



# Pest Management News Runnels-Tom Green Counties



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## Inside this Issue

General Situation 1

Soil Temps for Planting 1-2

Upcoming Events 2

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## General Situation

The Concho Valley has more soil moisture for this time of year than we have had in several years. This should really help the wheat finish with good bushel weight and get the grain sorghum started strong. Speaking of grain sorghum, winged sugarcane aphids have been found in Hill County in Johnsongrass where they overwintered. It is uncertain to know what sugarcane aphid populations will do in our area this year but I will keep you posted with any news in our area as the season progress. Most seed treatments should provide protection for at least 4 weeks, but varying environmental conditions (rain, soil moisture, etc.) may affect their potency.

Following on the heels of a later planting season last year and weather prediction of a dry weather pattern during the summer/fall, there has been some talk about planting cotton in the Concho Valley as soon as the fields are dry. With good soil moisture now, there are some benefits to planting early (May 1) and using our available moisture. However, there are also benefits of planting later (June 1), which is closer to our more traditional planting date. Planting early you can take advantage of the moisture we have now for stand establishment and early-season crop development, stronger irrigation water and getting the crop out earlier in the season. On the flip side, by waiting until May 15-June 1, you take advantage of quicker and higher germination and hopefully finishing the crop with our typical late August-early September rains. If we knew what the weather was going to do, this decision would be much easier, unfortunately nobody knows what the weather will bring.

The take home message would be hedge your bets and try a little of both. Don't go all in one way or another and spread your crop out. Visit the <http://cotton.tamu.edu/> for Extension's variety results and talk to your seed rep, evaluate the varieties you are wanting to plant and see what planting date fits the best. Below is a publication that Dr. Randy Boman and Dr. Robert Lemon produced. You can also find it online at: <http://cotton.tamu.edu/General%20Production/scs-2005-17%20Soil%20Temp.pdf>

You can also find soil temperatures at the Texas Tech Mesonet website (weather station at Wall): <http://www.mesonet.ttu.edu/>

Josh Blaneck, CEA  
Tom Green County

## Soil Temperatures for Cotton Planting

By: **Randy Boman, Ph.D., Associate Professor and Extension Agronomist-Cotton**  
**Robert Lemon, Ph.D., Professor and Extension Agronomist-Cotton**



Cotton can overcome many stresses if it has adequate soil and air temperatures for plant growth. However, growers in most regions of Texas plant before the onset of optimum temperature conditions to take advantage of early season moisture. Growers in the eastern part of the state prefer earlier plantings to avoid late season harvest problems, and growers in the western regions plant early in an attempt to lengthen their growing season. However, it is best to plant according to soil temperature - not the calendar. If planted too early, a crop may suffer stand loss and cold temperature stress, which reduce yield potential.

The seed is known as a "resting" structure. It is dehydrated, largely composed of storage tissue, and surrounded by the impervious seed coat. Basically, the seed is in a state of suspended animation, mainly due to a lack of water and oxygen. The process of germination begins with the absorption of water (imbibition), the reactivation of metabolism, and the initiation of growth. The seed contains an embryo. At one end of the embryo is the radicle, which will become the root and at the other end is the plumule, which will form the stem and leaves. The cotton seed also has two cotyledons, or seed leaves. These cotyledons are storage tissues and provide energy for the developing seedling.

(Continued on page 2)

# Pest Management News

(Continued from page 1)

## Soil Temperature for Cotton Planting—Continue from Front Page

Cotton seed germination is favored by high soil oxygen concentration, adequate soil moisture, and soil temperatures above 64°F. Based on work conducted by USDA-ARS researchers at Lubbock, the cotton plant requires more than 100 hours above 64°F at the seed level to emerge. Germination can begin when the mean daily temperature is 60°F at seeding depths, but growth will be slow at these temperatures.

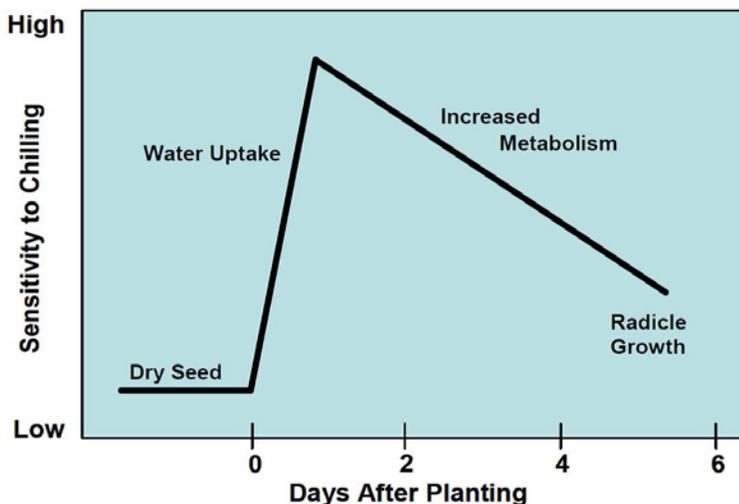
The optimum planting target is to have a 10-day average soil temperature of 65°F at the 8-inch depth. If poor quality seed is planted, then 70°F may be a better target. This volume of soil underneath the seed can act as a potential short-term heat buffer to moderate seed zone temperatures if cool spells do occur after planting. This is due to the fact that soil temperatures in the seed zone will lag air temperatures by about 3-5 hours. At a minimum, soil temperatures in the seed and root zone should exceed 60°F and the five day forecast for daytime maximum temperatures should exceed 80°F. Additionally, nighttime minimum temperatures should be forecast to be above 50°F for the following 5 days.

Cotton is a tropical plant and during the critical germination period soil temperatures below 50°F can cause chilling injury to germinating cotton. Chilling injury can result in malformed seedlings, loss of the taproot, reduced vigor and stand establishment, and the increased likelihood of seedling disease problems.

Emergence will generally occur after accumulation of 50-80 DD60 heat units after planting. Planting should be delayed if the 5-day forecast predicts the accumulation of less than 25 heat units after planting. Due to cool spring conditions on the High Plains, the long-term average air temperatures and corresponding DD60s for various dates in May are listed below:

Day	High	Low	Average	DD60s per day (= average temp - 60)
May 1	79	51	65	5
May 10	82	54	68	8
May 20	84	57	70.5	10.5
May 30	87	60	73.5	13.5

**Cotton Sensitivity to Cold Temperatures During the Germination Period**



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When considering long-term average temperatures for May, one should consider waiting until after at least May 1st to plant. By delaying planting until May 10th, at least 8 DD60s per day would result in a total of about 40 over the next five days.

## Upcoming Events

### Concho-McCulloch County Annual Wheat Tour

**Thursday, May 5<sup>th</sup> in Millersview:** The Annual Concho-McCulloch County Wheat Tour will be Thursday, March 5<sup>th</sup> at the Millersview Gymnasium -12199 County Road 6009. The day will transition from the gymnasium at 3:20 p.m. to the wheat variety test plots at Millersview, TX. Registration will begin at 8:00 am with program at 9:00. CEU's will be offered. There is no charge for the event but an **RSVP by April 29** is requested to ensure an accurate meal count. More info or RSVP by contacting the Extension Office in Concho County at 325-732-4304 or McCulloch County at 325-597-1295.