

WEED CONTROL AND COTTON TOLERANCE WITH CGA 362,622
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Abstract

Field studies were conducted in 2001 at the Northeast Research Station in St. Joseph, La, to evaluate weed control and crop tolerance with CGA 362,622. In the crop tolerance study, EPOST, LPOST, and PD timings were over-the-top to four-leaf cotton, over-the-top to 13-leaf cotton, and directed underneath cotton at 13 leaf, respectively. Treatments evaluated included CGA 362,622 at the following rates and timings: 0.0047, 0.007, or 0.012 lb ai/A EPOST; 0.007 or 0.012 lb ai/A LPOST or PD; 0.0047 lb ai/A EPOST followed by 0.007 lb ai/A PD; 0.012 lb ai/A EPOST followed by 0.012 lb ai/A PD; and 0.0047 lb ai/A in combination with Touchdown IQ (glyphosate) at 0.75 lb ae/A EPOST. Nonionic surfactant at 0.25% v/v was included with all CGA 362,622 treatments except when combined with Touchdown IQ. In addition to location in a relatively weed-free area, a combination of Prowl (pendimethalin) at 0.75 lb ai/A plus Cotoran (fluometuron) at 1.2 lb ai/A and Bladex (cyanazine) at 1.0 lb ai/A were applied PRE and at layby, respectively, to all plots to eliminate weed competition. In the weed control study, EPOST, EPD, and LPD timings were over-the-top to three to four-leaf cotton, directed underneath six to eight-leaf cotton, and directed underneath 11 to 12-leaf cotton, respectively. Treatments evaluated included CGA 362,622 at the following rates and timings: 0.0047 lb ai/A EPOST; 0.0047 lb ai/A EPOST followed by 0.007 or 0.012 lb ai/A LPD; 0.007 or 0.012 lb ai/A EPD; 0.007 or 0.012 lb ai/A EPD followed by 0.007 lb ai/A LPD; 0.007 or 0.012 lb ai/A following Touchdown IQ at 0.75 lb ae/A EPOST; and 0.007 lb ai/A in combination with Touchdown IQ at 0.75 lb ae/A LPD following Touchdown IQ at 0.75 lb ae/A EPOST. Touchdown IQ at 0.75 lb ae/A applied EPOST followed by LPD and a nontreated check were included for comparison. Treflan (trifluralin) at 0.75 lb ai/A PPI and nonionic surfactant at 0.25% v/v were included with all programs that did not include Touchdown IQ. Weeds evaluated included barnyardgrass (*Echinochloa crus-galli*), goosegrass (*Eleusine indica*), hemp sesbania (*Sesbania exaltata*), sicklepod (*Senna obtusifolia*), smooth pigweed (*Amaranthus hybridus*), pitted morningglory (*Ipomoea lacunosa*), and entireleaf morningglory (*Ipomoea hederacea*). Experimental design in both studies was a randomized complete block replicated four times. Treatments were applied at 15 GPA to DP 458BR cotton on May 24, June 25, and June 25 in the tolerance study and May 24, June 1, and June 18 in the weed control study. Treatments were applied to all rows of each 4 x 12 m, four row plot. PD treatments were applied broadcast using a layby spray rig. To assess possible negative treatment effects in the tolerance study, injury was visually rated 7 and 40 d after EPOST application. In addition, lint fraction; lint yield; and fiber micronaire, strength, and length were determined following machine harvest of the center two rows of each plot. Final plant height and total number of nodes were determined from 10 randomly selected plants. In the weed control study, plots were visually rated for weed control 37 and 60 d after EPOST application. Lint yield was determined following machine harvest of the center two rows of each plot.

In the tolerance study, visual injury 7 d after EPOST application (DAT) with the 0.007 or 0.012 lb ai/A rate ranged from 24 to 26% and was greater than that for the 0.0047 lb ai/A rate (13 to 16%). At 40 DAT, injury was not evident for any treatment. Lint fraction, lint yield, final plant height, total number of nodes, fiber micronaire, fiber strength, and fiber length averaged 0.41, 902 lb/A, 112 cm, 16, 4.8, 27, and 1.05, respectively, for nontreated plants. Negative effects were not noted with CGA 362,622 applications for any parameter measured.

In the weed control study, 37 d after EPOST treatment (DAT) all treatments except CGA 362,622 at 0.007 or 0.012 lb ai/A LPD following Touchdown IQ (84 and 88%) resulted in barnyardgrass control ranging from 93 to 95%. Treatments that included Touchdown IQ LPD resulted in 95% goosegrass control, which was greater than all other treatments (63 to 85%). All treatments except CGA 362,622 at 0.0047 lb ai/A EPOST (71%) and the Touchdown IQ sequential treatment (84%) resulted in at least 93% hemp sesbania control. All treatments except the lowest rate of CGA 362,622 EPOST (74%) resulted in 88 to 94% control of sicklepod. Programs including CGA 362,622 alone resulted in 88 to 95 and 93 to 95% control of pitted and entireleaf morningglory, respectively. At 60 DAT, all treatments including Treflan resulted in 94 to 95% barnyardgrass control. Treatments including Touchdown IQ resulted in 79 to 81% control. CGA 362,622 applied sequentially at 0.0047 lb ai/A EPOST followed by 0.007 lb ai/A or 0.012 lb ai/A LPD and treatments including Touchdown IQ LPD resulted in 85 to 95% goosegrass control while all other treatments controlled goosegrass 46 to 76%. All treatments resulted in good control of smooth pigweed (86 to 95%). All treatments except CGA 362,622 at 0.0047 lb ai/A EPOST resulted in at least 86, 89, 85, and 85% control of sicklepod, hemp sesbania, pitted and entireleaf morningglory, respectively. CGA 362,622 at 0.007 lb ai/A EPD alone or followed by 0.007 lb ai/A LPD and treatments that included Touchdown IQ LPD resulted in lint yield of 619 to 674 lb/A, which were the only treatments resulting in yield greater than the nontreated check (444 lb/A). Yields were very low due to heavy late season weed infestation caused by excessive late season rainfall.