Thrips are among the smallest insect pests of agricultural crops as well as ornamental plants. During the past few years some research has been carried out to determine our most common species and evaluate their damage to agriculture. Almost all cultivated crops are inhabited by these insects at one time or another.

Thrips are minute insects measuring from 0.5 to 5.0 mm. They are elongate (cigar shape) and usually have two pairs of fringed wings which are folded lengthwise and flat on the abdomen when they are at rest. Many species are shades of brown, whereas, others are yellow, black, purple, reddish, and some almost white. Antennae are usually short, with a varying number of segments. In most cases the legs are rather short. The mouthparts are a rasping-sucking type.

**They Feed on Plants**

Most of the thrips are plant feeders. A few are predaceous and others feed on fungus, frass of beetles, leafmold, and humus. Plant feeding thrips cause scars and blemishes on fruits and vegetables which turn silver or brown. Thrips cause distortion of new leaves, silvering of others, defoliation, bud and flower injury, and some species as *Frankliniella* spread plant diseases.

Thrips have a simple life history. The minute, bean-shaped eggs are oviposited by the female in or on tender parts of the plant. These hatch into a nymph which feeds 7 to 10 days or longer on the plant. There are two nymphal stages before the prepupal or resting stage. The latter transform into pupae. During this period the adult stage is reached in 4 to 14 days. In a few cases reproduction occurs without mating. In some species males are unknown.

**Most Common Species**

**FLOWER THRIPS:** This group is the most abundant in Arizona as well as western United States and causes serious damage to a number of crop plants.

The western flower thrips, *Frankliniella occidentalis* (Pergande) which does serious damage to cotton, cantaloupes, melons, alfalfa, vegetable crops and flowers.

MOST WIDESPREAD in Arizona is the Western Flower Thrips, *Frankliniella occidentalis* (Pergande) which does serious damage to cotton, cantaloupes, melons, alfalfa, vegetable crops and flowers.

Ordinarily, they cause little damage to the buds and flowers which they inhabit. However, during the winter months considerable injury is

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The most serious damage results from their feeding on the underside of leaves of seedling cotton, beans and other young plants of vegetable and field crops. Seed crops of alfalfa, onions, lettuce, carrots, sugar beets and others are reduced by flower thrips.

**Grass Thrips:** Two species, *Chirothrips falsus* Priener and *Chirothrips mexicanus* D. L. Crawford are the principal pests of bermudagrass seed crops. The developing seed is attacked mainly by the nymphs. However, the adult thrips also do considerable feeding and damage. Growers apply three to five insecticide treatments to their fields each year to control thrips.

**Citrus Thrips:** *Scirtothrips citri* (Moulton). This species is a small yellowish thrips found mainly on citrus. It is active, and a stronger flier than many insects. The citrus thrips occurs only in California and Arizona and apparently prefers a hot dry climate. It has adapted itself to citrus, but also occurs on many shrubs and trees. Scarring or "ringing" of the citrus fruit occurs in the spring shortly after the fruit is set. Sometimes silvering appears on larger fruit, due to later attacks during the year. These thrips inhabit the terminals or new growth of citrus trees. The feeding by nymphs and adults on the developing and small leaves causes streaks of white or yellow in addition to curling and cupping of the new leaves.

**Onion Thrips:** *Thrips tabaci* Lind. Onion thrips are similar to flower thrips in size and color. It occurs on a wide range of hosts in Arizona, including crop plants and native vegetation. Crops frequently damaged in Arizona are onions, carrots, cantaloupes, lettuce, alfalfa, cucumbers and cotton. Silverying of foliage is common on plants attacked. Yields of seed crops are reduced, such as onions, lettuce, carrots and flower seeds.

**Bean Thrips:** *Hercothrips fasciatus* (Perg.) The adults are dark gray, with the front wings banded with two light and dark areas. Bean thrips occur on a number of plants and cause significant injury to many garden and field crops. Although this species feeds principally on the leaves of plants, it sometimes attacks fruit, resulting in silverying and discoloration. Most cases of crop injury are traceable to infestations from weeds and plants nearby.

**Gladiolus Thrips:** *Taeniothrips simplex* Morison. Wherever gladiolus are grown, the foliage and flowers are severely injured by this pest. The adults are dark brown and the nymphs yellowish. Initial injury occurs on the leaves and spikes, resulting in a spotted or bleached appearance. Damaged flower buds fail to open properly and the colored petals are blotched with white. In some cases flower damage is extensive and the blooms are worthless. Further injury takes place in storage to the corms. Feeding on the corms results in scabby leisons and a reduction in vitality.

**Beneficial Aspects**

The banded-winged thrips (*Aeolothrips*) occur occasionally. These thrips are predators of plant-feeding thrips, mites and other small insects. Most of the species appear to be specific to plants and prey as well as in seasonal occurrence. Species belonging to *Scolothrips* are also predaceous on mites and small insects. The best known is the six-spotted thrips, *S. sexmaculatus* which is found on many plants. It is particularly effective against spider mites.

**Suggested Control Methods**

It is often necessary to use chemical insecticides for the control of thrips on agricultural crops. Materials currently used are: DDT, dieldrin, malathion, dazinon, sulfur, sabidilla, dimethoate, Bidrin, toxaphene, dioctahion, naled, parathion, Trithion, and mevinphos. The materials and their use for specific crops are cited in Arizona Insect Control Recommendations, Bulletin A-14, Cooperative Extension Service and Agricultural Experiment Station, University of Arizona.

For the home garden and ornamentals, some of the same materials may be used. However, only those which are less toxic or hazardous are suggested. These include: sulfur, sabidilla, malathion, dieldrin, dazinon, and DDT. In all cases the label will suggest the rates and give precautions. Follow these instructions exactly, and refer to Bulletin A-14 in case of edible crops.