Performance of OpTill Herbicide Systems for Weed Control in Soybean at Rochester, MN, in 2009

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The objective of this trial was to evaluate the performance of OpTill herbicide programs for weed control in soybeans in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.8 and soil test P and K levels of 95 ppm and 225 ppm, respectively. The field was spring disked and field cultivated once prior to planting. The soybean hybrid, NK S19-A6, was planted on May 19, 2009 at a depth of 1.5 inches in 30 inch rows at 150,000 seeds per acre. A randomized complete block design was used with four replications. Preplant incorporated (PPI), Preemergence (PRE) and postemergence (POST) treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. The PPI treatment was incorporated with a field cultivator immediately after application. Evaluations of the plot were taken on June 15 and 25, July 6, 13, 20 and 28 . Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on October 20, 2009. (University of Minnesota Extension Regional Office, Rochester)

Date	**5/19**	**5/19**	**6/22**
Treatment	PPI	PRE	POST I
Temperature (F)			
Air	83	93	84
Soil	69.8	67.5	75.4
Relative Humidity	38	23	62
Wind (mph)	16	23	5
Soil Moisture	Inadequate	Inadequate	Excessive
Soybean			
Stage			V2
Height (inches)			5.0
Giant Ragweed			
Weed Density (ft^2)			7.3
Height (inches)			5.4
Common Lambsquarters			
Weed Density (ft^2)			5.1
Height (inches)			1.7
Common Waterhemp			
Weed Density (ft^2)			2.0
Height (inches)			1.9
Velvetleaf			
Weed Density (ft^2)			2.0
Height (inches)			1.9
Giant foxtail			
Weed Density (ft^2)			2.1
Height (inches)			3.4
Rainfall after each application			
Week 1	1.13	1.13	
Week 2	0.82	0.82	
Week 3	1.75	1.75	

Table 1. Performance of OpTill herbicide systems for giant ragweed control in soybeans at Rochester, MN, in 2009.

Treatment	Rate	Giant Ragweed Control					Yield
		6/15	6/25	7/13	7/20	7/28	
	(rate/A)	(% Control)					(bu/A)
Untreated Check		0	0	0	0	0	4.7
PPI / POST I							
OpTill + Prowl H2O / Roundup PowerMax + NIS + AMS	2 oz wt/a + 32 fl oz/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	83	96	97	99	99	33.0
PRE / POST I							
OpTill / Roundup PowerMax + NIS + AMS	2 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	82	96	96	98	98	33.2
Valor SX / Roundup PowerMax + NIS + AMS	2.5 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	58	95	94	97	97	31.6
	LSD (P=0.10)	**5**	**2**	**3**	**2**	**1**	**3.0**

Table 2. Performance of OpTill herbicide systems for common lambsquarters control in soybeans at Rochester, MN, in 2009.

Treatment	Rate	Common Lambsquarters Control					Yield
		6/15	6/25	7/13	7/20	7/28	
	(rate/A)	(% Control)					(bu/A)
Untreated Check		0	0	0	0	0	4.7
PPI / POST I							
OpTill + Prowl H2O / Roundup PowerMax + NIS + AMS	2 oz wt/a + 32 fl oz/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	99	99	99	99	99	33.0
PRE / POST I							
OpTill / Roundup PowerMax + NIS + AMS	2 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	99	99	99	99	99	33.2
Valor SX / Roundup PowerMax + NIS + AMS	2.5 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	66	97	97	98	97	31.6
	LSD (P=0.10)	**7**	**2**	**2**	**1**	**2**	**3.0**

Table 3. Performance of OpTill herbicide systems for common waterhemp control in soybeans at Rochester, MN, in 2009.

Treatment	Rate	Common Waterhemp Control					Yield
		6/15	6/25	7/13	7/20	7/28	
	(rate/A)	(% Control)					(bu/A)
Untreated Check		0	0	0	0	0	4.7
PPI / POST I							
OpTill + Prowl H2O / Roundup PowerMax + NIS + AMS	2 oz wt/a + 32 fl oz/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	91	99	98	99	99	33.0
PRE / POST I							
OpTill / Roundup PowerMax + NIS + AMS	2 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	91	99	97	99	97	33.2
Valor SX / Roundup PowerMax + NIS + AMS	2.5 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	93	99	98	99	97	31.6
	LSD (P=0.10)	**4**	**1**	**2**	**1**	**2**	**3.0**

Table 4. Performance of OpTill herbicide systems for velvetleaf control in soybeans at Rochester, MN, in 2009.

Treatment	Rate	Velvetleaf Control					Yield
		6/25	7/6	7/13	7/20	7/28	
	(rate/A)	(% Control)					(bu/A)
Untreated Check		0	0	0	0	0	4.7
PPI / POST I							
OpTill + Prowl H2O / Roundup PowerMax + NIS + AMS	2 oz wt/a + 32 fl oz/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	99	99	99	99	99	33.0
PRE / POST I							
OpTill / Roundup PowerMax + NIS + AMS	2 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	99	99	99	99	99	33.2
Valor SX / Roundup PowerMax + NIS + AMS	2.5 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	99	99	99	99	99	31.6
	LSD (P=0.10)	**1**	**1**	**1**	**1**	**1**	**3.0**

Table 5. Performance of OpTill herbicide systems for giant foxtail control in soybeans at Rochester, MN, in 2009.

Treatment	Rate	Giant Foxtail Control					Yield
		6/15	6/25	7/13	7/20	7/28	
	(rate/A)	(% Control)					(bu/A)
Untreated Check		0	0	0	0	0	4.7
PPI / POST I							
OpTill + Prowl H2O / Roundup PowerMax + NIS + AMS	2 oz wt/a + 32 fl oz/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	89	99	99	99	99	33.0
PRE / POST I							
OpTill / Roundup PowerMax + NIS + AMS	2 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	80	99	99	99	99	33.2
Valor SX / Roundup PowerMax + NIS + AMS	2.5 oz wt/a / 22 fl oz/a + 0.25% v/v + 17 lb/100 gal	85	98	99	99	99	31.6
	LSD (P=0.10)	**3**	**1**	**1**	**1**	**1**	**3.0**