

**BROADLEAF WEED CONTROL SYSTEMS IN
ROUNDUP READY™ COTTON**

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Abstract

Field studies were conducted in 1995 at the Delta Branch Experiment Station at Stoneville, MS to evaluate Roundup and Staple with current PRE treatments for weed control in cotton. PPI/PRE treatments included 0.75 lb ai/A Treflan, 0.75 lb/A Treflan plus 0.8 lb/A Cotoran, and 1.0 lb/A Zorial. POST treatments evaluated were 1.0 oz/A Staple (3" cotton) followed by 1.0 oz/A Staple (6" cotton); 0.75 lb ae/A Roundup (3"); and 0.75 lb/A Roundup (3") followed by 0.56 lb/A Roundup (6"). Cotton was planted and PRE applications were made on May 11, 1995. Visual ratings of hemp sesbania [*Sesbania exaltata* (Raf.) Rydb.], common cocklebur (*Xanthium strumarium* L.), morningglory species (*Ipomoea* spp.), and common purslane (*Portulaca oleracea* L.) control and cotton injury were determined at 9 weeks after planting (WAP).

With no PRE treatment, two applications of 1.0 oz/A Staple (3" and 6" cotton) controlled hemp sesbania and morningglory species 95% and 83%, respectively. Staple provided marginal control (76%) of common cocklebur and poor control (65%) of common purslane. A single application of Roundup applied to 3" cotton provided marginal control of hemp sesbania and common cocklebur (76% and 71%, respectively) and poorly controlled common purslane (41%) and morningglory species (40%). Roundup applied to 3" and 6" cotton controlled all weed species 81% or more.

With the use of Treflan PPI, All POST treatments controlled hemp sesbania 98%. Two applications of Staple or Roundup applied to 3" cotton alone controlled common cocklebur 76%, with 95% control of common cocklebur resulting from two applications of Roundup. Two applications of Staple or Roundup controlled morningglory species 93% and 88%, respectively. A single application of Roundup controlled morningglory species less than 50%. Common purslane control was 78-89% with all POST treatments and was 71% with Treflan alone.

With the use of Treflan PPI plus Cotoran PRE, and with the addition of a POST treatment, hemp sesbania control was 88-98%. With a POST treatment, common cocklebur control was 81%-94%. Two applications of Staple or two

applications of Roundup controlled morningglory species 97% and 92%, respectively, with a single application of Roundup controlling morningglory 70%. Common purslane control was above 83% for all treatments with Treflan PPI plus Cotoran PRE.

With the use of Zorial PRE, hemp sesbania control was greater than 90% with two applications of Staple or Roundup, but was 69% with a single Roundup application. Common cocklebur control was 73-88% with the addition of a POST treatment. Morningglory control was greater than 85% with the use of two applications of Roundup or Staple. Common purslane control was greater than 85% with all treatments with Zorial PRE.

Cotton yield increased with the use of two applications of Roundup in the absence of a PRE compared to a single application of Roundup or two applications of Staple. With the use of Treflan PPI or Treflan plus Cotoran PPI, no significant yield difference between treatments was observed. With Zorial PRE, a yield increase occurred with the use of two applications of Staple or Roundup over no POST or one application of Roundup.