Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
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Considerations for Cotton Planting and Early Season Growth

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The early part of cotton season, specifically the first two to three weeks, is a critical period to monitor growth and development of the crop. It's key to understand the interactions between environmental conditions, pest pressure, and crop protection products, and how these factors impact the progress of the crop. Regardless of variety selection or area of the state, avoiding maturity delays is key to ensure an optimal fruiting window and fiber quality, as well as a timely harvest.

Two of the primary drivers behind the growth of cotton throughout the season are water and temperature. Development of the crop is often predicted or monitored through the use of heat units, referred to as DD60s for cotton. Daily heat unit accumulation in cotton is based on daily high and low temperatures, with a certain amounts of heat units required to get to major benchmarks in crop's development, such as squaring, flowering, and open boll. Heat units will be discussed in more detail in an upcoming fact sheet.

While warm days certainly signal the onset of planting season, be careful to monitor overnight lows as even daytime highs of 90° F can result in slow growth rates if overnight lows drop to 50° F or less. Timing planting around optimal temperatures, which are high's in the low to mid 80's or higher, overnight lows in the 60's or above, will ensure that the plant accumulates the needed daily DD60s, or heat units, for rapid growth and emergence. The general rule is 50 – 60 heat units are required after planting to achieve emergence and accumulating 6 – 10 heat units per day during the 5 – 7 day period after planting is considered favorable conditions.

In some long season areas of Oklahoma moisture drives planting decisions more so than temperature particularly for dryland producers. Although cotton doesn't require much water for adequate growth early in the season, planting into good soil moisture is essential to ensure rapid and uniform germination and emergence. It is more beneficial to plant into a moist seed bed where water can be readily imbibed by the seed, rather than into a dry seed bed and waiting until there is enough moisture to initiate germination. This will decrease the chances of uneven or delayed stand establishment. In dryland scenarios the combination of ideal soil moisture and temperatures in some years is rare. Thus, a balance must be met between these two factors to provide the best possible conditions for early season growth.

Conditions that favor uniform emergence and rapid early season growth are not only critical to establishing a uniform stand, they will also mitigate additional stresses the seedlings will be exposed to. After emergence there is a need to maintain rapid growth

and minimize factors that will inhibit the crop's development. Due to cotton's lack of early season competitiveness, eliminating weeds that out-compete the crop for water, sunlight, and nutrients is a priority. Many of the at-plant and post-emergence herbicides that are used in cotton result in slight injury to seedlings and young plants. While this injury alone is rarely severe enough to be detrimental, and the weed control that is achieved is more valuable, care must be taken not to compound stress. This consideration primarily comes up when early season insect pests are present, specifically thrips. Thrips feed on the leaves of young cotton plants and if not controlled will stunt growth and result in delayed maturity. Cotton is most susceptible at to thrips at early growth stages, from the cotyledon stage to the 4-5 leaf stage. Warm temperatures and adequate soil moisture promote rapid growth that aid in the plant's ability to grow out of these stressed conditions, while cool temperatures or herbicide injury prolong the amount of time the plants remain susceptible to thrips. Actively scouting for thrips during the early part of the season is recommended, especially if other hosts for thrips are nearby or there's a history or thrips feeding.

Planting treated seed is a commonly recommended practice in Oklahoma to address a variety of early season concerns. For areas that are prone to thrips infestations, an in-furrow granular or liquid insecticide can be used to provide a longer window of control than a seed treatment alone. If seed treatments are used alone and an over spray of an insecticide is deemed necessary after scouting, an application around the 1st true leaf stage (Fig. 1) is ideal for overlapping the control provided by seed treatments and will typically allow the plants to reach the 4 – 5 leaf stage (Fig. 2) at which point the crop has reached a size that is no longer susceptible to a significant injury. Often this application may accompany an early-post herbicide application; however, **be sure to check the label to ensure the insecticide selected is approved for tank mixing with the herbicides being applied**. There are numerous options for in-furrow and/or foliar applied insecticides with thrips activity, including products with the active ingredients acephate, dicrotophos, dimethoate, disulfoton, imidacloprid, and spinetoram.

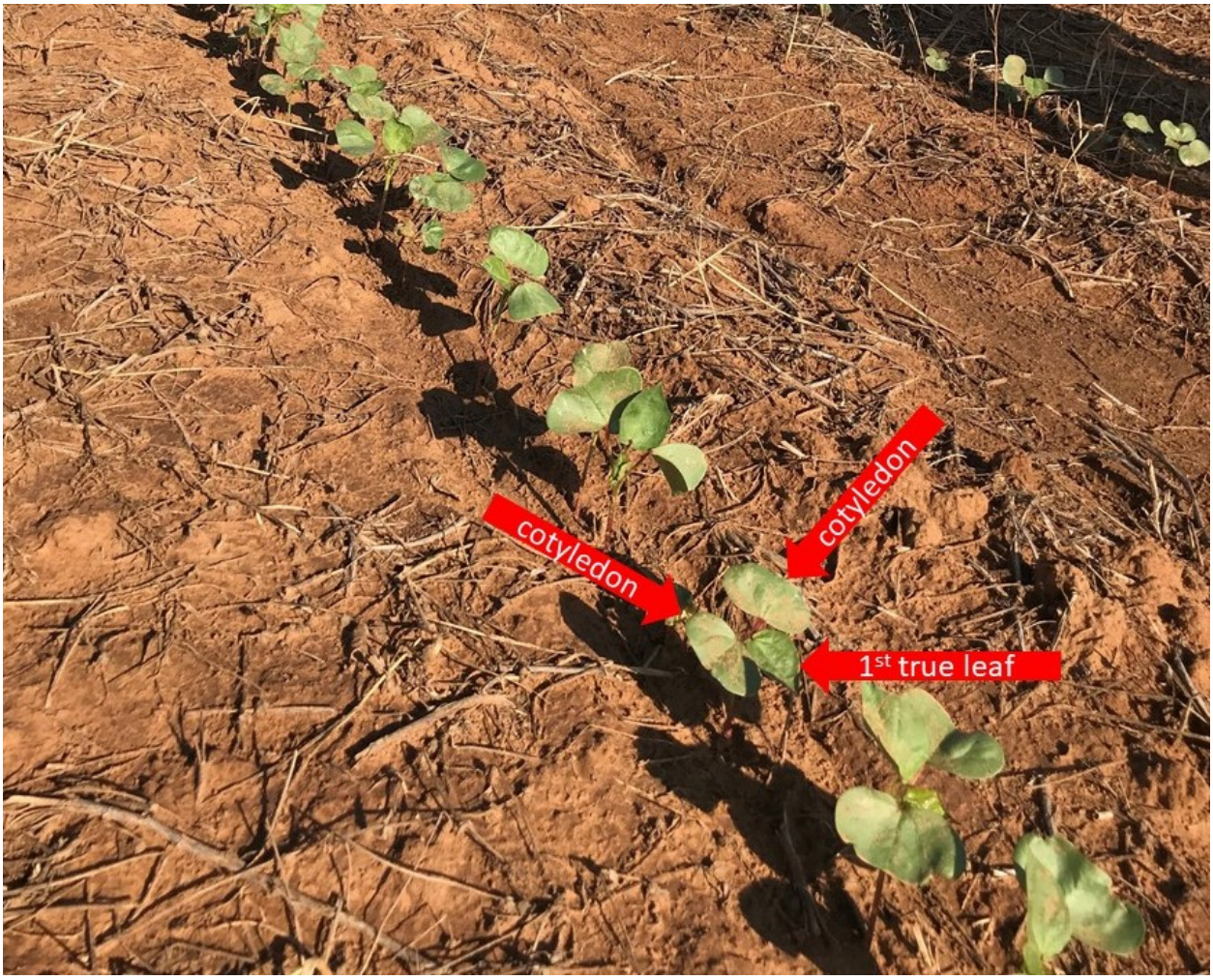


Figure 1. Cotton at the 1st true leaf stage.

Figure 2. Cotton at the 4 – 5 leaf stage.

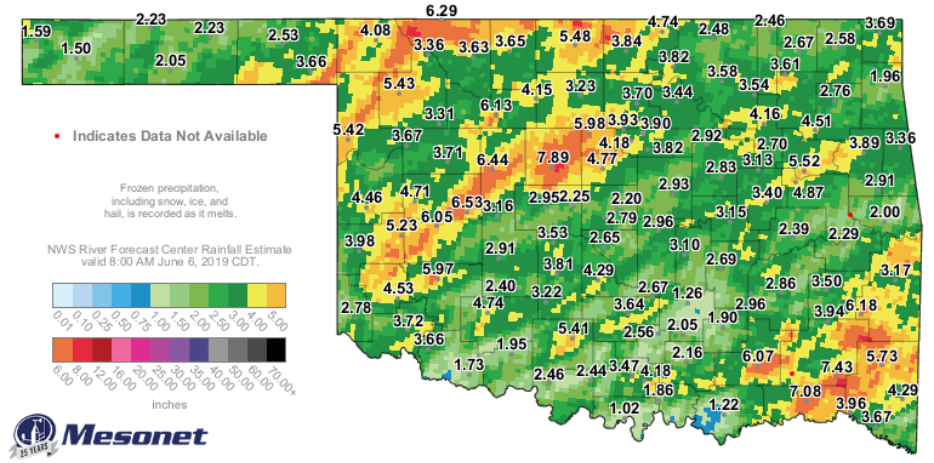
This Fact sheet can be downloaded at:

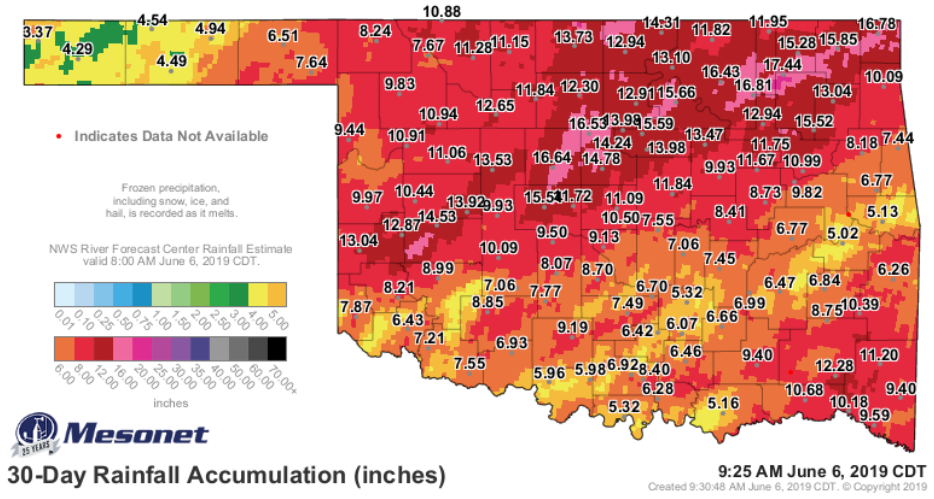
http://factsheets.okstate.edu/documents/pss-2187-considerations-for-cotton-planting-and-early-season-growth/

2019 Current Situation

Rain continues to fall across most of the state. However enough drying periods have occurred in some areas to get the crop in. Hopefully the rest of the state will be able to get the crop in.

Every field needs to be evaluate at time of planting to ensure that good emergence occurs. This is critical because of seed availability and the shorter planting window replanting may not be an option.





Crop Conditions

Cotton emergence has occurred in some areas (mostly our southern counties). Unfortunately the Thrip population has found these emerging fields. This is critical time for Thrips control, please refer back to Cotton Comments Volume 9 edition 2 April 25, 2019 for Thrips control issues. Control sprays is being widely applied in the southwest corner of the state. Grasshopper were detected in one field in Jackson County. No additional pest have been reported.

After emergence scouting of the field must start and continue on a weekly basis until termination of the crop.

Cotton Inc. Enhanced Variety Trial on Clint Abernathy farm, Altus, Oklahoma June 5, 2019, crop stage 2nd Truleaf.

White-lined Sphinx

This office has been getting a lot of inquiries about “hornworms” in cotton. The larvae is **White-lined Sphinx.**

These pest generally does not cause economic damage to cotton unless in ***massive*** numbers. They will occasionally feed on a cotton plant but prefer purslane. If any question please call your local extension office.

2019 Dicamba Training

Applicators planning to use specific dicamba herbicides labelled for the Roundup Ready Xtend Crop SystemTM for soybeans and cotton must complete U.S. Department of Agriculture-approved dicamba training before spraying these products this year.

“Whether you’re a certified applicator or driving the application equipment you have to be trained,” said Todd Baughman, Oklahoma State University Cooperative Extension summer crop weed specialist. “Even if you went through training last year, you’re still required to go through the Oklahoma Department of Agriculture, Food and Forestry approved training this year.”

Only the ODAFF, Extension and the three major manufacturers – Monsanto, DuPont and BASF – are authorized to provide the training. To be certified please contact your local extension office.

Oklahoma Boll Weevil Eradication Organization

Brenda Osborne, Director of the Oklahoma Boll Weevil Organization, based at Altus, provided the information below. Eradication of the boll weevil across most of the U.S. Cotton Belt, and in the state has been very successful and is a major contributing factor to the continued profitability of cotton production. It has been a long, difficult, and expensive task to rid our state and most of the Cotton Belt of this invasive species that for such a long time negatively impacted our production. Since 1998 the producers of Oklahoma has spent **$37,218,599** to eradicate and provide a maintenance program.

There is still a difficult fight with this insect pest in south Texas, and we all need to do our part in keeping this pest from resurfacing in our state.

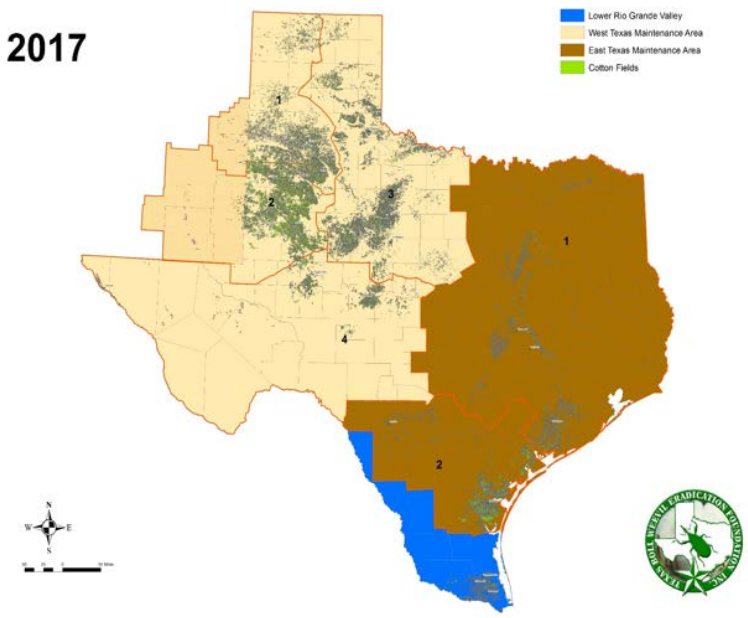
Cotton acres for past five years

Year	Acres[1]
2014	237,523
2015	216,678
2016	299,302
2017	568,434
2018	756,397

[1] Oklahoma Boll Weevil Eradication Organization

OBWEO is preparing for the upcoming 2019 cotton season. It is our responsibility to ensure the continued success of this program. With all the talk of a significant increase in cotton acres, there are some important issues with respect to OBWEO that you need to be aware of. If you have been growing cotton for the past 3-5 years, we know where those fields are located. However, if you are a new producer or have not grown cotton in several years, we need you to provide the legal descriptions of these new cotton fields. There is a Boll Weevil Assessment for harvested cotton acres. The current assessment is $2.50 per harvested acre. This assessment is reviewed annually. The trapping density this year is one trap per 640 acres. In areas where planted cotton acreage density is high, not all fields will actually have a trap near it. In other areas that are more isolated, each field will need a trap.

Cotton harvesting equipment entering Oklahoma from two eradication areas in Texas has to be certified as boll weevil free prior to movement into our state. Please contact t equipment departure from these two areas. This will allow TBWEF to inspect the equipment. A USDA-APHIS phytosanitary certificate is issued and is required before equipment can be transported from these areas. These ONLY include the Lower Rio Grande Valley Eradication Zone (blue area on the map below) or the East Texas Maintenance Area (brown area on the map below). This is critical to meet USDA-APHIS requirements and prevent the re-infestation of boll weevils into eradicated areas. It is illegal to move non-certified cotton harvesting equipment from these areas into the state of Oklahoma.



Texas Boll Weevil Eradication Foundation: 325-672-2800
After Hours and Weekends: 325-668-7361

Contact John Lamb at the Frederick office at 580-335-7760 or cell 580-305-1930 for the following counties: Tillman, Cotton, Comanche, Atoka, Bryan, and Stephens.

Contact Brenda Osborne at the Altus office at 580-477-4287 or cell 580-471-79632 for all other counties.

Harvey Schroeder Executive Director Oklahoma Cotton Council cotton quote of the week.

"*A compromise is an agreement whereby both parties get what neither of the wanted*."

- UNKNOWN

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