WEED CONTROL IN COTTON WITH DIFFERENT TILLAGE SYSTEMS AND HERBICIDE RESISTANCES

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Abstract

As herbicide-resistant crops enable new choices for cotton weed management, questions remain as to which weed control systems are best suited to different weed populations and tillage practices. Studies were conducted in 1997 at Clayton and Goldsboro, NC to evaluate Staple, Buctril, and Roundup Ultra systems in conventional and no-till production. Cotton varieties included Stoneville 474, Stoneville BXN47, and Paymaster 1330RR. Herbicides included: Treflan PPI at 1 pint/A, Prowl PRE at 1 pint/A, Cotoran PRE or EPDS at 1 quart/A, Bueno 6 EPOST at 1 pint/A, Staple EPOST at 1.2 ounces/A, Buctril EPOST at 1 pint/A, Roundup Ultra EPOST at 1.5 pints/A, Buctril As Needed at 1 pint/A, Roundup Ultra As Needed at 1.5 pints/A, and Bladex + Bueno 6 LAYBY at 0.8 quarts/A and 1.3 quarts/A, respectively. These herbicides were applied in various combinations and mixes depending on variety and tillage practice.

Standard treatments for each variety (soil-applied herbicides followed by Staple, Buctril, or Roundup Ultra fb layby) controlled common lambsquarters (*Chenopodium album*), entireleaf morningglory (*Ipomoea hederacea* var. *integriuscula*), ivyleaf morningglory (*Ipomoea hederacea*), jimsonweed (*Datura stramonium*), large crabgrass (*Digitaria sanguinalis*), pitted morningglory (*Ipomoea lacunosa*), prickly sida (*Sida spinosa*), smooth pigweed (*Amaranthus hybridus*), tall morningglory (*Ipomoea purpurea*), and velvetleaf (*Abutilon theophrasti*). Superior sicklepod (*Senna obtusifolia*) control gave Roundup Ultra the advantage under extreme sicklepod pressure. Bueno 6 was the backbone of Staple and Buctril systems for sicklepod control. Lint yield from Roundup Ready and Stoneville BXN47 systems was slightly higher than Stoneville 474 systems. Lack of yield for Staple containing systems was mainly due to sicklepod interference. In general, conventional tillage production yielded more than no-till in this study probably due to cold conditions late in the planting season which delayed soil warming in the no-till system. Net Returns from the standard systems were highest from the Roundup Ready system fb the Stoneville BXN47 system fb the Stoneville 474 system. All three systems worked well in no-till production. Roundup Ready was advantageous in heavy sicklepod pressure. Staple and Buctril can control sicklepod when applied with Bueno 6 PDS followed by a timely layby application of Bladex plus Bueno 6.

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