

**WEED CONTROL PROGRAMS UTILIZING
BXN™, ROUNDUP READY™, AND STAPLE:
RESULTS, THOUGHTS, AND FUTURE
RESEARCH NEEDS**

**E. C. Murdock
Agronomy
Clemson University
Clemson, SC**

Abstract

Staple will provide good to excellent (80 to 100%) postemergence control of most broadleaf weeds in cotton, and will suppress yellow nutsedge and purple nutsedge. However, postemergence control of sicklepod and tropic croton is generally poor. Staple also has good residual activity on some broadleaf weeds. Buctril will provide good to excellent postemergence control of most broadleaf weeds in BXN™ cotton. However, in South Carolina Buctril has not controlled sicklepod, and generally has provided poor control of Palmer amaranth. Buctril has no residual activity. Weed management in Roundup Ready™ cotton with Roundup has been evaluated only in 1995. Roundup controls a broad spectrum of weeds including grass and broadleaf species. In South Carolina, all weed management programs utilizing these new technologies have weaknesses. Therefore, we feel a residual herbicide(s) and multiple postemergence herbicide applications will be needed to ensure season-long weed control.

Introduction

BXN™ cotton was available for commercial production on limited acreage in 1995; Staple received registration for weed control in cotton in September, 1995; Roundup Ready™ cotton may be commercially available in 1997. Staple, Buctril and Roundup provide good to excellent control of most broadleaf weeds in cotton. In addition, Roundup controls grassy weed species. Cotton producers will be challenged to use available information to identify strengths and weaknesses of weed management programs that utilize these new technologies.

Materials and Methods

Weed management in cotton with Staple, in BXN™ cotton with Buctril, and in Roundup Ready™ cotton with Roundup has been evaluated in South Carolina over the last 7, 5, and 1 year, respectively. The total number of experiments in which these technologies were evaluated is 35, 17, and 4, respectively. The experiments were established at up to eight locations each year with three to six replications.

Results and Discussion

Staple has provided good to excellent (80 to 100%) postemergence control of dinitroaniline-susceptible and -resistant Palmer amaranth, pitted morningglory, entireleaf morningglory, ivyleaf morningglory, common cocklebur, coffee senna, Pennsylvania smartweed, cowpea, and jimsonweed. Prickly sida control with Staple has been fair to good (50 to 89%), and application timing will be more critical for this species. Sicklepod, tall morningglory, common ragweed, and tropic croton control with Staple alone has been poor. However, Staple effectively suppresses sicklepod, thereby helping ensure adequate control with postemergence-directed herbicides.

Buctril has provided good to excellent control of all morningglory species evaluated, common cocklebur, coffee senna, Pennsylvania smartweed, tropic croton, prickly sida, and jimsonweed. Control of sicklepod and Palmer amaranth with Buctril has been unacceptable.

Roundup has provided good to excellent postemergence control of all grass and broadleaf weed species evaluated. However, Roundup has no residual activity, and weed management programs that included a residual herbicide(s) provided better season-long control.

In South Carolina, we feel Staple, Buctril, and Roundup will be used early postemergence over-the-top on 3- to 5-inch cotton. These treatments will be substituted for our standard early postemergence-directed application of DSMA or MSMA with or without Cotoran. A residual herbicide(s) and multiple postemergence herbicide applications will be needed in most fields to ensure adequate season-long weed control.