SIX SWEET CORN (*Zea mays* L.) CULTIVARS RESPONSE TO FORAMSULFURON APPLIED 21 DAYS AFTER PLANTING

T.L. Grey and A.S. Culpepper
Dept of Crop & Soil Sciences
University of Georgia
P O Box 1209
Tifton, GA 31793.

Introduction

Foramsulfuron (trade name Option®) is a new sulfonylurea herbicide developed for field corn that has potential for use in sweet corn weed control. Formasulfuron offers control of a number of important sweet corn broadleaf weeds including cocklebur (*Xanthium strumarium*), common ragweed (*Ambrosia artemisiifolia*), pigweed (*Amaranthus* spc.), and morningglory (*Ipomoea* spc.) species as well as crabgrass (*Digitaria sanguinalis*), foxtail (*Setaria* spc.) and panicum (*Panicum* spc.) grass species. Foramsulfuron could be used to control many of these species in fresh market sweet corn production. However, research into specific cultivar response must first be conducted to evaluate cultivar tolerance.

Materials and Methods

Two sweet corn trials were initiated in 2003, one was spring planted in March and the other fall planted in August. Each experiment was conducted in a different area of the same field. Six sweet corn cultivars were conventionally planted and included GSS 0966 Bt, BSS 0977 Bt, yellow supersweet Prime Plus, the bicolor supersweets Big Time and Sun Sweet, and the yellow supersweet Vail. The experiment utilized a randomized complete block design with a split-plot and four replications. Treatments included a nontreated check for comparison for each variety and foramsulfuron postemergence applied at 43 g ai/ha (1.75 oz of Option® herbicide per acre) 21 days after planting. Each treatment contained methylated seed oil and 28% urea-ammonium nitrate solution and was applied with a CO2 pressurized backpack boom sprayer calibrated to deliver 15 gal/A at 22 psi through TeeJet XR 11002 VS flat fan nozzles. Data taken included injury ratings at 7, 14, and 20 days after treatment (DAT), height measurements at 7 and 18 DAS, and corn harvested by marketable and nonmarketable ear grade and total yield.

Results and Discussion

Foramsulfuron applied topically to sweet corn cultivars visually stunted growth 8 to 19% at 7 DAT (Table 1). Minor chlorosis was observed at this time. At 14 DAT, injury ranged from 4 to 8% in the spring trial and less than 6% in the fall trial. No injury was visually detectable by 20 DAT. Sweetcorn height reductions were noted for the nontreated versus foramsulfuron for the spring test (Data not shown). For that trial at 7 DAT, 5 of the 6 varieties exhibited some height reduction from foramsulfuron. By 18 DAT there were no significant height differences between treated and non-treated corn. For the fall test, there was variability for height following the same trend for the spring test. Total sweet corn ear yield was variable for the two test (Data not shown). The spring test was much more productive with 5 of the 6 treated foramsulfuron

varieties yielding greater than the nontreated controls. This trend was not evident for the fall planting which was planted late due to wet weather. Fall growing conditions were less favorable than spring which could contribute to a reduction in recovery from foramsulfuron injury. The percent marketable ears reflected the ear yield for both trails. These data indicate that foramsulfuron has potential use in Georgia sweet corn production. Future trials will emphasis these same experiments and sweet corn varieties.

Table 1. Sweet corn response to foramsulfuron applied post emergence to six cultivars in

Variety	Treatment	Injury 7 d after application		Injury 14 d after application		Injury 20 d after application	
		Test		Test		Test	
		spring[b]	fall[b]	spring	fall	spring	fall
GS 0966	nontreated	0 b[c]	0 b[c]	0 c	0	0	0
	Formsulfuron[a]	17 a	8 a	8 a	0	0	0
BS 0977	nontreated	0 b	0 b	0 c	0	0	0
	Formsulfuron	16 a	10 a	7 a	0	0	0
Prime Plus	nontreated	0 b	0 b	0 c	0	0	0
	Formsulfuron	16 a	13 a	6 a	5	0	0
Big time	nontreated	0 b	0 b	0 c	0	0	0
	Formsulfuron	13 a	17 a	4 b	3	0	0
Summer sweet	nontreated	0 b	0 b	0 c	0	0	0
	Formsulfuron	19 a	13 a	4 b	3	0	0
Vail	nontreated	0 b	0 b	0 c	0	0	0

Formsulfuron	18 a	17 a	4 b	4	0	0

[a]Foramsulfuron applied as Option at 1.75 oz of product/acre 21 days after corn planting.
[b]Corn planting: Spring = March 28, 2003: Fall = August 18, 2003. Corn in the 6-8 leaf stage of growth.
[c] Mean separation LSD test, letters within a location indicate F value was significant at P 0.05.