

Soil-applied herbicide programs for weed control in corn. Urbana, Illinois, 2003. Maxwell, Douglas J., Christy L. Sprague, and Aaron G. Hager. The objective of this research was to evaluate soil-applied herbicide programs for weed control in corn. The study was established at the Crop Sciences Research and Education Center, Urbana. The soil was an Elburn silt loam with a pH of 6.6 and 4.7% organic matter. Pioneer 33Y09 corn was planted 2 inches deep on April 23 in 30 inch rows. Treatments were arranged in randomized complete blocks with three replications of plots 7.5 by 30 feet. Herbicides were applied with a CO₂ backpack sprayer delivering 20 gpa and equipped with 8003 flat fan nozzles. Application information is listed below:

Date	April 22	April 23
Application	ppi	pre
Temperature (F)		
Air	56	63
Soil	54	61
Soil Moisture	Moist	Moist
Wind (mph)	7-NE	3-N
Sky Cover (%)	0	0
Precip. after application		
Week 1 (inch)	0.72	0.72
Week 2 (inch)	1.31	1.48
Relative humidity (%)	30	30

There was no crop injury observed from any of the treatments. Giant foxtail, common lambsquarters, and Pennsylvania smartweed control at 30 days after treatment (DAT) was greater than 90% for all treatments. All treatments containing either mesotrione, isoxaflutole, or flumetsulam and clopyralid provided 90 % or greater velvetleaf control 30 DAT. Tall morningglory control 30 DAT was similar to that of velvetleaf, but lower in general. All treatments gave greater than 90% control of giant foxtail 60 DAT except isoxaflutole and atrazine at 0.07 lb/A and 1.5 lb/A, and S-metolachlor plus atrazine plus mesotrione and CGA-154281 at 1.67 lb/A plus 0.624 lb/A plus 0.166 lb/A. Common lambsquarters were greater than 90% controlled at 60 DAT by all treatments. Pennsylvania smartweed control at 60 DAT was similar to the 30 DAT rating - excellent for products containing mesotrione, isoxaflutole, or flumetsulam and clopyralid. Tall morningglory control was greater than 90% for only one treatment, 1.67 lb/A S-metolachlor plus 0.624 lb/A atrazine plus 0.166 lb/A mesotrione and CGA-154281, plus 1.0 lb/A simazine. (Dept. of Crop Sciences, University of Illinois, Urbana).

Table. Soil-applied herbicide programs for weed control in corn. Urbana, Illinois, 2003. (Maxwell, Sprague, and Hager).

Treatment	Appl Rate	Time	Zeamd 5-24	Setfa 5-24	Cheal 5-24	Polpy 5-24	Abuth 5-24	Phbpu 5-24	Zeamd 6-26	Setfa 6-26	Cheal 6-26	Polpy 6-26	Abuth 6-26	Phbpu 6-26
	(lb/A)		% inj			% control			% inj			% control		
S-metolachlor&atrazine &CGA-154281	1.56+2.02	ppi	0	94	96	94	79	79	0	95	91	86	50	60
Metolachlor&atrazine	2.0+1.58	ppi	0	95	97	92	73	75	0	94	94	89	57	65
S-metolachlor&atrazine &CGA-154281	1.56+2.02	pre	0	99	99	97	87	85	0	96	99	99	62	67
Metolachlor&atrazine	2.0+1.58	pre	0	98	99	97	76	83	0	94	98	94	62	62
S-metolachlor&atrazine &mesotrione&CGA-154281	1.67+0.624 0.166	pre	0	91	98	95	99	91	0	89	99	93	99	78
S-metolachlor&atrazine &mesotrione&CGA-154281	2.0+0.75 0.20	pre	0	99	99	99	99	96	0	97	99	99	99	85
S-metolachlor&atrazine &mesotrione&CGA-154281	1.67+0.624 0.166	pre	0	97	99	99	99	98	0	93	99	99	99	84
+atrazine	1.0													
S-metolachlor&atrazine &mesotrione&CGA-154281	2.0+0.75 0.20	pre	0	97	98	99	99	97	0	95	99	99	98	89
+atrazine	1.0													
S-metolachlor&atrazine &mesotrione&CGA-154281	1.67+0.624 0.166	pre	0	98	99	99	99	98	0	98	99	99	99	93
+simazine	1.0													
S-metolachlor&atrazine &mesotrione&CGA-154281	2.0+0.75 0.20	pre	0	98	99	99	99	98	0	97	99	99	99	89
+simazine	1.0													
Acetochlor&atrazine &MON4660	2.35+1.85	pre	0	99	99	99	84	89	0	98	99	95	77	82
Flufenacet+isoxaflutole	0.356+0.074	pre	0	95	99	97	99	80	0	94	97	81	98	76
Flufenacet+isoxaflutole	0.422+0.088	pre	0	96	96	96	99	84	0	93	93	84	98	80
Flufenacet+isoxaflutole	0.446+0.094	pre	0	94	97	94	99	86	0	92	94	84	98	83
Acetochlor&atrazine ¹	2.4+1.8	pre	0	99	99	99	88	89	0	99	99	99	67	75
Acetochlor&atrazine ¹	2.4+1.8	pre	0	99	99	99	92	90	0	99	99	99	73	82
+flumetsulam&clopyralid	0.035+0.094													
Acetochlor&atrazine ¹	1.2+0.9	pre	0	99	99	99	99	95	0	99	99	99	99	85
+isoxaflutole	0.094													
Dimethenamid-P&atrazine	0.98+1.9	pre	0	97	99	99	89	86	0	98	99	97	70	80
S-metolachlor&atrazine &CGA-154281	1.26+1.63	pre	0	94	99	97	77	80	0	94	95	92	65	73
Acetochlor&atrazine ²	2.1+1.4	pre	0	98	99	99	90	92	0	96	99	99	70	73
+flumetsulam&clopyralid	0.035+0.094													
Dimethenamid-P&atrazine +isoxaflutole	0.85+1.65 0.047	pre	0	99	99	99	99	92	0	96	97	96	99	81
Isoxaflutole+atrazine	0.07+1.5	pre	0	88	98	94	99	92	0	83	97	92	93	75
Check	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Isoxaflutole+atrazine	0.094+1.5	pre	0	96	99	99	99	95	0	94	99	96	95	83
S-metolachlor&mesotrione &CGA-154281	2.5+0.25	pre	0	94	96	97	99	89	0	95	97	95	98	83
Flufenacet+isoxaflutole +atrazine	0.375+0.039 1.5	pre	0	94	98	95	98	92	0	95	99	92	94	88
Flufenacet&isoxaflutole +atrazine	0.375+0.07 1.5	pre	0	97	99	96	99	92	0	98	99	96	98	88
KIH-485+atrazine +isoxaflutole	0.15+1.0 0.094	pre	0	98	99	98	99	96	0	98	99	97	99	89
LSD (0.05)			0	5	3	5	7	7	0	5	6	8	7	8

¹ Keystone; ² Fulltime