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Cotton Planting Date and Plant Population Effects on Yield and Fiber Quality in the Mississippi Delta

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Cotton producers in the Mississippi Delta plant in the early spring, but wet, cold weather often develops that may reduce plant population directly or indirectly. Producers must occasionally decide if replanting is necessary. The objective of these studies was to determine the effects of planting dates and plant populations on cotton yield, lint quality, and crop maturity in the Mississippi Delta. Three separate field experiments were conducted during 2001-2005. For the planting date by plant population experiment, seed cotton yields for the late April plantings were significantly greater than for other planting dates, and seed cotton yields for 33 976, 67 952, and 135 904 plants ha⁻¹ were significantly greater than for 16 988 plants ha⁻¹. Yield for late April planted cotton at 16 988 plants ha⁻¹ was significantly greater than or equal to yields for mid-May planted cotton at all plant populations. For the planting date experiment, lint yields and percentage lint were significantly greater for early than late plantings three of five years, and micronaire was significantly greater for early than late plantings each year. For the plant population experiment, lint yields were significantly greater for 33 976 to 135 904 plants ha⁻¹ than 23 782 plants ha⁻¹ in two of four years. There were no plant population effects on lint quality. In all experiments, crop maturity was delayed for late planting dates and low plant populations. Producers in the Mississippi Delta should not replant cotton after mid-May, if the plant population from a late April planting is 16 988 or more plants ha⁻¹.