Evaluation of Permit and Yukon tank mix partners in field corn at Rochester, MN, in 2007.

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The objective of this trial was to evaluate herbicide systems for weed control in field corn with Permit and Yukon tank mix partners in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.7 and soil test P and K levels of 22 ppm and 126 ppm, respectively. Spring fertilizer was broadcast ahead of planting on April 13, at a rate of 99-23-60-24 (N-P-K-S). The area was side dressed with an additional 30 lb/A of N on June 7. The field was spring disked twice and field cultivated once prior to planting. The corn hybrid, Producers 5623YGCBRR, was planted on April 28, 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. Postemergence (POST) 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 4, June 11, June 29, and August 7. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on September 26, 2007.

Date	**May 23**
Treatment	POST
Temperature (F)	
Air	70
soil	69
Relative Humidity (%)	70
Wind (mph)	23
Soil moisture	excessive
Corn	
stage	2 collar
height (inch)	4.0
Giant Ragweed	
weed density (ft^2)	1.8
height (inch)	3.4
Common Lambsquarters	
weed density (ft^2)	21.5
height (inch)	2
Common Waterhemp	
weed density (ft^2)	89.4
height (inch)	1.2
Giant Foxtail	
weed density (ft^2)	3.0
height (inch)	4
Rainfall after each application (inch)	
week 1	2.04
week 2	1.28
week 3	0.08

CONCLUSIONS

The addition of Permit or Yukon to Roundup Original Max resulted in statistically higher weed control for giant ragweed, common lambsquarters, and velvetleaf when compared to Roundup Original Max applied alone (8/7 rating).

The addition of Yukon to Roundup Original Max (6/29 rating) resulted in significantly higher common waterhemp control compared to Roundup Original Max applied alone or Roundup Original Max tank mixed with Permit.

The addition of Permit or Yukon to Roundup Original Max resulted in statistically higher weed control for giant foxtail when compared to Roundup Original Max applied alone (6/29 rating).

No crop injury response from herbicide application was observed throughout the duration of this trial. (University of Minnesota Extension, Regional Center, Rochester, MN).

Table 1. Performance of herbicide systems for giant ragweed control in field corn on May 29, June 4, June 11, June 29, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Giant Ragweed Control					Yield
		5/29	6/4	6/11	6/29	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	3
POST							
Permit + Roundup Original Max + NIS + AMS	0.67 oz + 32 oz + 0.25% v/v + 3 lb	94	94	97	94	97	77
Permit + Roundup Original Max + NIS + AMS	0.5 oz + 32 fl oz + 0.25% v/v + 3 lb	92	94	96	94	97	87
Yukon + Roundup Original Max + NIS + AMS	4 oz + 32 fl oz + 0.25% v/v + 3 lb	97	94	98	97	97	75
Yukon + Roundup Original Max + NIS + AMS	3 oz + 32 fl oz + 0.25% v/v + 3 lb	93	91	96	95	97	83
Roundup Original Max + NIS + AMS	32 fl oz + 0.25% v/v + 3 lb	83	80	83	66	70	73
	LSD (P=0.10)	**4**	**3**	**3**	**3**	**5**	**17**

Table 2. Performance of herbicide systems for common lambsquarters control in field corn on May 29, June 4, June 11, June 29, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Common Lambsquarters Control					Yield
		5/29	6/4	6/11	6/29	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	3
POST							
Permit + Roundup Original Max + NIS + AMS	0.67 oz + 32 oz + 0.25% v/v + 3 lb	94	98	99	96	97	77
Permit + Roundup Original Max + NIS + AMS	0.5 oz + 32 fl oz + 0.25% v/v + 3 lb	95	98	99	96	99	87
Yukon + Roundup Original Max + NIS + AMS	4 oz + 32 fl oz + 0.25% v/v + 3 lb	97	99	99	99	99	75
Yukon + Roundup Original Max + NIS + AMS	3 oz + 32 fl oz + 0.25% v/v + 3 lb	96	99	99	96	99	83
Roundup Original Max + NIS + AMS	32 fl oz + 0.25% v/v + 3 lb	96	95	86	72	69	73
	LSD (P=0.10)	**2**	**3**	**3**	**7**	**4**	**17**

Table 3. Performance of herbicide systems for common waterhemp control in field corn on May 29, June 4, June 11, June 29, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Common Waterhemp Control					Yield
		5/29	6/4	6/11	6/29	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	3
POST							
Permit + Roundup Original Max + NIS + AMS	0.67 oz + 32 oz + 0.25% v/v + 3 lb	40	76	69	53	55	77
Permit + Roundup Original Max + NIS + AMS	0.5 oz + 32 fl oz + 0.25% v/v + 3 lb	36	75	69	58	59	87
Yukon + Roundup Original Max + NIS + AMS	4 oz + 32 fl oz + 0.25% v/v + 3 lb	39	85	86	73	75	75
Yukon + Roundup Original Max + NIS + AMS	3 oz + 32 fl oz + 0.25% v/v + 3 lb	38	84	84	71	74	83
Roundup Original Max + NIS + AMS	32 fl oz + 0.25% v/v + 3 lb	36	74	78	51	64	73
	LSD (P=0.10)	**3**	**3**	**9**	**5**	**12**	**17**

Table 4. Performance of herbicide systems for giant foxtail control in field corn on May 2,9 June 4, June 11, June 29, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Giant Foxtail Control					Yield
		5/29	6/4	6/11	6/29	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	3
POST							
Permit + Roundup Original Max + NIS + AMS	0.67 oz + 32 oz + 0.25% v/v + 3 lb	96	96	99	95	87	77
Permit + Roundup Original Max + NIS + AMS	0.5 oz + 32 fl oz + 0.25% v/v + 3 lb	96	94	98	92	84	87
Yukon + Roundup Original Max + NIS + AMS	4 oz + 32 fl oz + 0.25% v/v + 3 lb	97	93	97	91	80	75
Yukon + Roundup Original Max + NIS + AMS	3 oz + 32 fl oz + 0.25% v/v + 3 lb	97	94	97	93	76	83
Roundup Original Max + NIS + AMS	32 fl oz + 0.25% v/v + 3 lb	97	86	90	83	73	73
	LSD (P=0.10)	**1**	**3**	**1**	**6**	**8**	**17**

Table 5. Performance of herbicide systems for velvetleaf control in field corn on June 11, June 29, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Velvetleaf Control			Yield
		6/11	6/29	8/7	
	(rate/A)		(%)		(bu/A)
Untreated Check		0	0	0	3
POST					
Permit + Roundup Original Max + NIS + AMS	0.67 oz + 32 oz + 0.25% v/v + 3 lb	99	99	99	77
Permit + Roundup Original Max + NIS + AMS	0.5 oz + 32 fl oz + 0.25% v/v + 3 lb	99	95	98	87
Yukon + Roundup Original Max + NIS + AMS	4 oz + 32 fl oz + 0.25% v/v + 3 lb	99	99	99	75
Yukon + Roundup Original Max + NIS + AMS	3 oz + 32 fl oz + 0.25% v/v + 3 lb	99	99	98	83
Roundup Original Max + NIS + AMS	32 fl oz + 0.25% v/v + 3 lb	88	63	72	73
	LSD (P=0.10)	**1**	**4**	**9**	**17**