Evaluation of tank mix partners with glyphosate in field corn at Rochester, MN, in 2007.

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The objective of this trial was to evaluate tank mix partners with glyphosate for weed control in field corn in southeastern Minnesota. The research site was a Terril loam with a pH of 6.1 and soil test P and K levels of 51 ppm and 81 ppm, respectively. Anhydrous ammonia was applied at 150 lbs/a in the spring. The field was field cultivated in the spring prior to planting. The corn hybrid, NK N38B4, was planted on May 3, 2007 at a depth of 1.5 inches in 30 inch rows at 32,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) and postemergence (POST I and POST II) treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. Evaluations of the plots were taken on May 29, June 8, June 15, June 26, and September 11. Application dates, environmental conditions, and weed stages are listed below. Eight feet of each of the center two rows of the plots were hand harvested on September 17, 2007.

Date	**May 4**	**June 8**	**June 15**
Treatment	PRE	POST I	POST II
Temperature (F)			
Air	56	64	87
soil	--	--	87.8
Relative Humidity (%)	57	38	35
Wind (mph)	23	18	9
Soil moisture	adequate	inadequate	dry
Corn			
stage	--	5 collar	8 collar
height (inch)	--	10.2	20.0
Common Lambsquarters			
weed density (ft^2)	--	3.1	3.1
height (inch)	--	2.0	9.0
Velvetleaf			
weed density (ft^2)	--	1.1	1.1
height (inch)	--	1.3	7.0
Giant Foxtail			
weed density (ft^2)	--	0.6	0.6
height (inch)	--	2.8	9.0
Rainfall after each application (inch)			
week 1	0.52	0.0	2.97
week 2	0.34	2.97	0.52
week 3	2.41	0.52	0.21

CONCLUSIONS

Very dry conditions resulted in very poor herbicidal activity for the preemergence herbicides. Post emergence herbicide all performed similarly with weed control in the low to upper ninety percent range for common lambsquarters, velvetleaf, and giant foxtail Table 1, 2 & 3. Corn grain yield was not significantly different for any of the herbicide programs in this trial. All of the treatments except the Callisto + Aatrex + Roundup Weather Max + AMS treatment provided significantly higher corn grain yield than the untreated check.

Table 1. Performance of herbicide systems for common lambsquarters control in field corn on May 29 June 8, June 15, June 26, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Common Lambsquarters Control					Yield
		5/29	6/8	6/15	6/26	9/11	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	161
POST I							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	96	99	99	191
Status + Roundup Weather Max + AMS	2.5 oz + 22 fl oz + 8.5 lb	0	0	92	99	99	188
Callisto + Aatrex + Roundup Weather Max + AMS	1.5 fl oz + 16 fl oz + 22 fl oz + 8.5 lb	0	0	98	99	99	179
BAS 756 + AMS + NIS	2.5 pt + 8.5 lb + 0.25% v/v	0	0	74	91	91	201
PRE / POST I							
Outlook / Roundup Weather Max + AMS	12 fl oz / 22 fl oz + 8.5 lb	30	0	99	98	99	189
Outlook / Status + Roundup Weather Max + AMS	12 fl oz / 2.5 oz + 22 fl oz + 8.5 lb	30	0	98	99	99	187
POST II							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	0	91	93	187
	LSD (P=0.10)	**0**	**0**	**3**	**2**	**2**	**24**

Table 2. Performance of herbicide systems for velvetleaf control in field corn on May 29 June 8, June 15, June 26, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Velvetleaf Control					Yield
		5/29	6/8	6/15	6/26	9/11	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	161
POST I							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	99	98	99	191
Status + Roundup Weather Max + AMS	2.5 oz + 22 fl oz + 8.5 lb	0	0	99	99	99	188
Callisto + Aatrex + Roundup Weather Max + AMS	1.5 fl oz + 16 fl oz + 22 fl oz + 8.5 lb	0	0	99	99	99	179
BAS 756 + AMS + NIS	2.5 pt + 8.5 lb + 0.25% v/v	0	0	99	99	99	201
PRE / POST I							
Outlook / Roundup Weather Max + AMS	12 fl oz / 22 fl oz + 8.5 lb	30	0	98	98	99	189
Outlook / Status + Roundup Weather Max + AMS	12 fl oz / 2.5 oz + 22 fl oz + 8.5 lb	30	0	98	99	99	187
POST II							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	0	96	99	187
	LSD (P=0.10)	**0**	**0**	**1**	**1**	**0.4**	**24**

Table 3. Performance of herbicide systems for weed control in field corn on May 29 June 8, June 15, June 26, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Giant Foxtail Control					Yield
		5/29	6/8	6/15	6/26	9/11	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	161
POST I							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	99	99	99	191
Status + Roundup Weather Max + AMS	2.5 oz + 22 fl oz + 8.5 lb	0	0	98	99	99	188
Callisto + Aatrex + Roundup Weather Max + AMS	1.5 fl oz + 16 fl oz + 22 fl oz + 8.5 lb	0	0	99	99	99	179
BAS 756 + AMS + NIS	2.5 pt + 8.5 lb + 0.25% v/v	0	0	97	99	99	201
PRE / POST I							
Outlook / Roundup Weather Max + AMS	12 fl oz / 22 fl oz + 8.5 lb	30	99	99	99	99	189
Outlook / Status + Roundup Weather Max + AMS	12 fl oz / 2.5 oz + 22 fl oz + 8.5 lb	30	98	99	99	99	187
POST II							
Roundup Weather Max + AMS	22 fl oz + 8.5 lb	0	0	0	99	99	187
	LSD (P=0.10)	**0**	**1**	**1**	**0**	**0**	**24**