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## Maturity and Yield Responses of Non-transgenic and Transgenic Bt Cotton to Simulated Bollworm Injury

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No precise economic injury levels or action thresholds have been established for pests infesting transgenic Bt cotton, *Gossypium hirsutum* L. This study was designed to quantify the effects of injury to cotton bolls by simulating feeding by the bollworm, *Helicoverpa zea* (Boddie), during flowering stages on non-transgenic (cv. Stoneville 474) and transgenic Bt (cv. NuCOTN 33B) cotton. Field tests were conducted in Northeast Louisiana during 1997 and 1998 on upland cotton to study crop maturity, seedcotton yields, and boll injury associated with insect pests. Boll injury was produced by drilling a 63.5 mm hole completely through bolls. Yield and maturity responses of non-transgenic and transgenic, *Bacillus thuringiensis* Berliner var. *kurstaki* (Bt), cotton were measured after seven levels (0, 2.5, 5, 10, 20, 40, and 80%) of mechanical boll injury were applied to the total boll population during the first 4 wk of flowering. Boll injury during week 2 of flowering on Stoneville 474 in 1997 and during weeks 3 and 4 of flowering on Stoneville 474 and NuCOTN 33B in 1998 significantly delayed crop maturity at the time of harvest aid application. Significant reductions in seedcotton yield of Stoneville 474 were observed when bolls were damaged during weeks 3 and 4 of flowering in 1997 and during week 4 of flowering in 1998. Significant ( $P = 0.05$ ) yield reductions of NuCOTN 33B were observed during weeks 3 and 4 of flowering in 1997. These data define economic injury levels for boll-feeding insects during the first four weeks of flowering.