



Solution Sheet

Thrips

The Problem

Thrips are among the most common and difficult insect pests to manage in commercial ornamental production. Thrips are tiny, ranging from 1/16 to 1/8 inch long and vary in color from yellow to brown to black. Both adults and larval stages feed on plant tissue with rasping-sucking mouthparts. Most thrips feed on leaf tissue but some species can damage young flower buds causing them not to open or be deformed. In addition to this direct damage, thrips are capable of transmitting plant viruses making thrips management critical in commercial production settings.

What To Look For

The thrips life cycle includes an egg stage, two mobile feeding larval instars, two pupal stages and an adult stage. Adult greenhouse thrips are dark brown to black with a silver sheen and yellow legs. Often small brownish black specks of excrement can be seen on the leaves. Thrips feeding damage causes discoloration of the leaf tissue to appear bronzed to bleached between the lateral veins.

Thrips-infested flower buds often fail to develop or the flowers are deformed. Damaged flowers often have streaks of necrotic or discolored tissue. Adult thrips are frequently found in shaded areas of the plants and are most prevalent in spring when populations are reported to reach their peak. They damage both foliage and flowers of numerous ornamental plants. Greenhouse thrips are most problematic on annual bedding plants including begonia, chrysanthemum, dahlia, nasturtium and phlox.

The type of thrips and the host where they occur depends on geographic location, but the most economically important thrips include greenhouse, flower, gladiolus, red-banded, Cuban-laurel and chili thrips.

The Solution

Frequent inspection of plant material is essential to prevent rapid buildup of thrips in nurseries and greenhouses. This includes thorough inspection of new plant material prior to moving them into production areas. The use of hot pink, yellow or blue sticky cards can be useful for trapping and monitoring thrips populations. These should be placed 1 to 2 inches above the crop canopy at one or two cards per 1,000 square feet. Sanitation is an important tactic to remove all possible sources of thrips. Many weeds are susceptible hosts for thrips and should be removed or controlled with herbicides. Remove and dispose of old stock plants. Infested plant hosts and plant debris also serve as reservoirs for thrips. The use of biological controls (live predators) can be very effective, but limits the choice of chemical insecticides and should be practiced with this consideration. Altus® and Kontos® can be used on all stages of crop development for effective control of thrips. Preventative insecticide applications are recommended and be sure to refer to product labels for directions.

Example Rotation for Thrips Control in Ornamental Production

Solution ¹	IRAC Group	Activity	Restricted Entry Interval (REI)	Rate/100 Gallons	Application Intervals
Kontos [®]	23	Systemic	none	drench 1.7 - 3.4 fl. oz	drench early as a preventative; 14 - 28 days
Hachi-Hachi [®] SC	21A	Contact	12 hrs	foliar 14 - 32 fl. oz	10 days; do not exceed 2 applications per plant cycle
Altus [®]	4D	Systemic & Translaminar	4 hrs ²	foliar 10.5 - 14 fl. oz	7 days; may require 2 applications
Pedestal [®]	15	Contact	12 hrs	foliar 6 - 8 fl. oz	do not exceed 2 applications per crop
Pylon [®]	13	Contact	12 hrs	foliar 5.2 - 10 fl. oz	5 - 7 days; do not exceed 2 applications per crop

¹ See insecticide labels for complete details. Always read and carefully follow label instructions.

² The REI for Altus in California is 12 hours.

Other products to consider as a tank mix or rotation include Mesuro[®] 75 W (1A), TriStar[®] 8.5 SL (4A), Pradia[™] (28 + 29), Mainspring[®] (28) and Overture[®] 35 WP (UN)

Altus[®]

Altus is a systemic insecticide that controls thrips with flexible spray applications made anytime throughout the crop cycle. Altus should be applied as a spray for protection against thrips attacking the foliage. A member of the butenolide class of chemistry, Altus is upwardly systemic and absorbed by the roots and has translaminar activity that allows it to move readily through the leaf tissue. There is no known cross-resistance to Altus with other insecticides, making it an excellent part of a resistance management program. Altus is labeled for use before, during and after bloom. There is no bee box on the label. Altus is an excellent insecticide option for use in integrated pest management (IPM) programs and is compatible with the predatory mite *Amblyseius swirskii*. Altus is a soluble liquid (SL) labeled for use on ornamental plants in greenhouses and nurseries, including fruit and nut trees, interiorscapes and landscapes.

Kontos[®]

Kontos is a systemic insecticide from the tetrionic acid class of chemistry. Kontos can be applied as a foliar spray or drench and controls immature thrips. However, Kontos works best for controlling thrips when applied preventatively as a drench. Kontos is both xylem- and phloem-active, meaning that the product moves upward and downward in treated plants. There is no known cross resistance of Kontos with other insecticide modes of action, making it an excellent part of a resistance management program. Kontos is an excellent insecticide option for use in integrated pest management (IPM) programs and is compatible with the predatory beetle *Atheta coriaria*. Kontos is a suspension concentrate (SC) formulation for use on ornamental plants in greenhouses and nurseries, including non-bearing fruit and nut trees. See the label for plant restrictions.



Figure 1. Thrips feeding damage on a Chrysanthemum flower. (Envu)



Figure 2. Symptoms of INSV (thrips transmitted) on rununculus. (Envu)



Figure 3. Larval stage of chilli thrips on a rose leaf. (Envu)