

**USING NODES ABOVE WHITE FLOWER TO
SCHEDULE COTTON DEFOLIATION:
A REGIONAL PROJECT**

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Abstract

Many variables determine the optimum defoliation timing for cotton grown in different areas of the US. Research is needed to determine the effect of defoliation timing using COTMAN on cotton yield and fiber quality. COTMAN uses heat unit (HU) accumulation beginning when nodes above white flower reaches 5.0 to time defoliation, and past research had indicated the crop was safe to harvest at ~850 HU. Objectives of this study are to improve the use of nodes above white flower (NAWF) for scheduling defoliation in Tennessee (TN), Georgia (GA), Louisiana (LA), and Coastal Texas (TX), and to determine the effect of defoliation timing before and after 850 HU at these locations. The crop was managed according to the local Extension recommendations for each locale, and the crop was monitored using COTMAN. Texas had multiple locations each year. Harvest-aid timing treatments targeted at 650, 750, 850, and 950 accumulated HU at each site, and additional timings were optional for each coordinator. Plots were four rows wide with treatments arranged in a randomized complete block design with four replications. The plots were so arranged at each site so individual plots could be machine harvested without affecting the other plots. Each site used a mixture of Dropp, Def, and Prep for defoliation and boll opening with rates depending upon the local conditions. Plots were harvested 14 days \pm 1 day after treatment application. Seedcotton from each plot was weighed and a grab sample was taken from each plot for ginning and fiber analysis. Across location strength and length were not generally associated with harvest-aid timing, however leaf values decreased with increasing HU accumulation. In LA, lint yield increased with increasing HU to 1150 and 850 in 1998 and 1999, respectively. In GA in 1998, yield increased until ~950 HU then began to declined. Yield in TN continued to increase both years through 900 HU, although the increase above 850 was small. In Tx in 1998, yield began to plateau by 800 HU, but in 1999 yield continued to increase above 900 HU. Micronaire values across locations tended to increase with increasing HU linearly, although the range of values from each location and year was strongly influenced by the environment.