

WEED MANAGEMENT IN BXN COTTON WITH COMMAND-REFLEX-BUCTRIL SYSTEMS

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Abstract

Command and Reflex can help overcome weaknesses in the BXN-Buctril system such as critical application timing on pigweed and prickly sida and lack of grass, sedge, and residual weed control. Weed management systems comparing Command 3ME preemergence (PRE) and Prowl preplant incorporated (PPI) with Reflex PRE and Buctril were evaluated for weed control and cotton yield at four locations over a two year period.

Herbicide systems included Command 3ME at 1 qt/A PRE or Prowl 3.3EC at 1.8 pt/A PPI each with or without Reflex 2EC at 1 or 1.5 pt/A PRE. In addition, a standard comparison of Prowl PPI fb Cotoran at 1.25 qt/A PRE was included. These soil-applied herbicide options were followed by: (1) no postemergence herbicides, (2) Buctril 4EC at 1 pt/A early postemergence, or (3) Buctril early postemergence followed by a layby application of Bladex at 1.6 pt/A plus Bueno 6 at 2.7 pt/A with 0.25% (v/v) nonionic surfactant late postdirected.

Based on an analysis of variance and orthogonal polynomial contrasts, increasing Reflex rate did not improve control of entireleaf morningglory, common ragweed, common lambsquarters, and prickly sida. Reflex was not necessary with Command for control of these weeds however morningglory was not controlled by Command alone. The only morningglory control in absence of Buctril was Prowl PPI fb Cotoran (42%). Addition of Buctril to any soil-applied regime improved morningglory control to over 80% and when Buctril was fb Bladex plus Bueno 6 late postdirected control was over 90%. When applied alone, Command PRE and Prowl PPI controlled common ragweed 95 and 23%, respectively. Addition of Reflex or Cotoran PRE to Prowl PPI improved control to near 80%. With Buctril, all systems controlled common ragweed 100%. Common lambsquarters control responded similarly to common ragweed although Prowl PPI alone controlled slightly more (61%). Prickly sida control by Command was over 90% while Prowl PPI controlled none. Addition of Buctril to the Prowl system increased control to only 78% and Reflex PRE or Cotoran PRE only marginally improved control by Prowl. In general, Command controlled goosegrass, large crabgrass, and broadleaf signalgrass more

than Prowl. Buctril did not improve grass control by the soil-applied only treatments. Reflex marginally improved grass control by both Command and Prowl. Palmer amaranth control by Command alone was less than 40% while Prowl alone controlled over 60%. Reflex PRE improved control by both Command and Prowl to near 80%. Postemergence herbicides using Buctril did not improve Palmer amaranth control over the soil-applied only treatments.

Cotton could not be harvested following Command or Prowl alone. Cotton treated with Command-Reflex or Prowl-Reflex, regardless of Reflex rate, yielded only 200 to 220 lb lint/A. When Buctril was added, all systems yielded over 800 lb lint/A except Prowl PPI without Reflex (620 lb/A). Addition of Bladex plus Bueno 6 late postdirected to Prowl PPI fb Buctril early postemergence improved yield to near 1000 lb lint/A which was equivalent to the other soil-applied options fb Buctril alone.

Depending on the weed spectrum, Command can perform as well or better than Prowl PPI in the BXN-Buctril system. Reflex PRE will be necessary with Command if heavy pigweed infestations are expected. Yield was more consistent when a layby was applied although not significantly different in the Command systems. Prowl PPI systems will benefit from both Reflex PRE and layby applications.