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PALMER AMARANTH (*AMARANTHUS PALMERI*) AND DEVIL'S-CLAW (*PROBOSCIDEA LOUISIANICA*) CONTROL WITH STAPLE/GLYPHOSATE COMBINATIONS IN ROUNDUP READY COTTON

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Abstract

Cotton producers on the Texas Southern High Plains have used in-season glyphosate applications to effectively control many annual and perennial weeds in Roundup Ready cotton. Palmer amaranth (*Amaranthus palmeri*) and devil's-claw (*Proboscidea louisianica*) continue to be problems for cotton producers on the Texas Southern High Plains because of season-long weed emergence. Staple herbicide can provide improved preemergence and postemergence control of these weeds. The efficacy of Staple herbicide in Roundup Ready systems has not been clearly defined. The objectives of these studies were: 1) to compare Staple applied preemergence (PRE), postemergence-topical (POST), or POST in combination with glyphosate; 2) to evaluate Staple PRE/POST programs without a preplant incorporated (PPI) dinitroaniline herbicide; and 3) to evaluate Staple-glyphosate combinations applied at different rates and timings.

Excellent season-long devil's-claw control was achieved with glyphosate POST followed by (fb) glyphosate postemergence-directed (PDIR). Similar control was achieved with Staple and Karmex PRE fb Staple POST and sequential Staple Plus treatments (early POST and POST). These treatments were more effective than either single application of glyphosate-Staple combinations (glyphosate at 0.56 lb ae/A and Staple at 0.031 lb ai/A or glyphosate at 0.75 lb ae/A and Staple at 0.063 lb ai/A) applied POST only. Treflan alone controlled Palmer amaranth 76%, while all Staple or Staple-glyphosate combinations controlled Palmer amaranth 93%. Without Treflan PPI, all Staple combinations controlled Palmer amaranth and devil's-claw greater than 90% season-long. Staple applied early POST (EPOST) alone provided similar Palmer amaranth and devil's-claw control to the control achieved with the Staple-glyphosate combinations applied at the same timing. Devil's-claw control was improved with an EPOST application of Staple compared to a POST application.