

Weed control in sunflower with sulfentrazone. Wait, Jim D., William G. Johnson. The objective of this study was to evaluate weed control with sulfentrazone alone or tank mixed with pendimethalin. This study was conducted at the Bradford Research and Extension Center near Columbia, MO. The soil was a Mexico silt loam with a pH of 5.8 and 2.3% organic matter. Mycogen 8377 was planted 1.0-inch deep on May 31 in 30-inch rows. Treatments were arranged in a randomized complete block design with four replications of 5 by 35 feet plots. Herbicide applications were made with a CO₂ backpack sprayer equipped with XR8002 flat fan nozzles. Application data is listed below:

Date Application	May 21 ppi pre	June 17 mpost	June 28 post dir
Temperature (F)			
air	90	85	84
soil	78	80	82
Soil moisture	moist	dry	dry
Wind (mph)	2	4	2
Cloud cover	0	65	10
Relative humidity (%)	60	49	70
Precipitation after application			
week 1 (inch)	0.63	0.00	0.28
week 2 (inch)	0.09	0.00	1.86
Sunflower			
stage	-	-	6
height (inch)	-	-	7
Yellow nutsedge			
leaf no.	-	2	5
height (inch)	-	3	7
infestation (sq. ft.)	-	1	1
Giant foxtail			
leaf no.	-	-	-
height (inch)	-	-	-
infestation (sq. ft.)	-	-	-
Common waterhemp			
node no.	-	-	-
height (inch)	-	-	-
infestation (sq. ft.)	-	-	-
Pitted morningglory			
node no.	-	coty	11
height (inch)	-	0.5	16
infestation (sq. ft.)	-	10	3

Crop injury was 20% with the PRE pendimethalin + sulfentrazone treatment, and $\leq 6\%$ with all other treatments. Yellow nutsedge control was $\geq 83\%$ with all treatments except the PRE pendimethalin + sulfentrazone and sulfentrazone 0.094 lb/a rate. Giant foxtail control was $\leq 41\%$ with PRE pendimethalin + sulfentrazone, the 2 low rate sulfentrazone treatments, and pendimethalin / carfentrazone. All other treatments provided $\geq 81\%$ control. Common waterhemp control was $\geq 96\%$ with all treatments at the July 29 rating. Pendimethalin + sulfentrazone + paraquat provided 84% control of pitted morningglory while all other treatments provided $\geq 79\%$ at 7-29 rating. The pendimethalin + sulfentrazone / paraquat treatment provided best overall weed control. (Department of Agronomy, University of Missouri-Columbia)

Table. Weed control in sunflower with sulfentrazone. (Wait and Johnson)

Application	Rate (lb/A)	App Time	Injury		CYPES		SETFA		AMATA		IPOLA	
			7-8	7-29	7-8	7-29	7-8	7-29	7-8	7-29	7-8	7-29
Pendimethalin ^a + sulfentrazone	1.49 + 0.187	pre	0	20	81	68	64	28	98	100	20	20
Pendimethalin ^a + sulfentrazone	1.24 + 0.187	ppi	0	0	49	93	94	96	100	100	82	65
Sulfentrazone	0.094	pre	3	0	45	45	81	0	99	96	32	51
Sulfentrazone	0.14	pre	0	3	75	83	66	25	100	100	34	53
Sulfentrazone	0.187	pre	2	6	99	98	85	81	100	100	53	59
Pendimethalin ^b / carfentrazone + NIS ^c	0.5 / 0.0083 + 0.25	pre / mpost	7	1	88	83	80	41	86	100	50	63
Pendimethalin ^b + sulfentrazone / carfentrazone + NIS	1.49 + 0.187 / 0.0075 + 1.0	pre / mpost	8	1	88	95	97	88	100	100	85	79
Pendimethalin ^b + sulfentrazone + paraquat + NIS	1.49 + 0.187 / 0.56 + 0.25	pre / post dir	2	3	95	93	99	100	100	100	96	84
Untreated			0	0	0	0	0	0	0	0	0	0
LSD (0.05)			2	14	39	27	17	37	6	4	29	44

^aPendimethalin (B) = Prowl from BASF^bPendimethalin (D) = Pendimax from Dow AgroSciences^cNIS = Astute, non-ionic surfactant from MFA Crop Advantage