

**UNIVERSITY RESEARCH EFFORTS IN THE
DEVELOPMENT OF WEED CONTROL
PROGRAMS UTILIZING BXN™, ROUNDUP
READY™, AND STAPLE TECHNOLOGIES**

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Abstract

Cotton producers on the Texas High Plains face increasing weed problems from numerous annual and perennial weeds. The need has long existed for postemergence topical herbicides that could be used safely in cotton to control weeds that escape preplant and preemergence herbicides. Staple herbicide, the BXN system, and Roundup Ready cotton offer exciting potential for improved weed control options in this region.

Each of these technologies bring a number of advantages and limitations to the producer and it remains to be seen how and what extent they will be adopted. With Staple, advantages would include control of a wide range of problem annual weeds, residual activity for preemergence weed control, and no requirement for special/transgenic seed. In trials conducted over the last 5 years, Staple has controlled many troublesome weeds including Palmer amaranth, devil's-claw, lanceleaf sage, and Venice mallow. Some limitations with Staple include no activity on perennial weeds, less active on larger weeds and potential for carryover and injury to rotation crops under dry soil conditions. Some of the advantages observed with Bucril use in the BXN System include a broad range of annual and perennial weeds controlled, effectiveness on larger weeds, a wide application window and no carryover/residual concerns. In our trials over the past 2 years, Bucril has controlled devil's-claw, cocklebur and lanceleaf sage while suppressing perennial weeds such as silverleaf nightshade and woollyleaf bursage. Limitations to Bucril use include lack of residual control on weeds that emerge mid- and late-season and availability of BXN stripper varieties that are adapted to the High Plains.

The advantages of Roundup use with Roundup Ready cotton include control of a wide range of annual and perennial weeds, effectiveness on larger weeds, and development of Roundup Ready adapted stripper varieties. The main limitation would appear to be a narrow window of application, up to 4-5 leaf cotton. In tests conducted in 1995, early-season Roundup applications gave excellent control of devil's-claw and silverleaf nightshade.

An important consideration to the adoption of these weed control technologies on the Texas High Plains will be

related to economics. Cotton producers are searching for ways to eliminate hand labor for weed control. Economic factors including herbicide costs/savings, seed costs, and labor savings will determine how these technologies will be used in this region as they become available.