EFFECTS OF MECHANICAL TOPPING OF COTTON WHEN TIMED BY CUTOUT

G. M. Palmer, F. M. Bourland and N.R. Benson
University of Arkansas
Northeast Research & Extension Center
Keiser, AR

Abstract

In the past, mechanical topping has been used as a salvage operation to reduce losses to boll rot. If done at an optimum time, removal of non-productive tops from cotton plants might have several other benefits, including decreased populations of over-wintering insects, earlier maturation, and improved defoliation. Optimum timing might be in synchrony with the end of effective flowering. Within the COTMAN cotton management system, the last effective flower population is identified as when nodes-above-white-flower equals 5.0 (physiological cutout) or when the latest possible cutout date occurs (seasonal cutout). The objective of this study was to determine the effects of mechanical topping on cotton when topping was sequenced by development of the last effective boll population. Tests were conducted at Clarkedale, Arkansas, in 1996 and 1998. Treatments included full-cut (approximate site of last effective flowers) and half-cut (approximately one-half distance of full-cut) at various (0 to 700) heat units after the last effective flowering date. In 1996, topping did not significantly affect yield, and the highest numerical yield was obtained by topping at 350 heat units past physiological cutout. Since seasonal cutout occurred prior to physiological cutout in 1998, topping treatments were sequenced with the latest possible cutout date. All topping treatments tended to decrease yields in 1998. In 1999, we plan to eliminate the full-cut treatment, increase number of locations (to attain contrasting growth patterns and maturity), examine effects on boll size and fiber quality, and evaluate effects on insect populations in a large plot test.

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