# ANNUAL MORNINGGLORY CONTROL WITH BXN COTTON

Ron Vargas, Farm Advisor, Madera County
Brian Marsh, Farm Advisor, Kern County
Tome Martin Duvall, SRA, Madera County
University of California Cooperative Extension
559-675-7879, Ext. 212
rnvargas@ucdavis.edu

BXN (Buctril) transgenic tolerant cotton has been tested on a limited basis in University trials in 1997 and 1998 with extensive testing in 1999. In 1999, due to the changes in "One Quality Law" governed by the SJV Cotton Board, several thousand acres of Stoneville BXN-47 cotton are now being commercially grown. Results of University trials, as well as grower experience, has indicated excellent control of most summer annual broadleaf weeds when Buctril is applied over-the top of 2 to 4 leaf cotton to weeds no larger than the 4 to 6 leaf stage. Tank mixes of Buctril and MSMA have enhanced annual morningglory control but when tank mixed with grass herbicides (Fusliade, Poast, and Prism) control of pigweed is considerably reduced. Buctril has no grass activity, so tank mixes with the selective grass herbicides are necessary to achieve grass control. There appears to be no loss of grass activity when mixed with grass herbicides. Buctril can be applied over-the-top and/or post directed up to 75 days from harvest without effect to cotton growth and development.

The objectives of the University studies have been to evaluate weed control efficacy, cotton tolerance and develop and integrate herbicide tolerant cottons into our production system. Alternative production systems such as conservation tillage and ultra narrow row cotton using herbicide tolerant cottons (BXN and Roundup Ready) are being studied to determine their economic and agronomic feasibility.

The objective of the current study at the Shafter Research and Extension Center is to evaluate the control of annual morningglory with Buctril alone and in tank mixes with MSMA and Staple. Stoneville BXN-47 was planted in mid April in a field uniformly and heavily infested with annual morningglory. The field was divided into four 40 inch rows by 150 feet and replicated three times in a randomized complete block design. Treatments were applied on May 24, 1999 over-the top of cotyledon to one true leaf cotton when the morningglory was in the 4 to 6 leaf stage with 4 to 12 inch runners. Herbicides were applied with a tractor mounted sprayer delivering 22 gallons of spray solution per acre with 8002 nozzles at 30PSI. Seven days after the initial treatments, which resulted in extremely poor control, the morningglory was removed by hand, and the field was then cultivated and irrigated. Treatments were then reapplied on June 22 over-the-top of 11 to 12 leaf cotton when the morningglory seedlings were cotyledon to 3 leaves. A third treatment of Buctril at 1 lb.ai/A was applied to the entire study area as a post directed application on July 8$^{th}$. All treatments at all application dates received Agridex at 1% v/v.

Evaluations at 7 days after treatment (DAT) indicated 93 to 100% control of morningglory in the cotyledon to 1 leaf stage. Both Buctril and Staple tank mixed with MSMA were providing 100% control. Control of morningglory in the 2 leaf or greater stage was reduced by as much as 75%. At 16 DAT best overall control was being exhibited by the Buctril, MSMA tank mix at 95%. Buctril alone was providing 80 to 83%, while Staple alone was providing 63% control. Evaluations will again be made at defoliation and lint yield and quality data will be collected.