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# TWO-YEAR ASSESSMENT OF 2,4-D PREPLANT INTERVALS IN COTTON

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## Abstract

The objective of this study was to determine if the preplant period prior to planting cotton could be safely shortened when two formulations of 2,4-D were applied at 2 rates and at 3 timings.

Acreage devoted to reduced tillage systems is increasing across the Southeast. The use of burndown herbicides to remove cover crops and/or winter weeds is necessary in a preplant management program (York et al., 2001). The use of 2,4-D formulations in the past required at least a 30 day preplant interval from some manufacturers while other companies were vague in planting after applications. To safely shorten the interval of time when applying herbicides prior to planting cotton could save time and allow decision to be made closer to planting time, especially if managing multiple crops. The use of 2,4-D in a short preplant interval to burn down broadleaf weeds would provide an economical and effective component in a stale seed-bed management program.

Field studies were conducted in 2001 and 2002 at 24 locations in the Southeast and Southwest (See authors and locations). Treatments consisted of HM9625-B (an ester of 2,4-D) and HM9720 (an amine of 2,4-D). HM9625 was applied at 13 and 26 oz/a whereas HM9720 was applied at 12 and 24 oz/a. Both herbicides were applied at 21, 14, and 7 days prior to planting (DPP) in 2001 and 28, 21, and 14 DPP in 2002. Data recorded include the node of the first fruiting branch, total bolls on the first four fruiting branches, injury, and yield. Data of 21, 14, and 0 DPP across years were analyzed as a factorial using SAS Proc GLM procedures. Partial results from the ANOVA for the full factorial analysis were performed. A square root transformation of means was performed, but showed no differences from the original means in the analyses. Therefore, analyses and means reflect non-transformed data. Where interactions prevented pooling of data, simple effect means were reported by location. Mean separation was achieved using the Waller-Duncan k-ratio test at the 0.05 level of probability.

Results were analyzed from combined location ANOVA for NAFB, bolls plant-1, plant stand, injury and seedcotton yield. The only interactions that occurred were from injury. Cotton injury evaluations were collected at approximately 3 to 4 weeks after planting. The Missouri location showed as much as 86% early-season cotton injury. Later ratings at most locations indicated cotton had recovered from the early-season injury. Pooled data of seedcotton yield showed no significant differences on yield data collected. Cotton recovery was similar to research conducted by York et al., 2001. Rainfall at the various locations did not pinpoint reasons for early-season cotton injury. No differences in yield data indicated the cotton overcame any injury sustained from the 2,4-D applications, regardless of formulations, rates, and timings.