## EFFECT OF COMMON PRODUCTION PRACTICES ON YIELD AND FIBER QUALITY OF LATE PLANTED COTTON VARIETIES IN WEST TEXAS J.E. Woodward K.L Lewis Texas A&M AgriLife Research, Plant and Soil Science, Texas Tech University Lubbock, TX

## Abstract

Planting deadlines for cotton in West Texas vary considerably ranging from 31-May in the Northern High Plains to 20-Jun in the Rolling Plains. In general, planting mostly occurs between 5-May and 6-Jun; however, provisions are in place providing protection on acreage that is prohibited from being planted by the final planting date. This late planting period extends 15 days after the final planting date. Several factors including soil temperature, soil moisture and seedling disease pressure may affect when cotton is planted. Furthermore, adverse weather conditions such as hail, excess wind, extreme drought or flooding may result in the need to replant. Previous studies have shown that delayed planting of the same variety leads to lower yields and often results in reduced fiber quality. Changes in general production practices may be required to ensure even stands, increase earliness and maximize productivity. A field trial was conduced during the 2015 growing season to evaluate the performance of cobminations of 12 cotton varieties (Deltapine 1212B2RF, Deltapine 1321B2RF, Deltapine 1410B2RF, FiberMax 1320GL, FiberMax 2322GL, FiberMax 9250GL, NexGen 3405B2XF, NexGen 3496B2XF, NexGen 3500B2XF, Phytogen 222WRF, Phytogen 333WRF and Phytogen 444WRF) and three seeding rates (3, 4 and 5 seed foot<sup>-1</sup>) under two nitrogen (N) rates (60 and 120 lb ac<sup>-1</sup>). Significant variety and N rate effects were observed for most all variables, as were a number of interactive effects. Lint yields ranged from 876 to 1,478 lb ac<sup>-1</sup> and 750 to 1,363 lb ac<sup>-1</sup> for the low and high N rates, respectively. Under both fertility levels, yields were greatest for Phytogen 222WRF and Phytogen 333WRF. Differences between the two N rates were most pronounced for DP 1321B2F at 339 lb ac<sup>-1</sup>. Yields were similar among seeding rates under both fertility programs, whereas higher yields were achieved under the lower N rate. This may have resulted from increased vegetative growth due to greater N rate, abundant soil moisture and adequate heat unit accumulation during the later part of the season. Greater N decreased micronaire by 0.17 units and led to a 0.2 inch reduction in length. Micronaire values were highest for the early maturing variety Phytogen 222WRF and the early-mid maturing variety NexGen 3500B2XF under both nitrogen levels. Staple length was consistently higher for Phytogen 444WRF and lowest for NexGen 3405B2XF. Abnormally high leaf grades were observed throughout the region as a result of weather conditions experienced during the growing season and differed greatly among varieties. In general, leaf grades were lowest for smooth to semi-smooth varieties, such as NexGen 3500B2XF, NexGen 3405B2XF, Fibermax 1320GL and Phytogen 444WRF. When deducting seed/technology and nitrogen costs differences in net returns ranged from \$265 ac<sup>-1</sup> to \$687 ac<sup>-1</sup> for Fibermax 9250GL and Phytogen 222WRF, respectively. Net returns were lower for higher seeding and N rates. Results from these studies suggest that changes in variety selection and fertility should be made when planting is delayed.