-round. This makes executing a good pesticide rotation strategy more difficult, as many labels limit the application count per crop or per year.

Additionally, it's possible for even the most diligent young plant producers to have some level of pest pressure in their plugs and liners. Treating the same pest population for a long time makes resistance more likely. Therefore, prudence dictates that we never let our guard down when it comes to incoming plant material.

Strive to create a separate growing area where incoming shipments can be segregated long enough to evaluate the plant material for insects, mites and diseases. Yellow sticky cards can be placed just above plant height as soon as the shipping boxes are opened.

Educate yourself about incoming crops and draw on your past experiences to focus your scouting efforts. If you know the primary vulnerabilities of a crop, then you know what to watch for. After spending time and money keeping your production areas clean, don't just open the doors and turn new plant material loose until it's been evaluated and, if needed, treated.

Scouting

Examining incoming shipments is just the beginning of a good scouting program. Thrips reproduce so rapidly that detecting a population early is imperative to make control effective and less costly. Early detection is important whether utilizing pesticides, BCAs or an integrated approach.

We can debate which color of sticky card will best attract thrips, but the most important thing is to use the cards. Mount them close to the top of the crop canopy at a rate of one 3 x 5 card per 1,000 sq. ft. Plan to read and replace cards on a weekly basis. In the midst of a serious problem, you may choose to read the cards more often to evaluate the effectiveness of treatments being made.

If sticky cards are in the greenhouse so long that there are no more sticky surfaces left, the cards aren't being used correctly and won't provide useful information. Blue cards may be somewhat more attractive to WFTs, but yellow cards still work well and attract a wide array of insects for monitoring. Growers utilizing BCAs know that yellow cards can also be useful in monitoring the populations of beneficial insects. Whether you hire a scout or train your own dedicated employee, the benefits of scouting far outweigh the associated expenses.

Cultural practices

Thrips control requires a holistic approach that leads us to examine every aspect of our growing practices. Use every tool at your disposal to reduce the number of thrips in your greenhouses! Research indicates that several insect and mite pests reproduce more rapidly on nitrogen-rich tissue. Monitor crop nutrition to make sure fertilizer levels meet crop needs without being excessive.

Thrips reproduce more rapidly when pollen is readily available. Florel, a PGR used to increase branching, can be used to time bloom in many crops, thereby reducing the amount of pollen available to thrips early in production. Early blooms rob plants of energy needed to make vegetative growth, contribute to Botrytis when they decay and kick thrips reproduction into overdrive.

BCAs

This article won't hold all that needs to be said about the successes that can come from using BCAs to control thrips. Whether you're interested in a "pesticide-first" program, wherein nematodes bolster control of thrips and fungus gnats, or a "BCA-first" program that may include compatible pesticides in an integrated approach, contact your supplier for assistance in getting started.

Pesticides

Thrips have a well-deserved reputation for developing resistance to pesticides. Practicing a sound rotation strategy is an important part of slowing the progression of pesticide resistance. The pesticide information in this article is believed to be correct at the time of writing, but it's the applicator's responsibility to read and follow all label instructions. Labels can and do change without notice. Not all of the products mentioned in this bulletin are registered in all states. Some pesticides are restricted-use in some states or regions and not others. Contact your supplier or your state's Department of Agriculture to verify registration status. Pesticides other than those mentioned may also be safe and effective.

GGSPRO works closely with many growers regarding pest control programs. The resulting feedback provides valuable insight into which products are working well and how best to utilize them. The following products and application strategies are currently among the most successful for thrips control:

- **Pylon I** Foliar applications are typically made twice, seven days apart before rotating. Certain fruiting vegetables are on the label. A total-release aerosol version is now available. Both formulations are for greenhouse use only.
- **Avid I** Tank mixed with a neem-based insect growth regulator (IGR)—such as Azatin O, AzaGuard or Molt-X—and applied as a foliar application is effective when applied two times, seven days apart.
- **Overture I** A slower-acting insecticide, taking up to seven days to see significant reductions in adult thrips populations from a foliar application. Growers often use this product after faster-acting options have reduced the population. Greenhouse use only.
- **Kontos I** Drench applications show very good results, though they're slow to take full effect (up to three weeks). Several weeks of control have been noted. GGSPRO has developed a drenching calculator to accurately determine stock solution recipes and drench volumes. Foliar spray applications have given variable results and aren't recommended for thrips control. Geraniums and dracaena are among crops damaged by Kontos.
- **Nematodes I** *Steinernema feltiae* have been assisting growers to control the pupal stages of WFT. Applications to the media every two to three weeks is recommended to augment other control efforts. This approach adds excellent fungus gnat control at the same time.
- **Microbial insecticides I** BotaniGard provides good results when applied frequently as foliar applications. Met52 EC and Preferal are newer products, so we have less experience with them. In addition to foliar applications, media treatments of these two products may control the pupal stage of thrips. More research is needed to confirm the effectiveness of media applications. All of these microbial products have certain edible crops on their labels.
- **IGRs I** Pedestal has long been a part of thrips-control programs, causing death at the point of molting. Enstar AQ is also labeled for thrips, but the GGSPRO team has limited experience with it. IGRs are generally used in combination with adulticides or after a good knockdown has been achieved with other products.
- **Others I** Certain neonicotinoid insecticides—such as Flagship, Safari and Tristar—have shown effectiveness against thrips. This mode of action is already heavily used for a variety of other greenhouse pests, so GGSPRO typically doesn't recommend them for thrips due to overuse concerns. For many years, Mesurol was one of the more effective products for thrips control, but results have been more inconsistent in recent years. Mesurol is a restricted-use pesticide in all states. Aria is a feeding blocker that's labeled for thrips suppression, but won't provide an immediate knock-down.
- **Latest introductions I** XXpire has two active ingredients, one of which shares the mode of action with Conserve. Results have been encouraging, but careful attention will need to be paid to rotations with other MOAs. Mainspring has a brand new MOA and has activity against thrips from a spray or a drench. We look forward to getting more grower feedback on this product in the near future.

Many factors must be considered when making pesticide decisions. While efficacy is very important, bee safety, impacts on BCAs, plant and bloom safety, visible residue and other characteristics need to be considered. Contact your supplier for help as you work through the decision-making process. **GT**

Rick Yates is GGSPRO Technical Services Manager for Griffin Greenhouse Supplies. He can be reached at ggsprotech@griffinmail.com.