



# Cotton Comments

OSU Southwest Oklahoma Research and Extension Center  
Altus, OK



June 8, 2011

Volume 1 Edition 6

## Early Season Pest - Thrips



Thrips generally are not considered a serious pest of cotton, except in years when favorable growing conditions permit early planting. Heavy thrips infestations will occur if plants have emerged before wheat or other small grains mature. Mature thrips often move into stands of succulent cotton seedlings, causing curled and misshapen leaves. Thrips infestations vary from field to field and from year to year and should be dealt with accordingly.

Thrips are small, approximately one-sixteenth inch in length. The color varies according to species. It may be similar to the color of wheat straw, yellow, black, or light brown. The adults have two pairs of long, narrow, fringed wings which enable them to fly. The life cycle contains four stages: egg, larva, pupa, and adult. Larvae and adults will over winter in debris and trash near the field. In the spring, the adult females lay eggs by inserting them into the plant tissue.

The creamy white eggs hatch into small larvae which begin to feed on the plant. After a short time, they burrow into the soil and transform into a non-feeding stage called the pupae. They emerge as adults and continue to feed on the plant. Thrips damage cotton by injecting their stylets into the plant epidermis. Ruptured cells release plant fluids which are sucked up by the insects. Injury first appears as dark brown spots which assume a silvery appearance several days later. Feeding occurs on the lower side of the leaf and may injure the terminal bud so that new leaves fail to develop and growth is retarded. Leaves will be crinkled and cupped. Economically damaging infestations occur when plants average 3 thrips per plant.

Weekly scouting is the only way to monitor the treatment's performance. Expect damaging populations of thrips to materialize first in fields where no at-

planting insecticide was used. Windy conditions will impact your ability to accurately assess thrips numbers. In-field detection becomes nearly impossible as the wind picks up. Take a composite sample pulling at least 30 plants across the field placing them in a plastic bag or bucket. Waiting to examine plants until you return to your vehicle will take a little longer, but will be a lot more accurate.

Besides looking on the undersides of cotyledons and true leaves, be sure to examine the terminal bud. Both adults and larvae feed and lounge around here and are easily overlooked unless you carefully inspect this region. Also don't forget to count and record the numbers of dislodged thrips running around on the inside of the baggie.

Crop demographics play a large role in thrips pressure. Wheat is widely known as an early season habitat for thrips. However, alfalfa is another thrips nursery that can produce large numbers. With each cutting, thrips leave in search of food. Cotton fields in close proximity to alfalfa meadows may experience a huge influx of thrips overnight that might even rival the exodus from adjacent wheat fields.

Finding adult thrips in protected fields is normal and is expected as long as the thrips migration continues. Remember that thrips blown in may not feed immediately and feeding is required for the insect to pick up a lethal dose of the systemic insecticide.

It is easy to spot when the insecticide performance begins to fade by tracking the plant's physical condition related to thrips numbers. As protection fizzles

visual leaf damage should increase along with a rise in thrips numbers.

Quick action will prevent maturity delays associated with infestations that reach threshold levels. Over-the-top sprays are popular in fields planted to Roundy Ready Flex or Liberty Link varieties. The strategy of tank mixing an insecticide with glyphosate (on Roundup Ready Flex varieties) or Ignite (on Liberty Link varieties) is cost effective, assuming thrips are an issue.

Growing season length plays a major role in crop lint yield response to thrips control. Thrips can adversely impact earliness. In areas with longer growing seasons, or in specific crop years when the cotton may be able to adequately compensate for both yield and quality (micronaire) impact, this may not be as important. Dr. David Kerns, Extension Entomologist with Texas AgriLife Extension Service at Lubbock has conducted numerous trials across the South Plains and Panhandle regions. This area of Texas typically has lower long-term heat unit accumulation than southwestern Oklahoma, thus thrips control responses in that area may not be representative of what we might encounter here. However, for cotton produced farther north in Oklahoma, his data may be more suitable. For producers who used a seed treatment insecticide (Orthene/acephate, Gaucho/Acceleron I (imidacloprid), Aeris (imidacloprid + thiodicarb), Cruiser (thimethoxam), Avicta Complete Cotton (thiamethoxam + abamectin) thrips control may begin to break at 7-18 days after emergence depending upon the product. For a good table based on Dr. Kerns' results which provides length of

control information for the various seed treatments, go to:

### Thrips Control in Cotton

Various foliar products are available and have also been recently evaluated in Texas. Comments by Dr. Kerns in his April 6, 2011 newsletter include:

Orthene/Acephate is the standard foliar thrips control product, and when used properly can provide good thrips control. At the 3 oz/ac rate, acephate will generally provide about 5 days control.

Bidrin (dicotophos) has long been used for aphid and stinkbug control, and in the past used more frequently for thrips. At 3.2 oz/acre it performs comparably to acephate, but based on limited data appears to provide slightly less residual control.

Dimethoate is often used for thrips control on the High Plains and is usually priced competitively with acephate. At the 2 pt/ac rate it provides good knockdown, but based on limited data, it appears to provide slightly less residual control.

Vydate (oxamyl) is one of those rare insecticide/nematicides that will translocate from the leaves down to the roots, and has thus been widely used in recent years for aid in the control of nematodes when Temik begins to lose efficacy. However, in the absence of Temik, there is interest in using Vydate earlier and there are questions regarding its efficacy toward thrips and nematodes when used early. The Vydate label suggests suppression of thrips. In a single study at the 17 fluid oz/ac rate, at

times provided similar control as Orthene at 3 oz/acre, but did not perform as well other times. More data is needed to fully assess its activity on thrips. Vydate is typically used for the pinhead square application for fleahopper control.

Things to consider when using foliar applications for thrips control:

1. Timing is critical. Controlling thrips during the first 2 weeks post crop emergence appears to be the most important period; especially under cool conditions. You need to be “Johnny on the spot” with these applications when thrips are numerous; even a few days delay can be detrimental.
2. Avoid automatic treatments. Automatically adding a foliar thrips material in a Roundup application may not be necessary or may be poorly timed. Often either the weeds aren’t present when the thrips are or vice versa.
3. **Scout for thrips. Go out and visually assess if thrips are present. Pull up plants and thoroughly search for them or beat the plants inside a plastic cup.**
4. Don’t spray based on damage. The damage you see today happened 3 to 5 days earlier and you may have already suffered yield loss. Spraying based on damage is essentially a revenge treatment.
5. Spray based on thresholds. Use an accepted action threshold to help you determine whether or not you should treat.

<b>Thresholds for foliar thrips sprays</b>	
<b>Cotton stage</b>	<b>Threshold</b>
<b>Cotyledon to 1 true leaf</b>	<b>0.5-1 thrips/plant</b>
<b>2 true leaves</b>	<b>2 thrips/plant</b>
<b>3 true leaves</b>	<b>3 thrips/plant</b>
<b>4 true leaves</b>	<b>4 thrips/plant</b>
<b>5-6 true leaves</b>	<b>Rarely justified</b>

If you have questions concerning insect control issues, please call the OSU Southwest Research and Extension Center or contact your local OSU County Extension Educator.

**Retirement - Terry Pitts, OSU Southwest Area Extension Specialist - IPM**

Terry Pitts has made the decision to retire and we would like to have you join us for his retirement celebration. There will be a come-and-go reception on Wednesday, July 6, 2011 from 2:00 to 4:00 pm at the OSU Southwest Research and Extension Center 3 miles south of Altus on Highway 283. Refreshments will be served. Please help us celebrate a successful career and wish Terry well in his retirement.

If you wish to contribute to a retirement gift for Terry, please make the check to the Oklahoma Cotton Council and note that it is for the Terry Pitts Retirement Fund and **mail not later than July 1** to:

Oklahoma Cotton Council  
c/o Harvey Schroeder  
809 Willard  
Frederick, OK 73542

## Editors

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Newsletter is maintained by Jerry Goodson Extension Assistant.

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