

Experimental premixes applied preemergence in corn. Young, Bryan G. and Julie M. Young. This study was designed to evaluate experimental and commercial premix herbicides for corn response and weed control. The study was conducted on an Ebber silt loam with 1.4% organic matter and pH 5.7 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. Pioneer brand 'P33P69LL' glufosinate-resistant field corn was planted 1.5 inch deep at 28 000 seed/A into a reduced-till seedbed on May 27. Plots consisted of four rows with 30 inch row spacing, 25 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO₂ pressurized sprayer using 8003 flat fan tips at 40 PSI in 20 GPA water. Application timings were preemergence (PRE), spike to two leaf corn (SPIKE-2L) and 3 to 4 inch weeds (3-4"W). 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 >50 giant foxtail, 11 yellow nutsedge, 7 common cocklebur, 1 giant ragweed, 1 ivyleaf morningglory and 2 velvetleaf. Application information is listed below.

Date	May-28-02	Jun-3-02	Jun-14-02
Treatment	PRE	SPIKE-2L	3-4"W
Air temperature (F)	68	80	70
Relative humidity (%)	98	76	50
Soil moisture	normal	normal	wet
field corn			
leaf no.		V1	V3
height (inch)		3	6
giant foxtail			
leaf no.			3-4
height (inch)			3-4
yellow nutsedge			
leaf no.		0-4	3-5
height (inch)		0-3	3-5
common cocklebur			
leaf no.		0-2	3-4
height (inch)		0-1	3-4
giant ragweed			
leaf no.		0-2	4-8
height (inch)		0-1	3-4
ivyleaf morningglory			
leaf no.		0-2	
height (inch)		0-1	
velvetleaf			
leaf no.		0-2	3-4
height (inch)		0-1	3-4

Little to no corn injury was observed from all herbicide treatments except dimethenamid-P followed by dicamba & atrazine which caused 10% injury at 2 weeks after emergence (WAE). Giant foxtail control 8 WAE was at least 90% from all herbicide treatments applied at spike to 2 leaf, acetochlor & atrazine (Harness Xtra), and acetochlor & atrazine (Keystone LA). Limited rainfall for 13 days following the preemergence herbicide applications most likely reduced giant foxtail control from many herbicide treatments. All herbicide treatments applied at spike to 2 leaf controlled at least 90% of common cocklebur at 8 WAE except s-metolachlor 1.67 lb ai/A & mesotrione 0.167 lb ai/A (Camix) plus nicosulfuron. Dimethenamid-P followed by dicamba & atrazine was the only other herbicide treatment that controlled at least 90% of common cocklebur at 8 WAE. All herbicide treatments except acetochlor & dichlormid (Topnotch) followed by flumetsulam & clopyralid controlled at least 90% of giant ragweed and ivyleaf morningglory at 4 WAE. Due to heavy giant foxtail and common cocklebur infestations these weeds could not be rated at 8 WAE. Velvetleaf control was highly variable with only spike to 2 leaf herbicide treatments, isoxaflutole + atrazine, dimethenamid-P followed by dicamba & atrazine, and flufenacet & metribuzin + atrazine controlling greater than 90% of velvetleaf 8 WAE. Corn yield was greatest in plots treated at the spike to 2 leaf stage. (Dept. of Plant, Soil and General Agriculture, Southern Illinois University, Carbondale)

Table. Experimental premixes applied preemergence in corn. (Young and Young)

Treatment	Application		Corn yield bu/A	Corn injury				Control, weeks after emergence																
				weeks after emergence				SETFA				CYPES		XANST				AMBTR		IPOHE		ABUTH		
	Rate (lb/A)	Time		1 %	2 %	4 %	6 %	2 %	4 %	6 %	8 %	2 %	4 %	2 %	4 %	6 %	8 %	2 %	4 %	2 %	4 %	4 %	6 %	8 %
Nontreated			36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S-metolachlor&atra&meso &CGA-154281	1.67&0.624 &0.167	PRE	127	0	0	0	0	68	47	50		81		72	40	50		95		95		93	94	75
S-metolachlor&atra&meso &CGA-154281	2.0&0.75 &0.2	PRE	166	0	0	0	0	80	53	63		97		78	53	53		98		95		98	99	81
S-metolachlor&meso &CGA-154281	1.67&0.167	PRE	131	1	0	0	0	60	30	48		95		57	23	30		96		90		86	53	40
S-metolachlor&meso &CGA-154281	2.0&0.2	PRE	161	0	0	0	0	72	47	53		95		65	33	47		98		96		93	94	45
S-metolachlor&atrazine &CGA-154281(Bicep)	1.26&1.63	PRE	141	0	0	0	0	83	73	75		91		60	33	42		98		96		79	75	53
Isoxaflutole+atrazine	0.094+1.0	PRE	162	0	0	0	0	77	50	58		87		72	70	65		96		95		98	99	99
Acetochlor&atrazine &MON 4660(HarnX)	2.15&0.85	PRE	160	0	0	0	0	95	90	94		97		80	63	67		97		96		75	61	63
Acetochlor&dcmp(Topnt) +flumetsulam&clopyralid	2.0 +0.035&0.093	PRE	143	0	0	0	0	82	65	68		95		83	92	88		80		90		50	0	7
Dimethenamid-P/dicamba &atrazine+COC	0.85/0.413 &0.79+1.0%	PRE/3-4"W	166	0	10	0	0	87	68	67		96		98	99	99		99		99		96	93	96
S-metolachlor&atra&meso &CGA-154281 +nicosulfuron	1.67&0.624 &0.167 +0.0154	SPIKE-2L	171		0	0	0	97	97	93	91	95	99	96	95	92	90	99	99	94	99	99	99	99
S-metolachlor&atra&meso &CGA-154281 +nicosulfuron	2.0&0.75 &0.2 +0.0154	SPIKE-2L	184		0	0	0	99	98	97	95	96	97	98	97	96	99	99	98	97	97	99	99	99
S-metolachlor&meso &CGA-154281 +nicosulfuron	1.67&0.167 +0.0154	SPIKE-2L	173		0	0	0	99	96	93	93	95	96	95	90	83	63	99	98	96	96	99	99	99
S-metolachlor&meso &CGA-154281 +nicosulfuron	2.0&0.2 +0.0154	SPIKE-2L	187		0	0	0	98	95	94	92	98	96	95	95	96	92	98	98	97	96	99	99	99
S-metolachlor&atra&meso &CGA-154281 +AE F130360 01	2.0&0.75 &0.2 +0.0164	SPIKE-2L	176		2	0	0	99	98	98	98	99	99	96	97	96	97	99	99	96	97	99	99	99
S-metolachlor&meso &CGA-154281 +AE F130360 01	2.0&0.2 +0.0164	SPIKE-2L	186		0	0	0	98	96	94	93	98	99	97	95	93	92	99	99	97	98	99	99	99
Acetochlor&atrazine(KeyLA)	2.0&0.75	PRE	134	0	0	0	0	90	77	90		99		80	67	77		96		98		37	13	20
Acetochlor&atrazine(Keyst)	2.0&1.5	PRE	172	0	0	0	0	87	77	75		98		77	57	48		99		98		82	20	47
Acetochlor&atrazine(Fultm)	2.0&1.33	PRE	157	0	0	0	0	85	77	77		96		68	50	50		99		96		73	33	0
Flufenacet&metribuzin +atrazine	0.58&0.145 +2.0	PRE	170	0	0	0	0	85	70	73		85		84	70	70		99		99		99	86	96
USA-1999+atrazine	0.435+1.25	PRE	170	0	0	0	0	78	60	67		96		88	76	73		96		95		88	70	82
Flufenacet&metribuzin +USA-1999+atrazine	0.306&0.0766 +0.254+1.5	PRE	174	0	0	0	0	83	67	68		88		82	76	79		96		97		98	96	95
LSD			45	0.7	1	0	0	2	11	15	18	4	14	3	20	29	28	2	10	3	4	28	34	30
P			0.01	0.5	0.01	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

^ameso = mesotrione. Bicep II Magnum from Syngenta. Harness Xtra from Monsanto. Topnotch, Keystone LA, Keystone and Fulltime from Dow.

^bRatings at 2, 4, 6 and 8 weeks after emergence was also 2, 4, 6 and 8 weeks after SPIKE-2L application.