

**GLUFOSINATE AND INSECTICIDE/PGR CO-APPLICATION EFFECTS ON GROWTH AND YIELD
OF LIBERTY LINK COTTON**

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Abstract

Field studies were conducted at the Northeast Research Station near St. Joseph, LA, the Dean Lee Research Station near Alexandria, LA, and the Macon Ridge Research Station near Winnsboro, LA to evaluate effects of insecticides on Liberty Link cotton tolerance when co-applied with Ignite in multiple applications. Study design was a randomized complete block with a factorial arrangement of Ignite/PGR co-application (Ignite at 29 oz/A alone or co-applied with Stance at 3 oz/A), insecticides (Acephate at 0.5 lb ai/A, Baythroid at 0.033 lb ai/A, Bidrin at 0.4 lb ai/A, Centric at 0.047 lb ai/A, Dimethoate at 0.25 lb ai/A, Diamond at 9 oz product/A, Carbine at 0.088 lb ai/A, Zephyr at 5 oz product/A, Oberon at 5 oz product/A, or Vydate at 0.4 lb ai/A), and application timing (match-head square or first bloom). Treatments were applied to each 6.67' x 30' plot with a CO₂ backpack or tractor mounted compressed air sprayer at 15GPA. Cotton variety FM 1735 LLB2 was planted in early May at each location. Blanket insecticide applications and Ignite hooded sprayer applications were made as needed to the entire test area to ensure lack of weed or insect interference with results. Maintenance applications were not made within 14 days of treatment applications. Parameter measurements included visual assessment of crop injury 7, 14, and 28 d after treatment (DAT), plant height 14 and 28 DAT, and cotton lint yield.

At 7 DAT for the match-head square application in Alexandria, injury in the form of leaf speckling with Ignite co-applied with insecticides Carbine and Zephyr averaged across Ignite/PGR co-application was 8% and greater than all other co-applications. At 14 DAT, injury for these two co-applications was 5 and 3%, respectively, and greater than all other treatments. Injury for this early application assessment interval was no greater than 3% at the St. Joseph and Winnsboro locations. By 28 DAT, injury following the earlier application timing was no greater than 1% at all locations. At all locations, injury following the later application timing was no greater than 2%. At Alexandria, averaged across insecticides cotton height was significantly lower with the addition of Stance to Ignite compared to Ignite alone at 14 (81 vs. 73 cm) and 28 (97 vs. 93 cm) DAT of the match-head square application timing. This effect was similar at St. Joseph for cotton height 14 (74 vs. 66 cm) and 28 (90 vs. 81 cm) DAT and at Winnsboro 14 DAT (68 vs. 56 cm). Addition of Stance to Ignite at the later application timing had no impact on cotton height at any location. Insecticide co-application also had no effect on height. At Alexandria, cotton lint yield, averaged across insecticide co-application, was lower with the addition of Stance to Ignite (595 vs. 476 lb/A). At St. Joseph, lint yield was lower with Ignite alone compared to the addition of Stance (608 vs. 670 lb/A) while yield was not impacted by Stance addition at Winnsboro. At Alexandria, insecticide co-application had no impact on lint yield. At St. Joseph, averaged across PGR treatment and application timing, lint yield for insecticides Acephate (592 lb/A), Baythroid (507 lb/A), Bidrin (615 lb/A) and Centric (585 lb/A) were all lower than the highest numeric yield for Diamond (972 lb/A). At Winnsboro, PGR application had no impact on yield, but insecticide Vydate (394 lb/A) resulted in a lower lint yield than the highest numeric yield for Bidrin (573 lb/A).