

The effect of rate and timing of glyphosate on conventional corn. Urbana, Illinois, 2004. Maxwell, Douglas J., Joshua T. Kunkel, James L. Moody, and Jeffrey A. Bunting. The objective of this research was to evaluate the effect of rate and timing of glyphosate on conventional corn. The study was established at the Crop Sciences Research and Education Center, Urbana. The soil was a Drummer silty-clay loam with a pH of 6.4 and 5.3% organic matter. Golden Harvest 2552 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 30 feet. Herbicides were applied with a CO₂ backpack sprayer delivering 20 gpa and equipped with 8003 flat fan nozzles. Adjuvant rates were reduced to match the reductions in herbicide rates. Application information is listed below:

Date Application	May 19 vepost	May 26 epost	June 7 post	June 15 lpost	June 21 vlpost
Temperature (F)					
Air	83	75	86	80	77
Soil	70	72	83	77	75
Soil Moisture	moist	moist	moist	moist	moist
Wind (mph)	2-SE	6-SW	6-S	3-E	8-SW
Sky Cover (%)	100	0	50	100	100
Precip. after application					
Week 1 (inch)	0.58	0.20	2.41	0.38	0.29
Week 2 (inch)	0.20	0.0	0.70	0.29	0.83
Relative humidity (%)	80	42	50	60	55
Corn					
Leaf no.	2	4	6	8	12
Height (inch)	5	12	24	40	46

Crop injury was significant with the 0.15 lb/A and 0.075 lb/A glyphosate rate at all application timings. No significant crop injury or yield loss was measured at the two lower rates of 0.0075 lb/A and 0.00075 lb/A glyphosate when compared to the untreated check. Yield was negatively effected with the application rates of 0.15 lb/A and 0.075 lb/A causing drastic grain reductions at all crop stages. Glufosinate at 0.031 lb/A late postemergence caused minor visual injury and no significant yield loss. (Dept. of Crop Sciences, University of Illinois, Urbana).

Table. The effect of rate and timing of glyphosate on conventional corn. Urbana, Illinois, 2004. (Maxwell, Kunkel, Moody, and Bunting).

Treatment	Appl Rate (lb/A)	Time	Zeamd Zeamd Zeamd			Yield 9-27 Bu/A
			3DAT	7DAT	14DAT	
			----- % inj -----			
Glyphosate+N-PaK AMS ¹	0.15+1.0%	vepost	5	98	99	0.0
Glyphosate+N-PaK AMS	0.075+0.5%	vepost	4	77	94	25.2
Glyphosate+N-PaK AMS	0.0075+0.05%	vepost	0	0	0	226.3
Glyphosate+N-PaK AMS	0.00075+0.005%	vepost	0	0	0	259.6
Glyphosate+N-PaK AMS	0.15+1.0%	epost	5	90	99	0.0
Glyphosate+N-PaK AMS	0.075+0.5%	epost	4	78	85	44.1
Glyphosate+N-PaK AMS	0.0075+0.05%	epost	0	0	0	245.5
Glyphosate+N-PaK AMS	0.00075+0.005%	epost	0	0	0	237.1
Glyphosate+N-PaK AMS	0.15+1.0%	post	48	80	83	0.0
Glyphosate+N-PaK AMS	0.075+0.5%	post	10	8	48	11.1
Glyphosate+N-PaK AMS	0.0075+0.05%	post	0	0	0	231.1
Glyphosate+N-PaK AMS	0.00075+0.005%	post	0	0	0	244.1
Glyphosate+N-PaK AMS	0.15+1.0%	lpost	14	30	59	17.5
Glyphosate+N-PaK AMS	0.075+0.5%	lpost	10	14	33	89.2
Glyphosate+N-PaK AMS	0.0075+0.05%	lpost	0	0	0	239.2
Glyphosate+N-PaK AMS	0.00075+0.005%	lpost	0	0	0	230.0
Glyphosate+N-PaK AMS	0.15+1.0%	vlpost	2	17	60	10.4
Glyphosate+N-PaK AMS	0.075+0.5%	vlpost	0	6	33	27.9
Glyphosate+N-PaK AMS	0.0075+0.05%	vlpost	0	0	0	219.5
Glyphosate+N-PaK AMS	0.00075+0.005%	vlpost	0	0	0	241.0
Check	-	-	0	0	0	237.0
Glufosinate+N-PaK AMS	0.031+0.5%	lpost	7	8	3	221.8
LSD (0.05)			3	6	6	18

¹ N-PaK AMS is an ammonium sulfate solution from Agrilience LLC.