THE EFFECTS OF PRECONDITIONING DEFOLIATION FOR COTTON WITH DENSE CANOPY FOLIAGE

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<u>Abstract</u>

In cotton with thick canopies, the upper leaves may occasionally obstruct or prevent defoliants from reaching the lower canopy leaves. Preconditioning cotton for defoliation, using low rates of various defoliants, may remove some upper leaves thus allowing for a more complete defoliation when standard defoliant applications are made. Targeting older upper leaves in the canopy allows for the removal of plant sinks that are no longer beneficial for plant growth. Experiments were conducted in North Carolina and Virginia during 2007 and 2008 investigating the effects of various defoliants applied prior to standard defoliant applications. Treatments consisted of four rates of ethephon, and two rates of tribufos applied at approximately seven days prior to standard defoliation in 2007. Two rates of pyraflufen ethyl were included in 2008. These treatments were compared to a non-treated control and a standard defoliant mixture with no prior defoliant treatment. Results indicated that the higher rates of ethephon and both rates of tribufos and pyraflufen ethyl applied prior to standard defoliation may allow for more complete defoliation by removing some upper leaves. This procedure of preconditioning is likely a better strategy for thick cotton canopies. Results also implied that preconditioning had no effect on yield, lint percentage or percent open bolls on the day of standard defoliation or nodes above crack boll in any year. Preconditioning could allow for more efficient defoliation and increase the ease and efficiency of harvesting.