Cotton variety trial results available for High Plains, Rolling Plains

With variety selection the most important decision made during the year by cotton farmers, Texas A&M AgriLife Extension Service agronomists in the High Plains and Rolling Plains have variety trial results to share from 2016.

Dr. Jourdan Bell in Amarillo and Dr. Emi Kimura in Vernon recently released the results of their large plot, on-farm, replicated cotton variety trials, which are conducted annually to assist Texas cotton producers in remaining competitive in these regions.

“This approach provides a good foundation of information that can be utilized to assist farmers with the variety selection process,” Kimura said.

The two agronomists said unlike herbicide or insecticide decisions that can be changed during the season to address specific conditions and pests, variety selection is made only once and dictates the management of a field for the entire season.

Across the state, AgriLife Extension agronomists are advising that variety decisions be based on genetics first and transgenic technology second, focusing attention on agronomic characteristics such as yield, maturity and fiber quality when selecting varieties.

In the High Plains, cool temperatures and late spring precipitation prevailed through the 2016 cotton planting season, Bell said. As a result, most locations were planted with good soil moisture.

While soil temperatures at all locations were above 60 degrees at planting, cool, wet conditions slowed germination at all locations except in Hartley County where the sandier soil likely resulted in warmer soil temperatures and more uniform emergence, she said.

“Cool, wet conditions coupled with low nighttime temperatures resulted in delayed early season development as reflected in the growing degree days accumulated at all locations,” Bell said. “Late July and early August were marked by several weeks with daily highs that reached or exceeded 100 degrees, causing some stress during the peak bloom period.”

She said September brought much**–**needed precipitation and cooler temperatures; however, this also resulted in secondary regrowth at several locations requiring aggressive plant growth regulator management.

Lint production was greatest at the Deaf Smith, Hartley and Sherman county locations for all varieties. Production at Parmer County was affected by verticillium wilt that resulted in premature defoliation especially for non-tolerant varieties. At the Parmer County trial, all plots were rated for defoliation damage, and the greatest yields were achieved with tolerant varieties such as Phytogen 243 and Stoneville 4747GLB2.

Verticillium was also found at the Sherman County trial, but not at yield-limiting levels that warranted ratings, Bell said. Lint production at the Swisher County trial was affected by a late planting.

Detailed yield and quality results are presented for all High Plains locations at [http://bit.ly/2l5oloq](https://urldefense.proofpoint.com/v2/url?u=http-3A__bit.ly_2l5oloq&d=CwMDaQ&c=ODFT-G5SujMiGrKuoJJjVg&r=rPbza7uCJI_9Abr6ZVbVUOUhME9w2wc2VolpLsse7ss&m=LRcgZxPmjiD7RqRdL1Y2wX0YRH3o-oR6QnZbjNBP9Ow&s=wOT8R6XGv4DGeoUX4iSCovYxSGOBUZihhlrMYH8xs7U&e=).

There was no specific variety that topped yields at all locations, however, Deltapine 1612B2XF, Fibermax 1320GL, NexGen 3405B2XF and NexGen 3406B2XF all yielded above 1,600 pounds per acre lint at the Deaf Smith, Sherman and Hartley county locations where yield was not limited by disease or late planting.

In the Rolling Plains, trials were planted in 14 locations in 2016, of which 13 locations were harvested, Kimura said. Planting dates ranged from May 10 to June 14, while the harvesting dates ranged from Nov. 10 to Jan. 13, which was a month longer than the 2015 growing season.

“Timing of defoliation is always challenging in the Rolling Plains with the increased chance of rain in the fall to early winter; however, it is critical to maintain high quality fiber,” she said.

Yields for the 2016 Replicated Agronomic Cotton Evaluation, or RACE, trials in the Rolling Plains ranged from 797 pounds per acre in Haskell County to 1,974 pounds per acre in Collingsworth County in the irrigated sites, and from 409 pounds per acre in Kent County to 1,574 pounds per acre in Haskell County in the dryland sites.

Average lint yields across all locations were 1,209 pounds per acre in irrigated sites and 930 pounds per acre in dryland sites. Average yield across locations were 375 pounds per acre

less in irrigated and 346 pounds per acre more in dryland sites than 2015 growing season.

“Dryland cotton production in the Rolling Plains was superior in the 2016 growing season with the good moisture and accumulated heat units,” Kimura said. “We expect to see increasing dryland cotton acreage in the 2017 growing season.”

Tables with the complete RACE trial yield data and fiber analysis for each individual location can be found at [http://bit.ly/2lMJHGU](https://urldefense.proofpoint.com/v2/url?u=http-3A__bit.ly_2lMJHGU&d=CwMDaQ&c=ODFT-G5SujMiGrKuoJJjVg&r=rPbza7uCJI_9Abr6ZVbVUOUhME9w2wc2VolpLsse7ss&m=LRcgZxPmjiD7RqRdL1Y2wX0YRH3o-oR6QnZbjNBP9Ow&s=ngkhU8RCUkKs84QWUMk6wQ4mFMF983Rzs4sxKGBko9A&e=). Data featured in these tables include: statistical analysis of yield, turnout, fiber quality parameters, and loan and gross lint value per acre.

Most locations were ginned with a 20-saw table-top gin with no lint cleaner, Kimura said. This method consistently produces higher lint turnout percentages than would be common in a commercial gin. Consequently, higher turnouts equate to lint yields, which are generally higher than area-wide commercial yields.

For more information, contact Bell at [jourdan.bell@ag.tamu.edu](mailto:jourdan.bell@ag.tamu.edu) or 806-677-5600, or Kimura at [emi.kimura@ag.tamu.edu](mailto:emi.kimura@ag.tamu.edu) or 940-552-9941.