

## **EFFECT OF PLANTING DATE AND CULTIVAR ON YIELD AND FIBER PROPERTIES OF IRRIGATED COTTON**

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### **Abstract**

Early planting often results in chilling stress on young cotton plants, which may affect final yield. Our objectives were to determine the effect of planting date on yield and fiber properties of genotypes differing in seedling vigor and to compare conventional varieties to transgenic varieties for yield and fiber properties at different planting times. The study was conducted in 2000 and 2001 at Clemson University's Pee Dee Research and Education Center near Florence SC. Treatments were planting dates (mid-April, early May, and mid-May) and cultivar (DPL 458, DPL 655, DPL 5415, and DPL 5690). DPL 458 and DPL 5415 have relatively low seedling vigor compared to the other two cultivars. DPL 458 and DPL 5415 are transgenic cultivars and each have both Bt and glyphosate-resistant traits while the other two are conventional varieties. In 2000, cotton reached the pinhead square stage at 50 days after planting (DAP) when planted in mid-April, 42 DAP when planted in early May, and 37 DAP when planted in mid-May. In 2001, plants reached pinhead square stage at 53, 46, and 39 DAP for the mid-April, early May, and mid-May planting dates, respectively. Even though the early-planted cotton was exposed to cooler early season temperatures both years, at the pinhead square stage there were no differences in plant dry weight among planting dates in either year. Also, cultivars did not differ for dry weight at this stage either year. Lint yield of the mid-April planted cotton was lower than cotton planted at the other two dates in 2000. Lint yields (averaged over all cultivars) were 659 lb/ac for the mid-April planting date, 813 lb/ac for the early May planting date, and 924 lb/ac for the late planting date ( $LSD_{0.05}=141$  lb/ac). In 2001, there were no differences among planting dates for lint yield (average yield was 974 lb/ac). In 2000, fiber length was greatest for the early May planting date and least for the mid-May planting date. Planting date did not impact fiber length in 2001. Planting date did not affect fiber strength or micronaire either year. In both years, DPL 655 and DPL 5690 had higher fiber strength than the other two cultivars. Otherwise, cultivars did not significantly differ in fiber properties. All cultivars responded similarly to planting date for yield and fiber properties, regardless of relative seedling vigor.