

# FOCUS on South Plains Agriculture

*A newsletter from the Texas AgriLife  
Research and Extension Center at Lubbock*



Volume 52 number 6

24 May 2013

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<http://lubbock.tamu.edu/focus>

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# Cotton Entomology

## **Considerations for thrips management in Texas High Plains cotton**

While we are waiting for germination and plant establishment, I want to share some insect management information. Thrips are the main concern during the first four weeks after plant emergence. Thrips are tiny (about 0.8 mm in length), slender, spindle-shaped, pale yellow colored insects that cause damage by feeding (scrapping and sucking) on plant tissues. Both adult and immature stages are capable of causing damage to cotton, especially young seedlings.

Depending on the history of thrips pressure in your field, you may choose to use a seed treatment or make foliar applications, or even both. If thrips have not been a concern in the past and there are not many grain crops nearby (wheat is an excellent source for thrips), the extra cost for a seed treatment may be unnecessary. However, thrips populations in cotton are many times unpredictable and seed treatments provide insurance against thrips damage in the first few weeks of seedling growth. I have checked wheat fields north of Lubbock for thrips and it appears that a good number of thrips are still present in wheat even after the unusual late freeze. As a result, we should not ignore the fact that thrips could potentially be a concern in the coming weeks. Several seed treatment options are currently available, such as imidacloprid (Aeris<sup>®</sup>, Aeris + Trilex Advanced<sup>®</sup>, Acceleron I<sup>®</sup>, Acceleron FI<sup>®</sup>), thiamethoxam (Cruiser<sup>®</sup>, Cruiser Dynasty<sup>®</sup>, Avicta Complete<sup>®</sup>, Acceleron N<sup>®</sup>) and clothianidin (Poncho/Votivo<sup>®</sup>). If you planted insecticide treated

seeds, your crop should be protected for approximately two to three weeks. Seed treatments should also protect cotton seedlings from other potential soil dwelling insect pests such as wireworms. If your seed was not treated with insecticide, and depending on thrips numbers on the cotton seedlings, you may choose to make a foliar application. Acephate (Orthene 97®) has been doing a good job controlling thrips in this area and fits well into the crop production budget. If multiple foliar applications are necessary for your crop, either for thrips or other insect pests later in the season, insecticides from a different mode of action group, such as neonicotinoids (Centric 40WG®, Assail 70WP®, Admire Pro®) may be used in order to avoid development of resistance to insecticides by pest insects.

Following seed germination, the crop must be scouted (monitored) for the presence of thrips, especially for the immature stages. The presence of immature thrips indicates a higher potential for damage from thrips if timely action is not taken. This is because the immature stages tend to be more constant plant tissue feeders, and, if immatures are surviving, that suggests the control properties of previously applied seed treatments or insecticide(s) may be fading away. Do not assume that thrips are absent just because you do not see any damage symptoms (silver colored leaves, crinkling and upward curling of young growth, reduced leaf size, unusual branching, etc.). By the time you see thrips-induced leaf injury, in most cases the damage has already been done and foliar insecticide applications will not provide the expected return or protection. Insecticide application decisions should be made based upon the thrips numbers (economic threshold) as determined by scouting the field. The current economic threshold for thrips in young cotton seedling is one thrips per true-leaf. However, this threshold is not “set in stone”; depending on plant growth, the threshold should be adjusted. For example, when seedling growth is slow and thrips continue to feed, the threshold could be lowered to half of the original threshold. By contrast, if seedlings are vigorously growing under favorable conditions, cotton can compensate for some of the initial thrips damage. In this situation the threshold could be raised. These adjustments are possible only after thorough and frequent scouting, and assessment of crop growth is necessary for effective and economical thrips management. Therefore, I recommend that cotton seedlings be closely monitored for the presence of adult and immature thrips. In order to monitor thrips numbers in your field, gently pull 5-10 randomly selected seedlings from a few representative sites in a field and examine the underside of the cotyledons, leaves and terminals of those seedlings. Thrips like to hide in closed spaces where their body is in constant touch with the surface (in this case, plant surface). Since terminals have more closed spaces than open leaves, you are likely to see more thrips once that terminal is opened using any pointed object such as tip of a pencil or needle. It takes a little bit of practice to locate thrips, especially immatures due to their small size. You may use a hand lens/magnifying glass to examine the terminals where small immatures are hiding. Although it appears to be a lot of work to scout for thrips, based on such scouting you can actually save the cost of an extra insecticide application, or you can protect the crop from thrips damage by a timely insecticide application. If you would like to see how scouting for thrips is done you can watch [our video on how to scout for thrips](#). AB



*Thrips damage to seedling cotton*



*Adult western flower thrips (note the feather-like wings)*



*Immature thrips (as indicated by the small size and lack of wings)*

# Cotton Agronomy

## Overview of the 2013 Season

Planting of the 2013 Texas High Plains and Panhandle cotton crop is well underway. Some scattered rainfall was received this month and provided some help to irrigated producers by providing additional planting moisture. However, the region is still experiencing severe to extreme drought conditions and much more rainfall is needed. A good chance of rain is forecast into Friday (5-24). With a little luck and a lot of prayer, we will see some precipitation across the region.

*Speaking of prayers, I would like to ask that the entire state of Texas keep our friends to the north in Moore, Oklahoma, and surrounding areas, in your prayers. Especially those who lost loved ones during the recent weather events.*

At the time of this writing, May 23<sup>rd</sup>, the annual total of rainfall for Lubbock is 2.62 inches according to the National Weather Service. This amount, when compared to the last two years, is greater than was observed in 2011 (1.1 inches through May) but below amounts from 2012 (3.65 inches through May). Although we are 1.5 inches ahead of 2011, most locations are lacking in subsoil moisture when compared to the same year. The long term average for Lubbock from Jan 1 through May is 6.21 inches so we have a lot of catching up to do. Furthermore, recent winds and warmer temperatures are making stand establish either more difficult or, in some cases, impossible. Many fields (dryland and some sub-surface drip irrigated (SSDI)) in the region will require additional rainfall to ensure good stand establishment. After visiting with Texas A&M

AgriLife Extension IPM and County Agents from across the High Plains, Panhandle and Northern Rolling Plains earlier today, the regions are a mixed bag when considering irrigated cotton planting progress and emergence. Some reports of “skippy” stands under SSDI have been received. As for dryland plantings, most producers have opted to wait until closer to the final planting dates ([Final Cotton Planting Dates](#)) according to most Extension Agents. Temperatures in early May were, well, “somewhat abnormal”!! However, a warming trend developed following the last freeze event on May 3<sup>rd</sup>. Fortunately, very little (some dry planted) cotton was in the ground prior to the freeze.

## **Considerations Following Planting**

For cotton producers in the region who were able to plant into a firm, moist seed bed, the agonizing “waiting” period for emergence has begun. Under normal conditions, cotton should emerge between 5 and 7 days after planting (DAP). Under warm moist conditions and relatively shallow seed placement, cotton may emerge as early as 4 DAP. However, if “less than optimal” planting conditions, such as cool soil temperatures are observed, cotton plants may take as long as 10 to 14 days to emerge. I would suggest that producers check for emergence issues if seedlings are not “pushing” after 7 days. One condition that can inhibit seedling emergence is soil crusting. Soil crusting can occur following an intense rainfall event or heavy irrigation. If emergence is delayed due to crusting, a condition known as “big shank” may result. Producers should consider “helping” seedlings emerge under these conditions by mechanically breaking the crust. Quick cotton seedling emergence helps insure that crop development is not delayed and may reduce the occurrence or effects of some seedling diseases. Although getting the cotyledons out of the soil is important to crop development and production, what goes on beneath the surface is equally important. During the time it takes for the cotyledons to emerge, cotton roots can reach as deep as 10 inches into the soil, provided adequate moisture is available. Any hindrance of the root development can significantly reduce the possibility of achieving optimum yields. In addition to cool soil temperatures, as discussed by Dr. Jason Woodward in the [May 2, 2013](#) edition of FOCUS, other conditions can hinder root growth and development. These conditions can include, but are not limited to, herbicide injury, water stress, and hard pans. An excellent source for more information on emergence and early season management is the [2011 Cotton Resource DVD](#).

Some producers in the area are reporting established stands under center pivot irrigated systems at this time. However, there are also reports of “skippy” stands in some SSDI fields. Where row watering or remaining center pivot sprinkler systems were available, good emergence is being reported. Once a good stand is established, producers should closely monitor the crop and minimize early season stresses that can ultimately delay maturity and/or reduce yields. Although producers are doing all they can to maximize moisture and there’s not much can be done to reduce heat stress, early insect pressures (thrips) and weed pressure should be monitored closely. (For information more information on early season insect pests, contact Dr. Apura Barman at the Lubbock Texas A&M AgriLife Research and Extension Center, or your local Extension IPM Agent). Ultimately, good stand establishment is one part management and one (or sometimes

two) parts luck. Even when the stars align and everything goes well, inclement weather events can occur that can severely damage or destroy an established cotton crop.

## **Making Replant Decisions**

With a chance of thunderstorms in the forecast and the ever present threat of associated significant hail damage as well as assorted emergence problems, producers may be facing a difficult decision of whether or not to replant. Although we have yet to receive any widespread storm damage, there have been some issues with early planted crop emergence. Because of this it is important to inspect fields to determine if a replant is warranted. Replanting decisions vary from producer to producer and many times county to county. Many times it is important to get a handle on the root health of the plants, stem bruising, terminal damage, etc. A departmental publication containing information to assist producers in the difficult replant decision making process is available on the Lubbock website ([“Making Replant Decisions in Cotton”](#)) and on the 2011 Resource DVD (link in previous paragraph).

## **Tank Cleanout Concerns**

This time of year, producers may request personnel from Texas AgriLife Extension or Research to make field inspections concerning hormone-type herbicide damage on cotton. Typical phenoxy herbicide symptomology includes “strapping of leaves.” Based on field research conducted by Dr. Wayne Keeling, the severity of yield decrease is related to the actual dose and the crop stage. Severe damage incurred when the crop begins to fruit is more likely to reduce yield than when the crop is younger with less severe damage. Doses of sufficient level to continue “strapping” of newer leaves for weeks after application will probably significantly negatively impact yield.

Producers should be aware, especially in light of the “tank and hose cleaning ability” of some of the newer herbicides, that phenoxy residue in sprayers can be a real problem. **My suggestion for our growers is that tanks, hoses, and sprayers which are used for applying phenoxy type herbicides be dedicated SOLELY to that purpose.** If producers are unable to purchase separate tanks, hoses and/or sprayers, then it is imperative that several issues be addressed. Do not leave herbicides in tanks for an extended period of time. It is best to use “chemical resistant” hoses. **Replace hoses when changing out tanks or using a large sprayer which has been spraying any other products besides those labeled for cotton.** The last thing a cotton field needs is for a phenoxy material (even at low concentrations) to get “pulled from the tank or hoses” and get sprayed on cotton – especially those fields with high yield potential (i.e. subsurface drip or high capacity pivots). If multiple herbicides are used in the sprayer, then I suggest that producers purchase various tank cleaning agents from their dealers and follow the directions, including cleaner concentration, religiously. If a tank/sprayer is to be used on cotton, I suggest that the tank be flushed out with clean water and the appropriate tank cleaner be mixed at the appropriate

concentration. The producer should then spray the cleaning solution through the booms and nozzles. Leave the booms in a horizontal position and let the cleaning solution sit in the tank at least overnight. **Replace hoses when changing out tanks or using a large sprayer which has been spraying any other products besides those labeled for cotton.** This might help reduce some anxiety over phenoxy damage later. It doesn't take very many lost bales of production to pay for an additional tank and hoses or smaller sprayer.

[“Cleaning Field Sprayers to Avoid Crop Injury”](#), is an excellent publication on tank cleanout. This publication has good information concerning herbicides, recommended cleaning solutions and sensitive crops. MSK

# FOCUS on South Plains Agriculture

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[Water Management Website](#), [TAMU](#), [Irrigation at Lubbock](#), [IPM How-To Videos](#), [Lubbock Center Homepage](#), [Texas AgriLife Research Home](#), [Texas AgriLife Extension Home](#), [Plains Cotton Growers](#)

## County IPM Newsletters

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