

Control of morningglory in glyphosate-resistant corn with S-3153. Young, Bryan G. and Julie M. Young. This study was designed to evaluate S-3153 tank-mixed with glyphosate for morningglory control in a glyphosate-resistant corn system. The study was conducted on a Clarksdale silt loam with 1.7% organic matter and pH 5.8 at the Belleville Research Center. Fertilizer applied was 150, 50 and 150 lb/A N, P₂O₅ and K₂O, respectively, to an area that had been cropped to soybean in 2001. DeKalb brand 'DKC 64-10 RR' glyphosate-resistant field corn was planted 1.5 inch deep at 28 000 seed/A into a reduced-till seedbed on May 27. A blanket application of s-metolachlor&CGA-154281 at 0.785 lb/A was applied to all plots on May 28. Plots consisted of four rows with 30 inch row spacing, 27 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO₂ pressurized sprayer using 8002 flat fan tips at 40 PSI in 15 GPA water. Application timing was 4 inch morningglory (4"MG). Monthly rainfall in inches was 4.9, 6.6, 1.7, 3.7 and 3.6 in April, May, June, July and August, respectively. Weed population per 0.25 m² in the nontreated plots, mid-season, was 62 common waterhemp, 3 ivyleaf morningglory and 2 velvetleaf.

Application information is listed below.

Date	Jun-14-02
Treatment	4"MG
Air temperature (F)	74
Relative humidity (%)	46
Soil moisture	wet

field corn	
leaf no.	V3
height (inch)	6

common waterhemp	
leaf no.	4-8
height (inch)	3-4

ivyleaf morningglory	
leaf no.	3-4
height (inch)	3-4

velvetleaf	
leaf no.	3-4
height (inch)	3-4

Corn injury was 9 to 12% from S-3153 at 7 days after treatment (DAT). Carfentrazone caused 19% corn injury at 7 DAT. Injury decreased over time and no injury was observed from any treatment at 28 DAT. Glyphosate alone controlled 95% of common waterhemp, 94% of ivyleaf morningglory, and 99% of velvetleaf at 14 DAT. Tank mixing S-3153, carfentrazone, or atrazine with glyphosate increased common waterhemp and ivyleaf morningglory control to 97 or 99%, however these increases were not always significant due to the high level of weed control provided by glyphosate alone. (Dept. of Plant, Soil and General Agriculture, Southern Illinois University, Carbondale)

Table. Control of morningglory in glyphosate-resistant corn with S-3153. (Young and Young)

Treatment ^a	Application		Corn injury ^b			Control, days after 4"MG								
			days after 4"MG			AMATA			IPOHE			ABUTH		
	Rate	Time	7	14	28	7	14	56	7	14	56	7	14	56
	(lb/A)		%	%	%	%	%	%	%	%	%	%	%	%
Nontreated			0	0	0	0	0	0	0	0	0	0	0	0
Glyphosate	0.75	4"MG	0	0	0	99	95	99	82	94	90	99	99	99
Glyphosate+S-3153	0.75+0.014	4"MG	9	6	0	99	99	96	96	98	89	99	98	98
Glyphosate+S-3153	0.75+0.018	4"MG	12	6	0	99	98	94	98	97	89	99	99	99
Glyphosate+atrazine	0.75+0.75	4"MG	0	0	0	99	99	99	92	98	92	99	99	99
Glyphosate+carfentrazone	0.75+0.0078	4"MG	19	10	0	99	98	98	97	97	90	99	99	99
LSD			2	1	0	0	3	2	3	3	2	0	0.9	2
P			0.01	0.01	1.0	1.0	0.01	0.01	0.01	0.01	0.01	1.0	0.01	0.01

^aA blanket application of s-metolachlor&CGA-154281 at 0.785 lb/A was applied to all plots on May 28.

^bRating at 7, 14, and 28 days after 4"MG application were on Jun-21-02, Jun-28-02, and Jul-12-02, respectively.