Evaluation of Capreno Herbicide Programs in Field Corn in SE Minnesota in 2010.

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The objective of this trial was to evaluate the performance of Capreno herbicide programs for weed control in corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.6, O.M. of 2.4%, and soil test P and K levels of 39 ppm and 113 ppm, respectively. Spring fertilizer was broadcast ahead of planting on April 5, 2010 at a rate of 126-35-120-24 (N-P-K-S). The area was side dressed with an additional 26 lb/A of N on June 10. The field was spring chisel plowed, disked and field cultivated once prior to planting. The corn hybrid, DeKalb DKC52-59, was planted on April 20, 2010 at a depth of 1.5 inches in 30 inch rows at 35,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) and 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 17, 24, June 3, 9, 23, and September 20, 2010. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on October 11, 2010.

Summary: A late frost on May 9 impacted the trial resulting in greater than 50 percent frost damage across all plots. However, plant stand was not negatively impacted with the frost. Giant ragweed was the dominate weed in this trial. PRE and early V1-V2 POST I applications of herbicides did not provide enough residual control of giant ragweed and crop yields were negatively impacted. POST II applications at the V3-V4 stage did provide adequate giant ragweed control and the resulting yields reflect this.

1. Including Dual II Magnum herbicide with Capreno (PRE) improved weed control for all weed species except giant ragweed.

2. Capreno tank mixed with Laudis provided better giant ragweed control than Capreno tank mixed with Roundup PowerMax. Corn yields were positively impacted with the Laudis tank mix. Improved control of other weed species was not observed in this trial.

3. The Laudis plus Dual II Magnum tank mixed with either COC or MSO provided the same weed control level. Also, no differences in crop response were detected between the two treatments. (University of Minnesota Extension Regional Office, Rochester)

Date	**4/21**	**5/7**	**5/24**
Treatment	PRE	POST I	POST II
Temperature (F)			
Air	64.0	81	82
Soil	64.0	66.5	73.4
Relative Humidity (%)	39	43	64
Wind (mph)	13	8	17
Soil Moisture	Adequate	Adequate	Inadequate
Corn			
Stage		V2	V3-V4
Height (inch)		1.9	4.0
Giant Ragweed			
Weed density (ft^2)			12.3
Height (inch)		1.31	3.5
Common Lambsquarters			
Weed density (ft^2)			3.0
Height (inch)		0.63	1.5
Common Waterhemp			
Weed density (ft^2)			2.0
Height (inch)		0.57	0.75
Woolly Cupgrass			
Weed density (ft^2)			3.5
Height (inch)		0.69	1.5
Rainfall after each application (inch)			
Week 1	0.38	0.04	0.17
Week 2	0.60	0.17	1.43
Week 3	1.70	1.43	1.28

Table 1. Performance of Capreno herbicide systems for giant ragweed control in field corn on May 17, 24, June 3, 9, 23 and September 20 at Rochester, MN in 2010.

Treatment	Rate	Giant Ragweed Control						Yield
		5/17	5/24	6/3	6/9	6/23	9/20	
	(rate/A)	(% Control)						(bu/A)
Untreated Check		0	0	0	0	0	0	1
PRE								
Capreno	3 fl oz/a	39	64	56	30	16	13	13
Capreno + Dual II Magnum	3 fl oz/a + 0.75 pt/a	44	65	55	39	23	23	2
POST I (V1-V2 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--	92	87	87	88	76	98
Capreno + Laudis + MSO + AMS	3 fl oz/a + 3 fl oz/a + 1% v/v + 1.5 lb/a	--	82	89	92	92	84	149
Laudis + COC + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	81	89	90	88	79	107
Laudis + MSO + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	88	87	87	87	77	99
POST II (V4-V5 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--		97	97	94	91	182
LSD (P=0.10)		**4**	**5**	**5**	**6**	**6**	**5**	**20**

Table 2. Performance of Capreno herbicide systems for common lambsquarters control in field corn on May 17, 24, June 3, 9, 23, and September 20 at Rochester, MN in 2010.

Treatment	Rate	Common Lambsquarters Control						Yield
		5/17	5/24	6/3	6/9	6/23	9/20	
	(rate/A)	(% Control)						(bu/A)
Untreated Check		0	0	0	0	0	0	1
PRE								
Capreno	3 fl oz/a	97	97	94	97	85	85	13
Capreno + Dual II Magnum	3 fl oz/a + 0.75 pt/a	99	98	97	98	99	99	2
POST I (V1-V2 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--	99	98	96	96	99	98
Capreno + Laudis + MSO + AMS	3 fl oz/a + 3 fl oz/a + 1% v/v + 1.5 lb/a	--	97	98	97	98	99	149
Laudis + COC + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	99	97	96	93	94	107
Laudis + MSO + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	99	99	96	94	93	99
POST II (V4-V5 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--		99	97	98	99	182
LSD (P=0.10)		**1**	**2**	**2**	**2**	**4**	**3**	**20**

Table 3. Performance of Capreno herbicide systems for common waterhemp control in field corn on May 17, 24, June 3, 9, 23, and September 20 at Rochester, MN in 2010.

Treatment	Rate	Common Waterhemp Control						Yield
		5/17	5/24	6/3	6/9	6/23	9/20	
	(rate/A)	(% Control)						(bu/A)
Untreated Check		0	0	0	0	0	0	1
PRE								
Capreno	3 fl oz/a	98	98	93	96	80	80	13
Capreno + Dual II Magnum	3 fl oz/a + 0.75 pt/a	99	99	98	96	99	94	2
POST I (V1-V2 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--	98	90	83	84	84	98
Capreno + Laudis + MSO + AMS	3 fl oz/a + 3 fl oz/a + 1% v/v + 1.5 lb/a	--	96	97	94	90	89	149
Laudis + COC + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	97	98	97	94	95	107
Laudis + MSO + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	97	98	95	87	88	99
POST II (V4-V5 corn								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--		98	96	86	86	182
	LSD (P=0.10)	**1**	**3**	**2**	**3**	**4**	**6**	**20**

Table 4. Performance of Capreno herbicide systems for woolly cupgrass control in field corn on May 17, 24, June 3, 9, 23, and September 20 at Rochester, MN in 2010.

Treatment	Rate	Woolly Cupgrass Control						Yield
		5/17	5/24	6/3	6/9	6/23	9/20	
	(rate/A)	(% Control)						(bu/A)
Untreated Check		0	0	0	0	0	0	1
PRE								
Capreno	3 fl oz/a	70	73	70	66	65	65	13
Capreno + Dual II Mag	3 fl oz/a + 0.75 pt/a	78	79	81	79	83	83	2
POST I (V1-V2 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--	88	90	90	83	84	98
Capreno + Laudis + MSO + AMS	3 fl oz/a + 3 fl oz/a + 1% v/v + 1.5 lb/a	--	82	86	88	84	84	149
Laudis + COC + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	79	88	90	87	89	107
Laudis + MSO + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	--	80	88	92	88	89	99
POST II (V4-V5 corn)								
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	--		95	94	88	87	182
	LSD (P=0.10)	**2**	**4**	**4**	**4**	**3**	**3**	**20**

Table 5. Crop response to frost on May 9, rated on May 17 and herbicide systems rated on May 24 Rochester, MN, in 2010.

Treatment	Rate	Injury		Yield
		5/17 – Frost Damage	5/24 - Chemical	
	(rate/A)	(%)		(bu/A)
Untreated Check		66	0	1
PRE				
Capreno	3 fl oz/a	59	0	13
Capreno + Dual II Magnum	3 fl oz/a + 0.75 pt/a	61	0	2
POST I (V1-V2 corn)				
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	61	4	98
Capreno + Laudis + MSO + AMS	3 fl oz/a + 3 fl oz/a + 1% v/v + 1.5 lb/a	60	7	149
Laudis + COC + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	50	8	107
Laudis + MSO + AMS + Dual II Magnum	3 fl oz/a + 1% v/v + 1.5 lb/a + 0.75 pt/a	59	6	99
POST II (V4-V5 corn)				
Capreno + Roundup PowerMax + COC + AMS	3 fl oz/a + 11 fl oz/a + 1% v/v + 1.5 lb/a	55	0	182
	LSD (P=0.10)	**10**	**2**	**20**