Glyphosate-resistant horseweed control in corn with late postemergence treatments. Butlerville, IN, 2004. Dewell, Reece A., William G. Johnson, J. Earl Creech, and Vince Davis. A field study was conducted to evaluate late postemergence treatments for glyphosate-resistant horseweed control in corn. The study was conducted on a Clermont silt loam soil with 1.3% organic matter at the Southeast Purdue Agricultural Center near Butlerville, IN. The study area received a blanket treatment of fluazifop-P & fenoxaprop + COC on May 24 (site preparation) to provide a relatively pure stand of horseweed. Treatments were arranged in a randomized complete block with four replications. Individual plot dimensions were 10 by 25 feet. Dekalb DKC 60-09 RR/YGCB corn was planted 1 inch deep into a no-till seedbed on June 5 in 30-inch rows, at a population of 29,000 seeds/acre. Late postemergence (LPOST) herbicide treatments were applied with a CO_2 backpack sprayer delivering 15 gpa and equipped with XR8002 flat fan nozzles. Application date, weed growth stage, and weather data are listed below:

Date	Jul 8, 2004
Treatment	LPOST
Temperature	
Air (F)	66
Soil (F)	72
Soil moisture	dry surface
Wind (mph)	calm
Cloud cover (%)	60
Relative humidity (%)	90
Precipitation	
Prior week (inch)	0.64
Week 1 (inch)	3.20
Week 2 (inch)	0.54
Corn (inch)	18 (V5-V6)
Horseweed (height)	6 to 12 inch
Horseweed (density)	100+ / m^2

Crop injury was less than 10% with all treatments except glufosinate. Horseweed control was 80% or higher on July 26 (18 DAT) with atrazine + mesotrione, halosulfuron + dicamba, dicamba + atrazine, and prosulfuron & primisulfuron (0.0178&0.0178 lb/A). Control with the two glyphosate alone treatments was less than 45%. On October 5 (89 DAT), control with the glyphosate alone treatments was less than 75%; however, a number of treatments provided greater than 90% control. Treatments which provided greater than 90% control at the end of the season included atrazine, atrazine + mesotrione, dicamba+diflenzopyr, primisulfuron & dicamba, primisulfuron & prosulfuron, dicamba & diflufenzopyr & nicosulfuron, halosulfuron, halosulfuron & dicamba, dicamba & atrazine, metribuzin, flumetsulam, flumetsulam & clopyralid. In conclusion, products containing atrazine, dicamba, metribuzin, primisulfuron & prosulfuron, and flumetsulam provided the best horseweed control. (Dept. Botany and Plant Pathology, Purdue University, West Lafayette, IN).

Table. Glyphosate-resistant horseweed control in corn with late postemergence treatments. Butlerville, IN, 2004. (Dewell, Johnson, Creech, and Davis).

Treatment[a]	Rate	Application	ZEAMX July 26[b]	ERICA July 26[b]	ERICA Oct 5[c]
	(lb/A)		% injury	% control	% control
Atrazine + COC	1.0+1.0qt	LPOST	4	76	91
Mesotrione + COC + AMS	0.094+1.0%+2.5	LPOST	8	41	50
Mesotrione + COC + AMS	0.047+1.0%+2.5	LPOST	3	41	50
Atrazine + mesotrione + COC + AMS	1.0+0.094+1.0%+2.5	LPOST	1	96	95
2,4-D (EH)	0.5	LPOST	6	55	81
Dicamba&diflufenzopyr + NIS + AMS	0.125+0.05+0.25%+2.5	LPOST	3	67	96
Glyphosate(WMAX) + AMS	0.77+2.5	LPOST	3	44	74
Glyphosate(WMAX) + AMS	1.12+2.5	LPOST	1	35	69
Primisulfuron&dicamba + COC + AMS	0.0233&0.137+1.0%+2.5	LPOST	4	68	96
Dicamba&diflufenzopyr&nicosulfuron +NIS + AMS	0.137+0.053+0.031 +0.25%+2.5	LPOST	1	61	99
Atrazine&nicosulfuron&rimsulfuron +MSO + AMS	0.745&0.0236&0.0114 +1.0%+2.5	LPOST	4	64	85
Foramsulfuron + atrazine + MSO + AMS	0.0328+0.75+1.0%+2.5	LPOST	6	54	60
Primisulfuron&prosulfuron + COC + AMS	0.0267+0.0089+1.0%+2.5	LPOST	5	78	95
Halosulfuron + COC + AMS	0.047+1.0%+2.5	LPOST	8	62	82
Halosulfuron&dicamba + COC + AMS	0.047+0.206+1.0%+2.5	LPOST	6	83	100
Dicamba&atrazine	0.413+0.79	LPOST	8	86	98
Metribuzin + 2,4-D(EH)	0.14+0.5	LPOST	6	54	91
Flumetsulam + COC	0.05+1.0%	LPOST	1	71	98
Flumetsulam&clopyralid + COC + AMS	0.0346&0.093+1.0%+2.5	LPOST	1	66	96
Glufosinate + AMS	0.365+2.5	LPOST	86	60	19
Prosulfuron&primisulfuron + COC + AMS	0.0178+0.0178+1.0%+2.5	LPOST	4	85	97
Untreated Check		LPOST	0	--	--
LSD (0.05)			6	19	23

[a] Treatments: COC = Prime Oil crop oil concentrate from Agriliance, LLC. (83% paraffin base petroleum oil); AMS = S-Sul sprayable ammonium sulfate from Agriliance, LLC; 2,4-D(EH) = ethylhexyl ester; NIS = Preference nonionic surfactant from Agriliance, LLC. (90% NIS blend containing soybean based fatty acid and alcohol ethoxylates); Glyphosate(WMAX) = Roundup Weathermax from Monsanto; MSO = Destiny modified vegetable oil and nonionic surfactant blend from Agriliance, LLC. (99.6% methylated seed oil, soybean oil, alkylphenol ethoxylate).

[b] Evaluation (July 26) is 18 DAT – LPOST

[c] Evaluation (October 5) is 89 DAT – LPOST