HOW TO IDENTIFY THRIPS, A Deadly Enemy in Your Plant Room?
Nancy Robitaille

Thrips have always been a common and difficult to control pest for growers of African violets and its family. The western flower thrips is the most widespread and troublesome thrips for African violet growers, but other species can also be serious pests. Thrips carry deadly virus which can destroy your collection by injecting INSV Impatience Necrotic Spot Virus.

The following species have been encountered in flower crops:

**Echinothrips americanus**
This thrips, which does not have a common name, is easily recognized by the white band across the thorax at the base of the wings. It has been found on poinsettias, cucumbers, and peppers. It occurs mainly on foliage, but as population levels increase the blossoms may be invaded. The pupal stage occurs on the host plant, unlike other species that drop to the ground to pupate.

**Frankliniella intonsa (the European flower thrips)**
This thrips is found in the blossoms of several commercially grown greenhouse flower crops. It also occurs in field-grown cut flower crops. *F. intonsa* can only be distinguished from *Frankliniella occidentalis* by examination with a microscope.
*Frankliniella occidentalis* (the western flower thrips)
This is a medium sized species (1.0 - 1.2 mm long). It varies in colour from yellowish to dark brown. This species can only be identified with certainty under a microscope, but the presence of large numbers of thrips in blossoms is a strong indicator of *F. occidentalis*. It feeds on a wide range of plants, and can spread tomato spotted wilt virus and impatiens necrotic spot virus to susceptible crops. This thrips can develop resistance to insecticides relatively quickly.

**WESTERN FLOWER THRIPS**

**STAGES OF DEVELOPMENT OF THE WESTERN FLOWER THRIPS**

*Thrips fuscipennis* (the rose thrips)
*T. fuscipennis* is very similar in appearance to the onion thrips, and can only be distinguished with a microscope. It is uncommon in Canada, appearing occasionally on roses and cucumbers. This thrips is easy to control with insecticides.
**Thrips tabaci (the onion thrips)**

*Thrips tabaci* is a relatively small species, the female being 0.8 - 1.0 mm long. Color variation makes color an unreliable characteristic for identification. This thrips is found primarily on foliage, seldom invading blossoms. *T. tabaci* is usually easily controlled with insecticides.

**Thrips Identification**

With the exception of the striped *E. americanus*, it is very difficult to distinguish between thrips species except under a microscope. In our case it is wise to destroy any and all thrips found on plants.
Thrips Life Cycle

Thrips go through six stages: an egg, two larval stages, a prepupal and pupal stage, and an adult. One generation takes about a month, but this can vary somewhat with temperature and the species involved.

At the end of the second larval stage, the thrips drop to the ground and pupate on or below the surface. In a few species, the prepupal and pupal stages remain on the plant. The pupal stage is resistant to insecticides. This means you must make more than one spraying.

Adults are the reproductive and winged stage. They are poor fliers but their feathery wings allow them to be readily carried by air currents.

Thrips Management

1. **Start clean:** An important part of keeping a crop or your African violet plant room thrips-free is to make sure the young plants are clean. Examine purchased or grower-propagated transplants for thrips before placing them in a collection. Thrips are easily seen on dark colors such as blue or purple.

   Sticky card traps placed among the new plants for a day or two will quickly indicate the presence of thrips.

2. **Stay clean:** Covering the screens or other openings to plant room has been found to reduce pest problems. Screening used to exclude thrips must be very fine. Such screening, known as micrōscreen, has a maximum hole size of 0.16 mm. If you are an avid gardener, be very careful that you do not bring thrips inside from your garden. Thrips also can be transported by animal fur or human hair.

3. **Eliminate Sources:** Thrips feed on a wide variety of plants and can readily be found in weeds outside your home. Thrips are not strong fliers so maintaining a weed-free zone immediately around a home can reduce the number of thrips.
4. **Monitor:** The most reliable way to detect thrips in a collection is with either yellow or blue sticky traps. By installing traps and checking them weekly, a grower can discover thrips when they first infest a crop so immediate action can be taken. Ongoing monitoring tells growers if a thrips control program is working.

5. **Insecticides:** It is difficult to devise a spray program that would be equally effective for all growers. The effectiveness of insecticides can vary between collections since local populations may have developed resistance. This is especially true for the western flower thrips. Also, thrips are found deep inside flower buds, which makes them hard to reach with most insecticides. When removing buds and flowers, disbudding, squeeze them first in so they are not able to get away.

Insecticides found effective to some degree include DDVP, Decis, Nicotine, Orthene and Trumpet. Apply Trumpet three times at 5-day intervals followed by two sprays of Orthene or Decis at 10- to 14-day intervals. Subsequent sprays should be applied as needed.

Growers should incorporate at least two insecticide classes (different group numbers) in their spray program to reduce the possibility of resistance.

6. **Biological Control:** There are a number of commercially available biological agents (bugs that eat bugs) to control thrips. Trials have demonstrated that they can be used successfully on some flower crops. However, there have also been a number of unsuccessful attempts, usually failing because pesticides had to be applied to control other pest problems resulting in mortality to the biological agents. It is difficult to achieve a completely pest free crop using biological agents. At present, this method of pest control is impractical for most flower crops. In our enclosed plant rooms, biological bugs may help a great deal. Probably costs does not invite the grower of AVs and other gesneriads to try this solution. Certainly those growers who have large collections or who operate green houses should consider biological bugs.
Thrips Management - Chemical Control

Trumpet bendiocarb greenhouse foliar spray / soil drench
Sevin carbaryl field foliar spray
Organophosphate
Cygon / Lagon dimethoate field foliar spray / paint
D.D.V.P. dichlorvos greenhouse fumigant
Dursban chlorpyrifos field foliar spray
Malathion malathion greenhouse / field foliar spray
Orthene acephate greenhouse / field foliar spray
Pyrethroid
Decis deltamethrin greenhouse foliar spray
Botanical
Nicotine nicotine greenhouse fumigant
Other: Permethrin concentrate, Talstar, Cyfluthrin granules, Carabyl (Sevin) Dimetoat 25 WP, Conserve, Avid and newer recommendations.
Success spinosad greenhouse foliar spray
Verify label for specific crop registration.

Growers should incorporate at least two different insecticides from two different classes. If you are using the product or formulation for the first time, do a test spray to check for phytotoxicity. Plants with open flowers are more susceptible to spray damage.

For more information on management of Thrips, contact the following:

Ministry of Agriculture and Lands
Abbotsford Agricultural Centre
1767 Angus Campbell Road
Abbotsford, B.C. V3G 2M3
Phone: (604) 556-3001
Toll free: 1 (888) 241-7141

Nancy Robitaille
www.nancyrobitaille.com