



Managing Western Flower Thrips in the Home Landscape

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Have you ever wondered why your rose buds never opened, but instead dried up and fell off? The problem may be western flower thrips, *Frankliniella occidentalis*. These tiny, (1/5 inch), slender insects are not readily visible because they hide in flowers, buds, or other hidden parts of plants. Western flower thrips have become a worldwide pest.

IDENTIFICATION AND BIOLOGY Western flower thrips are very active flyers, moving easily from plant to plant. Female color can vary from pale yellow to a dark brown. Males are yellowish. Nymphs are translucent white to cream. Two hundred forty-four plant species from 62 different families are host plants for western flower thrips in the United States.

Female thrips can reproduce with or without a male. Consequently, a population can build up quickly. A generation matures in two weeks, so many generations occur in a season. Adult female thrips insert up to 300 eggs into the soft tissues of plants, particularly flowers and leaves. Within a few days, during warm weather, the eggs hatch becoming wingless larvae or nymphs. Hatching may take two to three weeks in the cooler weather of spring and fall.

The larvae feed in tight protected areas of plants like buds and unfolding leaves. They feed by scraping the surface of plant and then sucking up the sap that spills out. This feeding kills plant tissue around the feeding site. Disease organisms may enter into the plant through the punctures that result from thrips feeding or actually be introduced by the insertion of the sucking mouth part. Thrips only feed for about six days and then drop to the soil or leaf litter to pass prepupal and pupal life stages. They do not feed while in the soil. The adults then emerge from the soil, fly to a plant, and start the cycle again.

When heavily infested, leaves may be streaked silver in color and flecked with soot-like fecal matter. Often this blackish excrement is more easily seen than the thrips themselves. The leaves may then turn brown and dry up. Leaves may fall off prematurely. Growth may be retarded, buds and flowers destroyed, and fruits malformed.

INTEGRATED PEST MANAGEMENT

Western flower thrips are difficult to control with insecticides. Their secluded behavior often makes it difficult to get spray to where

they are located. Because many generations occur in a year, resistance to insecticides develops quickly. Thrips also have barrier tissues on their bodies that deter penetration of chemicals. Research shows they can detoxify some chemicals with an enzyme in their bodies. Western flower thrips insecticide resistance is common for these reasons. There is known resistance to the following chemicals: acephate, malathion, permethrin, dimethoate, chlorpyrifos, and many others.

It is recommended that insecticides be avoided in thrips management except as a last resort. If chemicals are to be used, a rotation of insecticides is a must to avoid pesticide resistance. Another dilemma is the number of chemicals registered for use against thrips is limited. Diversification of control tactics or integrated pest management is absolutely necessary.

What Can a Homeowner Do?

Healthy plants resist thrips attack. Fast-acting quick release nitrogen sources produce soft, rapidly growing tissue that is very susceptible to attack by thrips. Consider the following suggestions as an integrated approach to thrips management. Use of several techniques will be necessary.



Cultural Practices:

- Scout plants often for signs of infestation.
- Prune out infested terminal buds and destroy them.
- Use only slow release fertilizers.
- Conserve natural predators by avoiding persistent pesticides.
- Dispose of plant residues.
- Eliminate weeds.
- Avoid plant stress by maintaining adequate soil moisture.
- Use spray irrigation, wetting plant surfaces to discourage thrips colonization.
- Avoid encouraging new growth with heavy shearing of plants.

Mechanical Practices:

- Trap with blue, white, or yellow sticky traps.
- Put highly reflective mulches like aluminum foil around the base of plants or mulch with newspaper to prevent thrips from entering the soil to pupate.

Biological Practices: (available for purchase)

- Release lacewing larvae.
- Apply insect-eating nematodes.

Direct Chemical Controls

- Use insecticidal soaps for temporary knockdown.
- Use horticultural oils as another temporary solution.

Since thrips are difficult to control, an integrated approach is necessary. Help is available at local Cooperative Extension offices.