Glyphosate-resistant horseweed control in soybean 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 soybean. 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. Pioneer P93M80 soybean was drilled 1 inch deep into a no-till seedbed on June 5 in 7.5-inch rows, at a population of 204,500 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)	3
Cloud cover (%)	60
Relative humidity (%)	90
Precipitation	
Prior week (inch)	0.64
Week 1 (inch)	3.20
Week 2 (inch)	0.54
Soybean (inch)	10 (V4-V5)
Horseweed (height)	cotyledon to 12 inch
Horseweed (density)	100+ / m^2

Glyphosate alone at 0.77 lb/A provided 46, 60, and 69% control, respectively, at 18, 32, and 89 DAT. Glyphosate alone at 1.12 lb/A provided 76, 90, and 95% control, respectively, at 18, 32, and 89 DAT. Horseweed was controlled better than 88% at all three rating dates with cloransulam alone. Chlorimuron alone provided 81 to 84% control of horseweed at all three rating dates. 2,4-DB alone provided poor control. The addition of chlorimuron or cloransulam to glyphosate usually resulted in better control than glyphosate alone. The addition of 2,4-DB to glyphosate did not improve horseweed control, and may have resulted in reduced control in a couple of instances. Three-way mixtures of glyphosate + chlorimuron + 2,4-DB controlled horseweed 83 to 96% at all three rating dates. Three-way mixtures of glyphosate + cloransulam + 2,4-DB provided 69 to 97% control at all three rating dates. In conclusion, although the three way mixtures tended to provide the best control numerically over the three rating dates, crop injury concerns with 2,4-DB might limit it's use. The addition of chlorimuron or cloransulam to glyphosate appears to be the best tankmix partner for control of glyphosate resistant horseweed. (Dept. Botany and Plant Pathology, Purdue University, West Lafayette, IN).

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

Treatment[a]	Rate	Application	ERICA July 26[b]	ERICA August 9[c]	ERICA Oct 5[d]
	(lb/A)		% Control	% Control	% Control
Chlorimuron + COC + AMS	0.0078+1.0%+2.5	LPOST	81	84	84
Cloransulam + COC + AMS	0.0157+1.0%+2.5	LPOST	88	99	100
2,4-DB + AMS	0.0312+2.5	LPOST	12	24	18
Chlorimuron + 2,4-DB + COC + AMS	0.0078+0.0312+1.0%+2.5	LPOST	79	83	69
Cloransulam + 2,4-DB + COC + AMS	0.0157+0.0312+1.0%+2.5	LPOST	90	94	96
Glyphosate(WMAX) + AMS	0.77+2.5	LPOST	46	60	69
Glyphosate(WMAX) + AMS	1.16+2.5	LPOST	76	90	95
Glyphosate(WMAX) + chlorimuron + COC + AMS	0.77+0.0078+1.0%+2.5	LPOST	60	80	88
Glyphosate(WMAX) + chlorimuron + COC + AMS	1.16+0.0078+1.0%+2.5	LPOST	86	93	96
Glyphosate(WMAX) + cloransulam + COC + AMS	0.77+0.0157+1.0%+2.5	LPOST	73	89	97
Glyphosate(WMAX) + cloransulam + COC + AMS	1.16+0.0157+1.0%+2.5	LPOST	70	89	98
Glyphosate(WMAX) + 2,4-DB + AMS	0.77+0.0312+2.5	LPOST	58	68	68
Glyphosate(WMAX) + 2,4-DB + AMS	1.16+0.0312+2.5	LPOST	45	62	67
Glyphosate(WMAX) + chlorimuron + 2,4-DB +COC + AMS	0.77+0.0078+0.0312 +1.0%+2.5	LPOST	83	93	90
Glyphosate(WMAX) + chlorimuron + 2,4-DB +COC + AMS	1.16+0.0078+0.0312 +1.0%+2.5	LPOST	87	94	96
Glyphosate(WMAX) + cloransulam + 2,4-DB +COC + AMS	0.77+0.0157+0.0312 +1.0%+2.5	LPOST	83	93	98
Glyphosate(WMAX) + cloransulam + 2,4-DB +COC + AMS	1.16+0.0157+0.0312 +1.0%+2.5	LPOST	69	89	97
LSD (0.05)			17	21	19

[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; Glyphosate(WMAX) = Roundup Weathermax from Monsanto.
[b] Evaluation (July 26) is 18 DAT – LPOST.
[c] Evaluation (August 9) is 32 DAT – LPOST.
[d] Evaluation (October 5) is 89 DAT – LPOST.