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LOSSES IN YIELD, QUALITY AND PROFITABILITY OF COTTON FROM IMPROPER HARVEST TIMING

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Abstract

Excessive weathering may diminish cotton (*Gossypium hirsutm* L.) lint yield and fiber quality to the extent that economic losses occur for the producer. The objective of this investigation was to determine the effects of systematic delayed harvest on cotton lint yield, fiber quality and grower profitability. Experiments were conducted in 1998, 1999 and 2000 at the Coastal Plain Experiment Station in Tifton, GA, on a Tifton loamy sand (Fine-loamy, kaolinitic, thermic Plinthic Kandiudults). Treatment establishment began each year when the first open boll was observed in the test area. The treatments consisted of a standard harvest-aid combination applied at weekly intervals over a thirteen-week period beginning at first open boll. Harvest aids were applied to each plot according to its week after first open boll designation and machine harvested two weeks thereafter. After ginning, fiber quality analyses were conducted on lint samples from each plot. Lint yield, fiber strength, fiber length and fiber length uniformity were significantly decreased while short fiber content was significantly increased when harvest aid applications were delayed. Regression analyses indicated the highest adjusted gross income in 1998 occurred when harvest aids were applied at approximately 50% open boll. Lint yields were greater at later application timings in 1998, but price discounts for reduced fiber quality resulted in lower adjusted gross incomes. The highest adjusted gross income in 1999 and 2000 occurred when harvest aids were applied at approximately 77% open boll. Harvest delays during these years reduced profitability by approximately \$74 ha^{-1} $week^{-1}$.