

Plateau for short-term residual bareground weed control at Rosemount, MN - 1997 to 1998. Becker, Roger L. The objective of this study was to determine efficacy and longevity of Plateau (imazapic) and Plateau combinations for short-term residual bareground weed control. The experiment was conducted on a Waukegon silt loam soil at Rosemount, MN. The area was tilled in early June of 1997 and approximately one half of the plot area was seeded with winter wheat. The experimental design was a split plot with whole plots being the herbicide treatment and split plots wheat or no crop planted. Treatments were replicated three times. Whole plot size was 9 ft x 20 ft. Herbicide treatments were applied on July 10, 1997 to the center 6 ft of each plot with a backpack type sprayer delivering 20 gpa at 35 psi with 11002 nozzles. The predominant weed species emerged at application was redroot pigweed. Plots were rated on July 29 and August 28 in 1997 and on June 5 in 1998. Application data and control results are presented below.

Date Treated	7-10-97
Time	7:45-8:15 pm
Common lambsquarters	
Density (#/ft ²)	scattered
Height	0.25-1.0"
Stage	cotyledon to 4 lf
Eastern black nightshade	
Density (#/ft ²)	1-5
Height	0.25-0.5"
Stage	cotyledon to 1 lf
Giant foxtail	
Density (#/ft ²)	4-60
Height	0.25-4.0"
Stage	2-5 lf
Redroot pigweed	
Density (#/ft ²)	2-50
Height	0.5-3.0"
Stage	cotyledon to 5 leaf
Winter wheat	
Height	3-4"
Stage	2-3 lf
Wind (mph)	1-4 S
Temperature (°F)	
Air	62
Soil	57
Soil Moisture	moist
Relative Humidity (%)	70
Cloud Cover (%)	clear
Rainfall before	
Application	
Week 1 (inch)	0.86
Rainfall after	
Application	
Week 1 (inch)	3.27
Week 2 (inch)	3.91

The glyphosate treatment provided a reference for no residual herbicide. Imazapic provided excellent bareground weed control 11 months after treatment (11 MAT). Imazapic alone provided good control of grasses 11 MAT which was enhanced by residual herbicide tank mixes. The inclusion of glyphosate at application improved grass control 11 MAT which most likely is an anomaly, or perhaps related to imazapic exposure time on plants after application, less plant metabolism, etc. Broadleaf weed control was excellent with imazapic 11 MAT with or without residual tank mix partners.

Table. Plateau (imazapic) for short-term residual bareground weed control at Rosemount, MN - 1997 to 1998 (Becker).

Treatment	Rate (lb/A)	Control										
		7-29-97		8-28-97						6-5-98		
		Rrpw	Wheat	Colq	Gift	Ebns	Rrpw	Smcg	Wheat	Grass	Broadleaf weeds	
Imazapic + MSO ¹	0.188 + 1.25%	100	100	100	100	100	100	100	100	100	69	99
Glyphosate	1.0	100	100	97	97	85	93	90	99		0	0
Imazapic + glyphosate	0.188 + 1.0 100	100	100	100	100	100	100	100	100	100	88	99
Imazapic + pendimethalin + MSO	0.188 + 4.0 + 1.25%	100	100	100	100	100	100	100	100	100	91	100
Imazapic + diuron + MSO	0.188 + 4.8 + 1.25%	100	100	100	100	100	100	100	100	100	90	100
Imazapic + diuron + MSO	0.188 + 6.4 + 1.25%	100	100	100	100	100	100	100	100	100	98	100
Imazapic + diuron + MSO	0.188 + 8.0 + 1.25%	100	100	100	100	100	100	100	100	100	91	100
Sulfometuron + diuron + X-77 ²	0.0937 + 6.4 + 0.25%	100	100	100	100	100	100	100	100	100	98	100
Imazapyr & diuron ³ + MSO	0.778 & 6.2 + 1.25%	100	100	100	100	100	100	100	100	100	95	99
LSD (0.05)		ns	ns	1.9	1.1	14.1	2.6	2.8	0.5		10.7	0.5

¹ MSO = methylated soybean oil.

² X-77 = nonionic surfactant.

³ Premix = Sahara 70DG.