

Preemergence and early postemergence one-pass systems for weed control in corn. DeKalb, Illinois, 2002.

Hasty, Ryan F., Christy L. Sprague, and Douglas J. Maxwell. The objective of this research was to examine preemergence and early postemergence one-pass systems for weed control in corn. The study was established at the Northern Illinois Research and Education Center, DeKalb. The soil was a Drummer silty-clay loam with a pH of 6.0 and 6.0% organic matter. Pioneer 35P17 corn was planted 2 inches deep on May 5 in 30 inch rows. Treatments were arranged in randomized complete blocks with three replications of plots 10 by 28 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	May 5	June 7
Application	pre	vepost
Temperature (F)		
Air	76	70
Soil	60	67
Soil Moisture	Moist	Moist
Wind (mph)	9S	6S
Sky Cover (%)	0	0
Precip. after application		
Week 1 (inch)	1.37	0.07
Week 2 (inch)	2.22	0.01
Relative humidity (%)	36	59
Corn		
Leaf no.	-	3
Height (inch)	-	5
Giant Foxtail		
Leaf no.	-	1
Height (inch)	-	3
Common Lambsquarters		
Leaf no.	-	4
Height (inch)	-	0.75
Redroot Pigweed		
Leaf no.	-	3
Height (inch)	-	1
Velvetleaf		
Leaf no.	-	2
Height (inch)	-	1.5

No corn injury was observed from any treatment applied preemergence. Pre-mixes of S-metolachlor and mesotrione, and S-metolachlor, mesotrione, and atrazine applied very early postemergence caused corn injury ranging from 15% to 18%, 5 days after treatment (DAT). All treatments provided excellent control of giant foxtail, common lambsquarters, redroot pigweed, and velvetleaf. Weed control of all species exceeded 80% at 30 and 60 DAT. Corn grain yield in the untreated check was significantly lower than all other treatments, however, there were few differences among herbicides. (Dept. of Crop Sciences, University of Illinois, Urbana).

Table. Preemergence and early postemergence one-pass systems for weed control in corn. DeKalb, Illinois, 2002. (Hasty, Sprague, and Maxwell).

Treatment	Appl Rate (lb/A)	Time	Zeamd	Setfa	Cheal	Amare	Abuth	Zeamd	Setfa	Cheal	Amare	Abuth
			6-7 % inj	6-7 % control	6-7 % inj	6-7 % control	6-7 % inj	6-7 % control	7-5 % inj	7-5 % control	7-5 % inj	7-5 % control
S-meto&atra&CGA-154281	1.26+1.63	pre	0	99	99	99	87	0	97	99	98	91
S-meto&atra&CGA-154281	1.44+1.86	pre	0	99	99	99	90	0	98	99	99	96
Acet&atrazine&Mon4660 ¹	2.17+1.06	pre	0	98	99	99	83	0	96	99	99	90
Acetochlor&atra&Mon4660 ²	1.57+1.23	pre	0	98	99	99	97	0	90	99	99	92
Dimethenamid-p&atrazine	0.98+1.90	pre	0	99	99	99	90	0	99	99	99	92
Acetochlor&atrazine ³	2.0+1.33	pre	0	99	99	99	88	0	94	99	99	89
Acetochlor&atrazine ⁴	2.0+0.75	pre	0	99	99	99	93	0	98	99	99	82
Acetochlor&atrazine ⁵	2.0+1.50	pre	0	96	99	99	92	0	89	99	99	96
Acetochlor&atrazine ³ +flumetsulam&clopyralid	1.8+1.2 0.03+0.082	pre	0	98	99	99	90	0	86	99	99	87
Flufenacet&metribuzin+atra	0.65+0.16+1.5	pre	0	99	99	99	92	0	94	99	99	93
Check	-	-	0	0	0	0	0	0	0	0	0	0
Acetochlor&dichlormid +flumetsulam&clopyralid	2.0 0.03+0.082	pre	0	98	99	99	94	0	91	99	99	98
S-meto&meso&CGA-154281	1.46	pre	0	93	99	99	98	0	89	99	99	93
S-meto&meso&CGA-154281	1.83	pre	0	98	99	99	99	0	93	99	99	98
S-meto&meso&CGA-154281	2.20	pre	0	99	99	99	96	0	95	99	99	95
Flufenacet&isoxaflutole	0.45+0.09	pre	0	99	99	99	98	0	94	99	99	97
Isoxaflutole+atrazine	0.094+1.0	pre	0	99	99	99	98	0	94	99	99	98
Flufenacet&isoxaflutole+atra	0.39+0.08+1.25	pre	0	98	99	99	97	0	98	99	99	99
Flufenacet&isoxaflutole ⁶ +atra	0.67+1.5	pre	0	99	99	99	98	0	96	99	99	99
Flufenacet&isoxaflutole ⁶ +atra	0.76+1.5	pre	0	99	99	99	98	0	96	99	99	95
Flufenacet&isoxaflutole+atra +flufenacet&metribuzin	0.21+0.04+1.5 0.344+0.086	pre	0	99	99	99	99	0	98	99	99	96
S-metolachlor&mesotrione &atrazine&CGA-154281	1.34+0.5 +0.13	pre	0	99	99	99	95	0	99	99	99	97
S-metolachlor&mesotrione &atrazine&CGA-154281	1.67+0.62 +0.17	pre	0	94	99	98	97	0	90	99	98	98
S-metolachlor&mesotrione &atrazine&CGA-154281	2.0+0.75 +0.20	pre	0	99	99	99	97	0	96	99	99	96
Dimethenamid-p&atrazine +isoxaflutole	0.85+1.65 0.047	pre	0	99	99	99	98	0	98	99	99	96
S-metolachlor&mesotrione &atrazine&CGA-154281 +nicosulfuron+Herbimax	1.67+0.62 +0.17 0.016+1.0%	vepost	0	0	0	0	0	0	96	99	99	99
S-metolachlor&mesotrione &atrazine&CGA-154281 +nicosulfuron+Herbimax	2.0+0.75 +0.20 0.016+1.0%	vepost	0	0	0	0	0	0	93	99	99	99
S-meto&meso&CGA-154281 +nicosulfuron+Herbimax	1.83 0.016+1.0%	vepost	0	0	0	0	0	0	96	99	99	99
S-meto&meso&CGA-154281 +nicosulfuron+Herbimax	2.20 0.016+1.0%	vepost	0	0	0	0	0	0	97	99	99	99
Dimethenamid-p +dicamba&atrazine +NpakAMS	0.84 0.41+0.79 2.5%	pre vepost	0	99	13	23	0	0	97	99	99	98
LSD (0.05)			0	4	2	2	6	0	11	0	1	5

¹ Degree Xtra ² Harness Xtra ³ Fultime ⁴ Keystone LA ⁵ Keystone ⁶ USA 2001