

**WEED MANAGEMENT WITH
ROUNDUP-RESISTANT COTTON**
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Abstract

Experiments were conducted at Clayton and Rocky Mount, NC to investigate weed control, crop response, and yield of Roundup Ready cotton (*Gossypium hirsutum* L.). Weed management systems consisted of the following herbicides combinations: Treflan applied preplant incorporated (PPI) at 0.5 lb ai/ac with Cotoran preemergence (PRE) at 1.25 lb ai/ac alone or followed by (fb) 1) Cotoran at 1.0 lb plus MSMA at 2.0 lb early post-direct (EPDS) alone or fb Bladex at 1 lb ai/ac plus MSMA at 2.0 lb ai/ac late post-direct (LPD), 2) Roundup early postemergence (EPOST) at 0.56 lb ae/ac alone or fb Bladex plus MSMA LPD, 3) Staple at 1.0 oz ai/ac EPOST alone or fb Bladex plus MSMA LPD. Other systems evaluated included Treflan PPI fb Staple EPOST alone or fb Bladex plus MSMA LPD, Cotoran PRE fb Roundup EPOST alone or fb Bladex plus MSMA LPD. Additional systems were Roundup applied EPOST alone or fb Bladex plus MSMA LPD, Cotoran PRE fb Roundup alone and fb Bladex plus MSMA LPD; and Treflan, Cotoran, and Treflan and Cotoran fb Roundup as needed. For Roundup as needed systems, Roundup was applied EPOST and then applied post-directed twice. There was an untreated check for comparison. All POST and Roundup treatments were applied using a nonionic surfactant at 0.25% and 0.50% (v/v), respectively. Weed species evaluated included prickly sida (*Sida spinosa* L.), *Ipomoea* spp., common lambsquarters (*Chenopodium album* L.), smooth crabgrass [*Digitaria ischaemum* (Schreber) Schreber ex Muhl.] at Clayton. Weeds evaluated at Rocky Mount consisted of large crabgrass [*Digitaria sanguinalis* (L.) Scopoli], prickly sida, pitted morningglory (*Ipomoea lacunosa* L.), common lambsquarters, and Pennsylvania smartweed (*Polygonum pensylvanicum* L.).

At Clayton, Roundup applied alone EPOST gave excellent control of broadleaf weeds and grasses. Due to a lack of residual control from Roundup, weeds reinfested these plots. The application of Bladex plus MSMA LPD following Roundup EPOST provided excellent season long control. Multiple applications of Roundup provided control comparable to that of the aforementioned treatment. Crop injury was less than 5% with all treatments.

At Rocky Mount, multiple applications of Roundup provided excellent control of broadleaf weeds and grasses. Again, due to the lack of residual control, plots that

received only one application of Roundup were reinfested by later germinating weeds. Roundup applied three times or Roundup fb a LPD application of Bladex plus MSMA improved control to at least 90%. Roundup provided a broader spectrum of annual broadleaf weed control than Staple at both locations. Bladex plus MSMA LPD was essential for good season long weed control in most Staple and Roundup systems.