WEED MANAGEMENT IN REDUCED AND NO-TILL BXN COTTON IN NORTH CAROLINA AND GEORGIA WITH BUCTRIL AND STAPLE

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Abstract

Field studies were conducted at four locations in North Carolina and Georgia to evaluate Buctril and Staple systems for weed control, crop injury, and yield in reduced and no-till BXN cotton. Herbicide systems were a factorial arrangement of PRE, EPOST, POST, and LAYBY options. PRE treatment options consisted of a) Gramoxone Extra at 0.25 lb ai/ac, and Staple at 0.094 lb ai/ac. EPOST treatment options consisted of a) Buctril at 0.375 lb ai/ac, and Buctril + MSMA at 1.0 lb ai/ac. POST treatment options consisted of a) none, and b) Buctril. LAYBY treatment options consisted of a) none, and b) Bladex at 0.80 lb ai/ac + MSMA. Additional treatments consisted of Gramoxone Extra PRE or Gramoxone Extra + Staple PRE alone or fb Cotoran 1.0 lb ai/ac + MSMA post-directed (PDS) or fb Cotoran + MSMA PDS or fb Bladex + MSMA LAYBY. A non-treated check was also included. PRE treatments received a NIS at 0.25% (v/v). All treatments were applied using a CO_2 backpack sprayer delivering 17-20 GPA at 20-30 PSI. Weeds evaluated included redroot pigweed (Amaranthus retroflexus L.), sicklepod [Senna obtusifolia (L.) Irwin and Barneby], Ipomoea morningglory species (Ipomoea spp. L.), common cocklebur (Xanthium strumarium L.), common lambsquarters (Chenopodium album L.), and common ragweed (Ambrosia artemisiifolia L.). Studies were conducted at Calhoun and Tifton, GA in 1994 and at Richfield and Clayton, NC in 1995. Data represent averages over four locations.

Buctril EPOST and Staple PRE controlled redroot pigweed 91 and 93%, respectively. Buctril + MSMA EPOST fb Bladex + MSMA controlled sicklepod 74%, while Buctril EPOST gave no control of sicklepod. Staple PRE controlled sicklepod 38%, but when fb Buctril + MSMA EPOST fb Bladex + MSMA control improved to 97%. Buctril EPOST and Staple PRE controlled morningglory species 93, and 84%, respectively, while Staple PRE fb Buctril EPOST gave 99% control. Staple and Buctril controlled common cocklebur less than 31%. Staple PRE fb Cotoran + MSMA PDS fb Bladex + MSMA LAYBY controlled common cocklebur 74%. Common Lambsquarters was controlled 93% with Buctril EPOST, while Staple PRE gave 16% control. Buctril EPOST controlled common ragweed 92%, while Staple controlled 78%.

Crop injury was at least 24% with treatments receiving Staple PRE and less than 3% with all other treatments at 20 DAT. All herbicide treatments yielded more than the nontreated check (297 lb of lint/ac). Staple PRE and Buctril EPOST yielded less than 540 lb lint/ac which was significantly less than systems receiving any postemergence options. Buctril + MSMA EPOST systems yielded more than systems containing only Buctril EPOST or Staple PRE. Staple PRE fb Buctril + MSMA fb Bladex + MSMA LAYBY yielded the highest at 1260 lb lint/ac. Equivalent yields were provided by systems which included Bladex + MSMA LAYBY. However, all Staple and Buctril systems which did not receive a LAYBY application did statistically yield less than ones that did.

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