Western Colorado Thrips

Developed by Bob Hammon,
Colorado State University, Agricultural Experiment Station,
Western Colorado Research Center @ Fruita

This page is intended to extend western Colorado based research and information to producers, gardeners or anyone else interested in thrips. It will be updated as new information becomes available.

Differentiating Onion Thrips and Western Flower Thrips

Introduction Thrips are small (<2 mm in length) insects in the order Thysanoptera which can become serious pests of many species of plants. Their life history, which often includes two quiescent immature stages in the soil and asexual reproduction, makes management of pest populations a challenge. Identification of which thrips species is affecting a crop is essential in the proper choice of insecticide for effective control. This guide shows characteristics which are useful in differentiating onion thrips, *Thrips tabaci*, from western flower thrips, *Frankliniella occidentalis*. There are hundreds of species of thrips present in North America, and species diversity increases dramatically in the tropics. Within a region, many species may be present, but only a few species reach pest status by feeding in damaging numbers on economic plants. Onion thrips and western flower thrips are consistently pests of several economic crops including onions and alfalfa in western Colorado. Their response to insecticides has been different, with onion thrips traditionally controlled by pyrethroids, and western flower thrips by organophosphates and carbamates. Their relative susceptibility to insecticides varies greatly from region to region depending on many factors, including previous insecticide exposure. Development of resistance to insecticides is common within thrips species, and western Colorado onion thrips have apparently developed resistance to pyrethroid insecticides in the past few years.

A research program into the biology and management of thrips in western Colorado is expanding during the 2001 season, and a greater knowledge base of regional thrips species diversity, chemical control, and onion varietal tolerance characteristics should be acquired during the next few years.

Characteristics for Differentiating Onion Thrips and Western Flower Thrips The morphological characteristics outlined here differentiate the two species on a generic level. If the characteristics are applied to a thrips in genera other than Thrips or Frankliniella, the results will be wrong. Any thrips that reaches pest status on onions or alfalfa is probably one of the two species. Use only adult (winged) thrips for identification. Further research will give more characteristics for identifying local species. This publication will be updated as this research allows.
Look at the specimen from above. Western flower thrips has a row of hairs along both the upper and lower margin of the prothorax (first segment behind the head). Onion thrips has hairs on the lower, but not upper margin. This characteristic is visible with a 10X hand lens (and good eyes), but is easily seen with a good dissecting microscope visible.

Focus on the rows of setae (hairs) along the center of the rib of the forewing. Western flower thrips have two continuous rows of setae, while there is a gap in at least one row of setae in onion thrips. A dissecting microscope is necessary to see this characteristic.

The terminal antennal segment of onion thrips is not as sharply pointed as that of Western flower thrips. This characteristic is best observed when the two species are observed side by side. A dissecting microscope is necessary to see the characteristic in enough detail to be useful.