

STRATEGIES FOR STAPLE USE IN COTTON

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Abstract

A field study was established near Rohwer, AR in 1997 to evaluate sicklepod [*Senna obtusifolia* (L.) Irwin and Barneby] control with different Staple (pyrithiobac) weed control programs. Staple was applied preemergence (PRE) at 0.6 or 0.8 oz pr/A as a single application or in combination with Cotoran (fluometuron) at 1.9 or 2.5 pt pr/A. Single postemergence (POST) applications of Staple at 0.6 or 1 oz/A or tank-mixed with MSMA (monosodium methanearsonate) at 1.0 pt pr/A were applied to 3 leaf cotton. The entire test area received Prowl (pendimethalin) at 2.3 pt pr/A PRE.

Sicklepod control was evaluated at 4 weeks after planting (WAP) and 2, 4, and 6 weeks after the POST treatment (WAT). At 4 WAP, sicklepod control ranged from 61 to 75% with a single PRE application of Staple at 0.6 to 0.8 oz/A. Sicklepod control with any Staple plus Cotoran PRE treatment was more variable ranging from 50 to 80%. At 2 WAT, an application of Staple at 0.6 or 0.8 oz/A plus MSMA at 1.0 pt/A following any PRE Staple program increased sicklepod control when compared to a single POST application of Staple. At 4 and 6 WAT, sicklepod control decreased from the previous rating; however, control remained higher when Staple plus MSMA was applied POST. Cotton injury was minimal with any weed control program.

A field study was established near Thalia, TX in 1997 to evaluate common cocklebur (*Xanthium strumarium* L.) and entireleaf morningglory (*Ipomoea hederacea* var. *integriuscula* Gray) control with POST applications of Staple plus Roundup Ultra (glyphosate). Single POST applications of Staple at 0.6, 0.9, and 1.2 oz pr/A or Roundup Ultra at 16, 24, and 32 oz pr/A were applied to 1 - 6 leaf cotton. Tank-mixes of Staple at 0.6 or 0.9 oz/A plus Roundup Ultra at 16 or 24 oz/A were applied in single and sequential applications. A treatment with 2 applications of Roundup Ultra at 32 oz/A was added for comparison purposes. Sequential POST applications were applied to 6 to 22 leaf cotton.

Common cocklebur and entireleaf morningglory were evaluated at 8, 25, and 60 days after the initial POST

treatment (DAT). At 8 DAT, all rates of Roundup Ultra had greater than 80% control of common cocklebur, and this was equal or greater control than a single application of Staple or Staple plus Roundup Ultra. Entireleaf morningglory control increased with a tank-mix of Staple at 0.9 oz/A plus Roundup Ultra at 24 oz/A when compared to single Staple applications. However, a single application of Roundup Ultra at 32 oz/A had equal or greater entireleaf morningglory control. At 25 and 60 DAT, 2 applications of Roundup Ultra controlled common cocklebur and entireleaf morningglory at least 78%, and this was equal or greater control than other treatments.

In summary, Staple is a valuable tool for weed control in cotton. The development of Roundup Ready cotton varieties will change weed control practices across the cotton belt. Staple will continue to be used in Roundup Ready varieties; however, application timings and methods will change to fit specific situations.