

**POSTEMERGENCE WEED MANAGEMENT
WITH ROUNDUP ULTRA, BUCTRIL AND
STAPLE IN TEXAS HIGH PLAINS COTTON**

J.W. Keeling, P.A. Dotray, T.S. Osborn and B.S.

Asher

**Texas Agricultural Experiment Station
Lubbock, TX**

Abstract

New postemergence herbicides technologies and transgenic cotton varieties offer cotton producers potential for controlling difficult annual and perennial weeds. Current preplant and preemergence herbicides control Palmer amaranth (*Amaranthus palmeri*) and other broadleaf annuals, but spot-spray and hand-hoeing are generally needed for weed escapes. Field experiments were conducted in 1997 at several locations across the Texas High Plains to evaluate annual and perennial weed management in Roundup Ready, BXN, and Staple herbicide system management.

The addition of Roundup Ultra to standard soil applied residual herbicides controlled Palmer amaranth escapes and devil'sclaw (*Proboscidea louisianica*). Postemergence topical (PT) Roundup Ultra applications provided good suppression of perennial weeds such as Texas blueweed (*Helianthus annuus*), silverleaf nightshade (*Solanum elaeagnifolium*), and woollyleaf bursage (*Ambrosia grayi*). Effective perennial weed control required two PT applications and one post-directed (PD) application. A PD Roundup application also improved annual weed control when weed pressure was high. Newly designed PD equipment makes Roundup applications more feasible. The use of Roundup in Roundup Ready Cotton significantly improved overall weed control in conservation tillage cotton.

Other experiments conducted in 1997 compared Staple+ Caparol or Staple + Karmex applied preemergence (PE) followed by (fb) Staple PT to standard treatments. The addition of Staple to Caparol or Karmex improved weed efficacy over Caparol or Karmex alone. The addition of Staple PT significantly increased control compared to the PE combination alone. These sequential Staple treatments provided season-long devil'sclaw and morningglory control.

Buctril applied to BXN cotton controlled several problem weeds, including devil'sclaw, common cocklebur (*Xanthium strumarium*), and morningglory species (*Ipomoea* sp.). Because Buctril does not control Palmer amaranth consistently, a preemergence herbicide in addition to a preplant herbicide was needed. The suitability of

current BXN varieties for production on the High Plains is still questionable.

The utilization of these technologies will ultimately depend upon economics. The relative yield of the varieties, seed, herbicide and other costs must be weighed against savings in inputs including other herbicides, cultivation and hand hoeing. Our results indicate that when uncontrolled weed problems exist, these new technologies are profitable.