

**ANNUAL MORNINGGLORY (*IPOMEA* SPP.)
CONTROL IN COTTON
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Visalia, Madera, Visalia, Shafter respectively**

Abstract

Annual morningglories are difficult to control with existing cultural and herbicide programs in cotton. Herbicide treatments were applied on a fallow bed field at Shafter Research Station and in a cotton field near Tulare, California in 1996. At 7 DAT there was a slight trend toward the higher rates of Staple giving higher control at Shafter. At Shafter with all evaluation dates, Staple + MSMA treatments gave higher control than the Staple alone or MSMA alone treatments. At 28 DAT the Staple + MSMA treatments gave between 96 and 97 percent control, whereas, the Staple alone gave 75 to 77 percent control and the MSMA alone gave 62 percent control. At the Tulare site Staple + Agridex gave partial control of emerged annual morningglory. Increasing rates of Staple and Agridex did not enhance control. The split application did not affect weed control. The addition of 5 gallons of UN-32 fertilizer to Staple increased control in all rates of Staple. Increasing rates of Staple to UN-32 did not enhance weed control. UN-32 fertilizer alone gave fair control but was approximately 15 percent less control than treatments with Staple. Cotton injury was slight for 14 days following treatments. The addition of UN-32 to Bladex gave better control of annual morningglory than the Bladex + Agridex, however cotton injury was severe for 20 days.

Introduction

Ivyleaf morningglory (*Ipomea Hederacea*) and tall morningglory (*Ipomea Hederacea*) are the predominant species in the San Joaquin Valley. Annual morningglories (*Ipomea* Spp.) climb over cotton plants, interfere with defoliation, harvest, and are difficult to control with current herbicide programs.

Materials and Methods

A fallow bed field at Shafter Research Station was divided into a randomized complete block design with four row plots and three replications. Herbicides were applied in 20 gallons per acre water, with a CO² backpack sprayer at 28 psi using 8002 flat fan nozzles. Treatments were applied June 24, 1996. Seedling morningglory was in the cotyledon to four true leaf stage. The trial had a mid-post directed spray (MP) on July 12, 1966. Air temperature and wind speed for the EP and MP applications were as follows:

EP 75°F with winds of 0-3 mph, MP 80°F with winds of 0-2 mph. Ratings were taken at 7, 14, 21, and 28 days after treatment (DAT).

A cotton field near Tulare, California was divided into a randomized complete block design with four row plots and three replications. Cotton was 14" tall with 12 nodes. Seedling morningglory was in the cotyledon to small twining stage. Herbicides were applied in 20 gallons per acre water, with a Hagie high cycle sprayer at 40 psi using 8002 flat fan nozzles. Tractor speed was 2 mph. Treatments were applied June 13, 1996. The midpost application was applied with a CO₂ backpack sprayer at 20 psi using 8002 flat fan nozzles. Walking speed was 2.5 mph had a mid-post directed spray (MP) on June 20, 1966. Air temperature and wind speed for the EP and MP applications were as follows: EP 95°F with winds of 0-3 mph, MP 95°F with winds of 0-2 mph. Ratings were taken at 7, 14, 21, and 28 days after treatment (DAT).

Results and Discussion

At 7 DAT there was a slight trend toward the higher rates of Staple giving higher control at Shafter. At 14 and 21 DAT there were no significant differences among treatments. At 28 DAT there appeared to be a slight trend toward higher rates of Staple giving higher control. The MP applications of Bladex and Caparol gave 70 and 73 percent control respectively (7 DAT).

At the Tulare site Staple + Agridex gave partial control of emerged annual morningglory. Increasing rates of Staple and Agridex did not enhance control. The split application did not affect weed control. There was very little cotton injury with Staple treatments. Bladex + Agridex, Caparol + Agridex, and Goal + Latron gave good control of annual morningglory. Cotton injury was high in these treatments probably due to high spray pressure. There was no injury at 28 days after treatment for any treatment. A second flush of annual morningglory came through all treatments following irrigation.

At Shafter all evaluation dates the Staple + MSMA treatments gave higher control than the Staple alone or MSMA alone treatments. At 28 DAT the Staple + MSMA treatments gave between 96 and 97 percent control, whereas, the Staple alone gave 75 to 77 percent control and the MSMA alone gave 62 percent control. There were no significant differences among Staple rates whether applied alone or as a tank mix.

At the Tulare site, Staple + Agridex gave partial control of emerged annual morningglory. Increasing rates of Staple gave a slight increase in weed control. Cotton injury was high at 6 DAT for Staple at the 1.5 oz ai rate although injury disappeared quickly. The addition of 5 gallons of UN-32 fertilizer to Staple increased control in all rates of Staple. Increasing rates of Staple to UN-32 did not enhance weed

control. UN-32 fertilizer alone gave fair control but was approximately 15 percent less control than treatments with Staple. Cotton injury was slight for 14 days following treatments.

The addition of Limonene surfactant to Staple at .75 oz enhanced annual morningglory control but did not increase

control at higher rates of Staple. Bladex + Limonene had less control than Bladex + Agridex. The addition of UN-32 to Bladex gave better control of annual morningglory than the Bladex + Agridex, however cotton injury was severe for 20 days. By 28 DAT all injury symptoms disappeared in all treatments. A second flush of annual morningglory came through all treatments following irrigation.