WINDSTAR GINS

Edcot Gin – Edmonson, TX
Landon Kidd, Manager
(806) 864-3335

Tule Creek Gin – Tulia, TX
Jaime Subealdea, Manager
(806) 627-4287

Johnson Gin – Silverton, TX
Daniel Jenkins, Manager
(806) 823-2224

Top of Texas Gin – Hereford, TX
Billy Sam Borchardt, Co-Manager
Steven Birkenfeld, Co-Manager
(806) 258-7466

D&J Gin - Lockney, TX
Phillip Kidd, Manager
(806) 652-3351

Adobe Walls Gin – Spearman, TX
Jerrell Key, Manager
Doug Kennedy, Assistant Manager
(806) 659-2574

Lonestar Gin – Pampa, TX
Carey McKinney, Manager
(806) 665-0677

Cotton Insights Newsletter

A service provided by Windstar, Inc. affiliated gins.

May 5, 2025

Randy Boman, Ph.D.
Windstar, Inc.
Cotton Agronomics Manager
(580) 481-4050
rboman@windstarinc.com
www.windstarinc.com

2025 Planting Season is Upon Us

Winter and spring precipitation has been variable across the area, but recent and continuing rainfall has been a blessing for much of our service region. It is always good to review the fundamentals and importance of several factors affecting early season success.

Stand Establishment Concerns

It is imperative that growers recognize that cotton seedlings can be damaged by cool, wet conditions. The cotton seedling derives its energy from the oil contained therein until the cotyledons get unfurled and photosynthesis begins.

The crop may never fully recover if damaged, and may become a target of opportunity for seedling diseases. It may continue to have poor vigor for much of the growing season, and by the time it recovers, there may not be enough growing season left for good yields.

Final planting dates for insurance purposes are there for a reason, and early fall freezes can wreck a late planted crop. In our region, the goal is to plant into good soil moisture with good seed-to-soil contact, good temperatures, and get a good, healthy stand. Planting conditions can change rapidly and awareness of these potential changes can be critical. Watching forecasts is critical.

Earlier planting can be optimal, but good soil temperatures and the right environment should be present. Otherwise, poor seedling emergence and plant health issues will likely be encountered.

If planting in cooler and wetter conditions, make sure to use the highest seed quality possible. This means checking the cool germination data on each of your seed lots and planting the most vigorous ones under challenging conditions.

Key Points to Consider

- Cotton's developmental threshold is 60 degrees F, so there is minimal physiological activity including germination processes below that temperature. The optimum soil temperature for germination is near 85 degrees.
- Seed zone temperatures of less than 50 degrees can cause chilling injury while temperatures of 41 degrees can damage or kill the seedling. For photos of this injury see below.
- The greatest risk of chilling injury is the first few days after planting.
- Typically, smaller seeded varieties tend to have lower vigor. Different seed lots within individual varieties can be highly variable with respect to seed size. Watch low seed vigor issues, especially with the small seed size of many newer varieties (e.g. >5,500 seed/lb, check seed bag). For a given variety, seed lots with larger seed (fewer number of seeds per pound) may be more vigorous than those with smaller seed (larger number of seeds per pound), but this can vary and depend upon various other factors.
- "Advertised seed size" for a particular variety may not necessarily coincide with what's being sold and delivered to the farm.
- Producers should (at a minimum) take photographs (with phone) of all seed lots received, and track where planted for future reference: lot number, source, seed/lb and field where planted.
- Obtain high quality seed with good to excellent cool germination test data (minimum 60%, but preferably 70% or higher). This test is conducted in a germination chamber set at 64 degrees for 7 days, with seedlings with a 1.5 inch hypocotyl and root counted as germinated. The result indicates the percentage of strong, vigorous seedlings.
- Sort seed lots by cool germination test data and determine planting sequence. Start planting with higher vigor seed under cooler temperatures, end with lower vigor seed under warmer temperatures.
- Goal is a favorable 5-day forecast with minimum air temperature not less than 50 degrees, and hopefully with maximum air temperature about 80 degrees or more (see table next page).
- Mid-morning soil temperatures in the rooting zone should exceed 60 degrees at 6-inch depth or 68 degrees at the 2-inch depth.
- Plant into a firm, moist seedbed with excellent seed to soil contact.
- For best emergence plant not more than 1- 1.5 knuckles deep.
- Use a proper seed drop rate. The final PLANT population will depend upon many field specific factors.
- The acceptable final PLANT population is about 26,000 to 52,000 plants per acre. For 40-inch rows this is around 2-4 PLANTS per row-ft. For 30-inch rows, this is about 1.5-3 PLANTS per row-ft.
- Target the lower end of this range for dryland and the higher end for irrigated.
- Current seed treatments can increase seedling survivability during stand establishment if environmental and disease pressures occur.

- Seedling survival rate may be 50% or lower during cold, wet periods, but 80% or greater if high-quality treated seed are planted into warm soils and severe environmental stresses are not encountered. Seedling survival rate of about 50% to 80% can generally be estimated based on previous research trials.
- Thinner stands typically result in more harvesting difficulties.
- Growers must have faith in the planter, its setting, seed quality, and weather factors to get from the actual SEED drop rate planted to the targeted final PLANT stand.
- No in-furrow fertilizer. Cotton seedlings are delicate and we already have a challenge getting them emerged. Most in-furrow fertilizers increase osmotic stress on seedlings.

Planting Outlook for Various Five-Day Predictive DD60 Accumulations

Predictive DD60 Accumulation for Five Days Following Planting	Planting Outlook
<10	Very poor
11-15	Poor
16-25	Marginal
26-50	Good
>51	Very good

Source: Cotton Physiology Today, Planting and Replanting Decisions, April, 2007

- For a copy of this publication, click on the link below: http://www.cotton.org/tech/physiology/cpt/variety/upload/Planting-and-Replanting-Decisions-2007.pdf
- For more information on seed quality, soil temperatures and other issues see the vintage Cotton Physiology Today - Seed Quality and Germination, March, 1990, click on the link below: http://www.cotton.org/tech/physiology/cpt/variety/upload/CPT-Mar90-REPOP.pdf

Chilling Injury Photographs

- Note root tip meristematic tissue dead, short, thickened radicles.

- In the photograph below, the three seedlings on the far left were subjected to chilling while the three on right were not.
- Note interruption of taproot growth with subsequent lateral root development.

- Chilling injury photos were sourced from: http://www.cotton.org/tech/physiology/cpt/variety/upload/Planting-and-Replanting-Decisions-2007.pdf
- For more detailed information concerning chilling injury and conditions which contribute to this phenomenon see the above listed publication.

Abnormal root development in a 2019 field near Etter, TX attributed to chilling injury.