

RECOVERABILITY OF UPLAND COTTON FOLLOWING TERMINAL REMOVAL AT VARIOUS GROWTH STAGES**Jason A. Sweeney****Michael A. Jones****Clemson University, PDREC****Florence, SC****Jeremy K. Greene****Michael W. Marshall****Clemson University, Edisto REC****Blackville, SC****Mark Zarnstorff****National Crop Insurance Services****Overland Park, KS****Abstract**

Many natural occurrences have the potential to reduce crop yield by causing physical damage to vegetative and reproductive plant tissues. Accurate assessment of yield loss following a particular stress requires an understanding of the propensity of the crop to recover during the remainder of the growing season. Estimating the expected yield loss based on the timing and nature of crop injury is important for the purpose of grower compensation for insurance providers and extension personnel, as well as replanting decisions for producers. The objective of this study was to determine the response of cotton (*Gossypium hirsutum* L.) to terminal removal at different stages of cotton growth and development. A replicated field trial was conducted at Clemson University's Pee Dee Research & Education Center based in Florence, SC in 2011 and 2012. Terminals were removed by hand in 2, 4, 8, 12, and 16 leaf cotton at various positions between mainstem nodes. There was no irrigation by terminal removal interaction observed for any parameter in this study. In both years, lint yield of PHY 499WRF was reduced compared to the untreated check following terminal removal between nodes 3 and 4 in 8 leaf cotton, between nodes 7 and 8 in 12 leaf cotton, and between nodes 9 and 10 in 12 leaf cotton in. Additionally, lint yield was reduced compared to the untreated check following terminal removal between nodes 11 and 12 in both 12 and 16 leaf cotton in 2012. Yield decline was associated with a decrease in 1st position bolls up to 88% in the most severe removal treatments, a decrease in overall fruiting sites, as well as a decrease in boll number in the upper portion of the plant above the site of injury, compared to untreated checks. Plants subjected to early season removal treatments such as terminal removal between nodes 1 and 2 in 2 and 4 leaf cotton were able to recover following injury due to production of robust monopodial nodes. Conversely, plants subjected to midseason removal treatments at the 12 leaf stage lost the majority of their fruiting potential when the terminal was removed along with sympodia.