

NW Panhandle Crop Notes
Dennis Coker, Ph.D.
Extension Agent -Agronomy
Dallam, Hartley, Moore & Sherman Counties

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Early Challenges at the Beginning of the 2020 Cotton Production Season in the NW Panhandle of Texas

Is the early season a critical time for cotton production in the Texas Panhandle?

Short answer is yes, every season.

1. Field weather conditions (air and soil temperatures, precipitation amounts and frequency, wind speed and solar radiation) and management play a large role. There is not much a grower can immediately do about climate, but matters related to management (eg. irrigation timing, date of planting and variety selection among a host of other things) are within reach of being manipulated or altered for a better outcome.
2. How the cotton production season begins whether due to management or weather sets the stage and tone for what happens later. Timely, efficient use of resources ensures early progress during vegetative development stages which eventually feed into the reproductive stages of a cotton plants life cycle. Timely progress through all stages of growth is required to meet yield goals and to generate fiber that has high quality.
3. From a management standpoint, the overall approach to cropping systems in previous seasons and winters in between, will affect early-season cotton emergence and growth. Damage to seedlings can have greater impact than a similar type of damage to a larger, more fully developed plant later in the season. We will visit in more detail and highlight some examples of the early protection that cotton needs further along in this discussion.

What early-season, management opportunities lie within reach of producers growing cotton in the NW Panhandle of Texas?

1. Select varieties and genetics that perform well in your environment. Also, be aware of warm and cool germination test results for seed lots which are a good indication of how viable the seed are and what level of vigor can be expected for germination and seedling emergence stages. Pay attention to information generated from nearby cotton Replicated Agronomic Cotton Evaluation trials as well as other University-based testing programs. Generally, the closer that field studies are conducted to your growing area, the more relevant the information is.
2. Monitor weather forecast of air and soil temperatures before planting. Soil temperature of 65 F is considered good conditions, 57 F getting down into the marginal range and 50 F marks poor

soil temperature conditions. Recommended to track accumulation of growing degree days at planting time. This is based on 60 F minimum threshold value for cotton and referred to DD60's. Best if accumulated DD60's or heat units for your area reach 25 or greater based on a 5-day period forecast near the target day to plant.

3. By time of planting, it is important to begin with adequate soil moisture near the soil surface and throughout the soil profile. Sufficient soil moisture will promote good seed to soil contact with the planter operation. Certainly, a person can discern a lot by visual observation and feel method for soil moisture conditions but there are sensors available that can help growers to know season long what the status of soil moisture is below the soil surface. Calibrated, soil moisture sensors are particularly worthwhile when it comes to making decisions about irrigation amounts and scheduling. Contribution of any precipitation will be accounted for in soil moisture measurements.
4. Establish, maintain and plant directly into good residue cover. For example, strip-till systems work well in this area. Three major pluses (and there are others), **1.** Residue helps to shade the ground, hold moisture, and reduce evaporative water demand all season long. **2.** Residue greatly lessens the negative effects of wind (e.g. yesterday's 75 mph gusts) and water erosion. **3.** Residue serves to protect cotton seedling from harsh environmental conditions that can delay development by damage to plant foliage or even killing the plant due to terminal bud damage. Abrasion due to movement and impact of soil particles (especially sand) is probably one of the biggest issues for growers in the Panhandle of Texas.
5. Know the status of soil nutrient supply by soil testing early and adjust for pending deficiencies early as opposed to later in the season. A grower really needs to know what is going on with not only soil chemical properties and macro nutrients but also micronutrients.... they all support the development of yield and best fiber quality.
6. Credit available, soil nitrate-nitrogen (N) to two feet then simply top off applied N amounts according to soil test recommendations and any N previously delivered in a phosphate or other fertilizer blend.
7. Monitor progress as well as pest pressures (weeds, insects, and diseases) and any other possible pending issues. Utilize available tools that can provide relevant information to plug in and use for better management decisions going forward.

How much of a plant stand is needed or adequate for profitable cotton production in the NW Panhandle of Texas?

1. What are the producer's goals in terms of crop yield and fiber quality?
2. Does grower have some flexibility to manage around delayed maturity and less uniformity across fields if stand has been reduced by adverse environmental conditions?

3. Whether or not the plant stand is suitable will depend to some extent on varieties planted.
4. *Plant populations can vary and still deliver acceptable yield and fiber quality. I quote from a recent AgriLife Extension publication, "The cotton plant has an extensive capacity to adapt its branching and other growth patterns to accommodate changes in plant population". Same publication indicated that the most common recommendation for final cotton plant populations was around 33,000 plants/acre, which authors considered a 'moderate' plant population.
5. Weather conditions ahead can reduce or increase economic risks of crop investment until end of the season.
6. Irrigated or dryland production system? e.g. In an irrigated situation, yield produced needs to offset cost of pumping groundwater and other inputs despite a reduced plant population.
7. Consider row spacing involved. 30-inch rows are common, but 20- and 40-inch rows do exist in the NW Panhandle. Intra-row spacing is greater with narrow versus wide rows. Narrower row spacing can facilitate earlier canopy coverage, thus increasing the potential to maximize photosynthetic output which contributes to yield and fiber quality.
8. Consider adjustments in pest management (weeds, insects, and diseases) due to potentially more exposed ground surface, especially early in the season.
9. Follow AgriLife Extension guidelines and information generated from result demonstrations out in the various counties. Most of the AgriLife Extension Service reports, fact sheets, and production guides are available 24/7 online through county websites, AgriLife Research and Extension Center websites as well as at www.agrilifeextension.tamu.edu/library

That is all I have for today, thank you for reading. Until next time, be safe out there.

Don't give up...the rain showers will eventually get here.