

STAPLE LX AND DUAL MAGNUM COMBINATION EFFECTS WITH GLYPHOSATE ON WEED CONTROL AND COTTON TOLERANCE

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Abstract

A field study was conducted at the LSU AgCenter Northeast Research Station near St. Joseph, LA to evaluate cotton tolerance and weed control with glyphosate co-applied with Staple LX and Dual Magnum. The study was conducted on a silt loam soil with pH 6.5. Treatments were applied to each 6.67' x 25' plot with a CO₂ backpack sprayer at 15GPA. Cotton variety DP 164 B2RF was planted on April 30. Treatments were applied on May 26 to cotton at the 2 to 3 leaf growth stage. Treatments evaluated included Roundup Powermax at 22 oz/A alone or co-applied with Dual Magnum at 16 oz/A, Dual Magnum at 16 oz/A plus Staple LX at 1.7 oz/A, or with Staple LX at 1.7, 2.7, or 3.8 oz/A; Touchdown Total at 24 oz/A alone or co-applied with Dual Magnum at 16 oz/A or Dual Magnum at 16 oz/A plus Staple LX at 1.7 oz/A or Staple LX at 1.7 oz/A; and Sequence applied at 2.5 pt/A alone or co-applied with Staple LX at 1.7 oz/A. Parameter measurements included visual assessment of crop injury 7, 14, and 28 d after treatment (DAT), visual assessment of weed control 14 and 28 DAT, and seed cotton yield. Weeds evaluated included barnyardgrass, crabgrass, sickle pod, entireleaf morningglory, pitted morningglory, redroot pigweed, and goosegrass. Following the final visual rating, Roundup Powermax at 22 oz/A was applied to the entire test area.

At 7 DAT, Sequence co-applied with Staple LX and Roundup Powermax co-applied with Dual Magnum plus Staple LX resulted in 15% injury, which was equal to the 14 and 9% injury observed with Roundup Powermax co-applied with Dual Magnum or Staple LX at 2.7 oz/A, and greater than all other treatments (1 to 8%). At 14 DAT, greatest injury of 18% was observed with Roundup Powermax co-applied with Dual Magnum plus Staple LX. Roundup Powermax co-applied with Dual Magnum and Sequence co-applied with Staple LX resulted in equivalent injury of 10%. All other treatments resulted in no greater than 5% injury. By 28 DAT, however, cotton injury was no greater than 4% for any treatment. At 14 DAT, control of barnyardgrass, crabgrass, sicklepod, pitted morningglory, entireleaf morningglory, and redroot pigweed was at least 91, 99, 80, 90, 89, and 94%, respectively, and equivalent among all treatments. Hemp sesbania control ranged from 89 to 100% with only slight differences noted among treatments. Results were similar 28 DAT as control of barnyardgrass, crabgrass, goosegrass, hemp sesbania, pitted morningglory, entireleaf morningglory, and redroot pigweed ranged from 70 to 86%, 95 %, 70 to 86%, 81 to 98%, 98 to 100%, 96 to 100%, and 78 to 100%, respectively, and was equal for all treatments. Sickelpod control was no greater than 81% for the treatments evaluated. Differences in early season injury and slight differences in weed control were not manifested in significant yield reduction as seed cotton yield ranged from 1340 to 1744 lb/A and was equal for all treatments.