



Integrated Pest Management Issues

July 2018

Managing Thrips in Peony Crops

Introduction and background

Thrips are one of the more common pests of plants, and recent research has been looking at thrips pests of peonies in Alaska. Thrips are very small, most are less than $\frac{1}{20}$ -inch long as adults, slender insects with fringed wings and can vary in color from light yellow to black. Some thrips species feed on plants, while others are predators of other small arthropods. Plant-feeding thrips are a concern because they can cause considerable damage, may vector plant diseases, and may pose a threat for exports.

Damage from thrips can be the result of feeding or egg laying. Thrips feeding damage includes discoloration, deformation, and necrotic areas as a result of thrips puncturing the outer layer of plant tissue and sucking out the liquids.

A thrips lifecycle is relatively short. Because of this, multiple generations can occur during a single growing season, impacting management efforts and treatment timing. In Alaska, Southcentral farms will likely observe two generations and a partial third generation during the peony season, while Interior farms will observe one and a partial second generation. Both locations have a peak flight for the first thrips generation in mid to late June. Unseasonal weather conditions may cause the partial generations to drop back or result in an additional full generation.

Thrips like to hide, and do not like to be exposed. In peonies, they settle between the bracts and sepals or between sepals and petals of early stage buds. From these protected locations, thrips lay eggs and progressively move further into the bud as it opens.

Scouting and Monitoring

Scouting and monitoring for thrips in and around your peony field is your first line of defense against this pest. Sticky cards are a useful tool to help monitor thrips activity. Blue sticky cards may be more attractive to thrips but yellow sticky cards are useful if you are interested in trapping for multiple pests. Traps should be placed within the field at bud height and along field borders to help determine thrips presence and movement both within the field and into the field from surrounding vegetation. Sticky cards should be collected and replaced weekly or every other week and inspected for the presence of thrips.

Individual plant inspections can also help determine thrips presence. Scan flower buds and foliage for distortion or scarring from thrips feeding. Lightly blowing into opening buds often draws thrips to the surface. Buds for infestation once per week by tapping them hard over a white plate or pan and watching for thrips dislodged from the buds.

Cultural Control

Growing multiple cultivars with varying bud maturity is a good production practice; however, it can allow thrips populations to flourish by providing a continuous source of susceptible buds. Poor sanitation practices, such as failing to deadhead, can also allow thrips populations to build if left unchecked. Maintain good sanitation in your field, deadhead spent blossoms, and remove highly infested buds and all plant debris from the field. Dispose of infested material to further prevent buildup of thrips populations.

Weed Management

Thrips feed on over 250 kinds of plants, and many of them are weedy species. Controlling weeds both in the field and surrounding the field will limit thrips' population growth ability and the potential for them to spread disease. Hand roguing, mechanical mowing, fabric mulching, and pre-emergent herbicides are all weed control options. The use of "weeder geese" has been trialed but has not provided long-term suppression of weedy species.



Thrips on a peony flower. Photo by UAF Cooperative Extension Service

Insecticides

Insecticides are another tool that can be used for thrips management in combination with good cultural and weed management practices. Thrips are one of the most difficult insects to control with any single control measure alone. Relying solely on insecticides could lead to insecticide resistance. Rotating insecticides with varying modes of action and having an integrated pest management plan can help make sure you are successful in your pest control efforts.

Early scouting for thrips and correct timing of applications are important for thrips management when using insecticides. For most pests, applications shouldn't be made until pest presence is known. Unfortunately, for thrips this timing might be too late since they are prone to hiding and it can be difficult to observe them. Early season applications are recommended for thrips moving into fields in order to prevent or suppress a larger second generation later in summer. The initial protective spray is critical; time the insecticide spray to protect button-stage peonies. Follow-up applications of products may be necessary depending on the residual activity of the insecticide and should be done in accordance with the label recommendations. With all chemical controls, treat a few plants and check for phytotoxicity before using on the entire crop. Before using an insecticide, make sure you understand how to read product labels, know proper application methods, and have your equipment calibrated with appropriate nozzles for the task. You may have the best product available, but if it is not applied correctly it will not control the target pests.

Once the thrips have settled into the protected locations of the buds, contact insecticides will no longer be effective against them.

Active Ingredient	Trade Names*	Notes	Labeled For
Acephate	Orthene	Low selectivity, organophosphate	Ornamental herbaceous plants, thrips
Azadirachtin	AzaMax Botanical	Insect growth regulator	Ornamental herbaceous plants, thrips
Beauveria basiana	Mycotrol	Entomopathogenic fungi	Ornamental herbaceous plants, thrips
Fonicamid	Aria	Systemic insecticide with selective activity against hemipterous pests	Ornamental herbaceous plants, thrips
Spinosad	Entrust	Naturally derived product made by soil bacterium	Ornamentals (herbaceous and woody), thrips in outdoor settings
Spirotetramat	Kontos	Insect growth regulator for immature thrips	Ornamentals, nursery plants, thrips
Abamectin	Avid	Insecticide for suppression; young immatures must be contacted by the spray	Ornamentals, thrips

*Trade names listed here do not represent endorsement of the product nor a comprehensive list of products available. They are used as examples for the active ingredient. Read and follow the label of the product you purchase for application rate, timing, and approved sites.

Remember — The label is the law!

For more information:

Alaska Department of Environmental Conservation Pesticide Control Program, 907-376-1870 or <http://dec.alaska.gov/eh/pest/>

“How to read a pesticide label,” <https://extension.psu.edu/what-you-need-to-know-about-reading-a-pesticide-label>

“Overview of Monitoring and Identification Techniques for Insect Pests.” <http://www.extension.org/pages/19198/overview-of-monitoring-and-identification-techniques-for-insect-pests#.VMGc2MYoN9k>

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