

# Postemergence Weed Control in Cantaloupe Study

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## Abstract

*The postemergence (POST) herbicide treatments did not cause any crop stand reduction following applications. Bentazon (Basagran®) at 0.50 lb AI/A caused marginally acceptable injury on the cantaloupe leaves. At 2 weeks after treatment (WAT), the amount of injury decreased and cantaloupe treated with Basagran at 1.0 lb AI/A showed marginally acceptable injury symptoms. Halosulfuron (Monsanto) at 0.05 to 0.10 lb AI/A caused slightly more injury (10 to 17%) with increasing rates. Basagran at 1.0 lb AI/A gave good control (>90%) of morningglory and was marginal in controlling morningglory at 0.75 lb AI/A. Halosulfuron at 1WAT was marginal in controlling morningglory but improved to give acceptable control at 2 WAT. Fewer and smaller plants were removed by hand-hoeing from Basagran and halosulfuron treated plots compared to the untreated check.*

## Introduction

Currently, there is no effective and safe postemergence (POST) herbicide for broadleaved weed control in melon crops. Bentazon (Basagran) and halosulfuron (Monsanto) have previously demonstrated tolerance by cucurbit crops when applied POST. The availability of a POST herbicide would expand the weed control options for a producer and could supplement cultivations and hand-hoeing. This test was conducted to evaluate and determine the efficacy and safety of the two POST herbicides on cantaloupes for fall production.

## Materials and Methods

A small plot field test was conducted near Scottsdale, AZ in a commercially grown cantaloupe field. The cantaloupe was planted in a single seedline on a 80-inch bed and furrow irrigated. Treatment plots measured 30 ft in length. The test was established with three replicates arranged in a randomized complete block design. The herbicide treatments were applied to cantaloupes growing at the 1-leaf stage of growth. Morningglory (*Ipomoea hederacea*) was the dominant weed present and was at the 2-leaf stage when treated (few plants were slightly larger). Weather conditions at the time of applications on 29 July 1997 was 94 F with a slight breeze at 5 mph and few high scattered clouds. The herbicide applications were made with a CO<sub>2</sub> backpack sprayer with a hand-held boom equipped with two 8002 flat fan nozzle tips positioned over the seedline. The treatments were applied in 25 gpa water and included an adjuvant, Latron CS-7 at 0.25% v/v, and pressurized to 40 psi. Visual observations were made at 1 and 2 weeks after treatment (WAT) and weed control and crop injury were rated.

## **Results and Discussion**

The POST herbicide treatments did not cause any crop stand reduction following applications. Basagran with increasing rates caused progressively greater injury as a foliar burning. Basagran at 0.50 lb AI/A caused marginally acceptable injury on the cantaloupe leaves. At 2 weeks after treatment (WAT), the amount of injury decreased and cantaloupe treated with Basagran at 1.0 lb AI/A showed marginally acceptable injury symptoms. Halosulfuron at 0.05 to 0.10 lb AI/A caused slightly more injury (10 to 17%) with increasing rates. At 2 WAT, the cantaloupe continued to appear slightly stunted in growth relative to the untreated crop.

Basagran at 1.0 lb AI/A gave good control (>90%) of morningglory and was marginal in controlling morningglory at 0.75 lb AI/A. The lowest rate was not sufficient to provide acceptable control. Halosulfuron at 1 WAT was marginal in controlling morningglory but at rates improved to give acceptable control at 2 WAT. Morningglory was not completely controlled at 2 WAT but the plant was significantly reduced in its competitiveness under the cantaloupe canopy.

Halosulfuron and Basagran controlled morningglory when treated at the 2-leaf stage and larger weeds were injured but continued to grow at a slower rate. Casual observations after the 2 WAT rating date showed that the cantaloupes did not appear to be delayed in its growth after the initial injury. The hot weather offered very conducive growing conditions and the cantaloupes rapidly grew out of the initial injury symptoms. After 2 WAT, the test site was accidentally hand-hoed and the morningglory was removed. Fewer and smaller plants were removed from Basagran and halosulfuron treated plots compared to the untreated check.

Basagran and halosulfuron have the potential to provide effective POST herbicide weed control options in the future for melons grown in the summer in Arizona. Basagran tends to cause leaf burning that appears to be similar to sunburning under plastic mulch in the spring when cantaloupes are planted in a mid-bed trench. The availability of POST herbicides would supplement hand-hoeing efforts by allowing the crew proceed at a faster rate of speed through the field when hoeing fewer and smaller weeds.

## **Acknowledgements**

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Table. Cantaloupe Postemergence Herbicide Weed Control Study. (Umeda)

Treatment	Rate (lb AI/A)	Cantaloupe			IPOHE	
		CSR	Injury		Control	
		05 Aug	05 Aug	12 Aug	05 Aug	12 Aug
----- % -----						
Untreated Check		0	0	0	0	0
Basagran	0.5	0	15	10	60	63
Basagran	0.75	0	20	17	82	78
Basagran	1.0	0	27	18	92	90
Halosulfuron	0.05	0	10	13	78	85
Halosulfuron	0.075	0	13	12	83	87
Halosulfuron	0.1	0	17	13	83	88
LSD(p=.05)		0	8.5	5.2	9	14.2

Applications made on 29 July 1997.

CSR = crop stand reduction,

IPOHE = *Ipomoea hederacea* (ivy leaf morningglory)