

Evaluation of clethodim<sup>1,2</sup> products tank mixed with thifensulfuron for the control of wild proso millet, common lambsquarters, and velvetleaf in soybean at Potsdam, MN in 2005. Breitenbach, Fritz R., Lisa M. Behnken, Matthew M. White, and Krista M. Sheehan. The objective of this trial was to evaluate clethodim formulations in combination with thifensulfuron for wild proso millet, common lambsquarters, and velvetleaf control in soybean in southeastern Minnesota. The research site was a Port Byron silt loam containing 3.2% organic matter with a pH of 6.7 and soil test P and K of 66 ppm and 376 ppm, respectively. The previous crop was corn. The field was chisel plowed in the fall, and disked and field cultivated once prior to planting in the spring. The soybean variety, Garst 1827-RRSTS, was planted on May 24, 2005 at a depth of 1.5 inches in 30-inch rows at 150,000 seeds/A. A randomized complete block design with four replications was used. Postemergence (POST I, POST II, and POST III) 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 July 1, July 8, July 14, and July 29. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	June 20	June 27	July 1
Treatment	POST I	POST II	POST II
Temperature (F)			
Air	85	79	66
Soil	70	79	80
Relative humidity (%)	47	71	60
Wind (mph)	17	15	12
Soybean			
stage	V1-V2	V5	V5
height (inch)	4.8	8.5	10.3
Wild proso millet			
weed density (ft <sup>2</sup> )	10.8	10.8	10.8
height (inch)	4.3	6.3	10.0
Common lambsquarters			
weed density (ft <sup>2</sup> )	6.1	6.1	6.1
height (inch)	0.9	2.2	2.3
Velvetleaf			
weed density (ft <sup>2</sup> )	1.5	1.5	1.5
height (inch)	2.3	3.1	6.8
Rainfall after application (inch)			
week 1	1.29	0.16	0.07
week 2	0.16	0.0	0.0
week 3	0.0	0.2	1.54

Injury in the form of stunting was sporadic in the trial. No differences in injury or weed control were observed when comparing NIS and COC as spray additives with either clethodim<sup>1,2</sup> product. POST II tank mix applications of thifensulfuron and clethodim as V-10137 or clethodim as Select provided better grass control than POST I/ POST III sequential applications, July 14 rating.

POST I applications of thifensulfuron + clethodim<sup>1</sup> + NIS + AMS provided superior common lambsquarters control than POST II applications on the July 8 rating date. However, these differences were not evident by the July 29 rating date.

POST II applications of thifensulfuron tank mixed with clethodim as V-10137 or clethodim as Select provided better velvetleaf control than sequential POST I /POST III applications of thifensulfuron on the July 14 and July 29 rating dates. (University of Minnesota Extension Service, Regional Center, Rochester, MN)

Table. Performance of clethodim<sup>1,2</sup> products tank mixed with thifensulfuron for the control of wild proso millet, common lambsquarters, and velvetleaf on July 1, July 8, July 14, and July 29 at Potsdam, MN in 2005. (Breitenbach, Behnken, White, and Sheehan).

Treatment <sup>a</sup>	Rate	Injury / stunting		PANMI control			CHEAL control			ABUTH control		
		7/1	7/8	7/8	7/14	7/29	7/8	7/14	7/29	7/8	7/14	7/29
	(lb/A)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<b>Postemergence I / Postemergence III</b>												
Thifensulfuron + NIS + AMS / clethodim <sup>1</sup> + NIS + AMS	0.002 + 0.25 % + 2 / 0.094 + 0.25 % + 2	0	0	75	73	83	91	77	83	85	70	67
Thifensulfuron + COC + AMS / clethodim <sup>1</sup> + COC + AMS	0.002 + 0.5 % + 2 / 0.094 + 0.5 % + 2	0	0	79	75	82	87	80	83	83	70	74
<b>Postemergence II</b>												
Clethodim <sup>1</sup> + thifensulfuron + NIS + AMS	0.094 + 0.002 + 0.25 % + 2	1	0	84	86	90	83	86	90	89	92	91
Clethodim <sup>1</sup> + thifensulfuron + COC + AMS	0.094 + 0.002 + 0.5 % + 2	0	0	83	86	88	81	87	89	87	90	89
Clethodim <sup>2</sup> + thifensulfuron + COC + AMS	0.094 + 0.002 + 0.5 % + 2	1	0	83	90	94	82	84	88	91	95	94
Clethodim <sup>1</sup> + thifensulfuron + NIS + AMS	0.07 + 0.002 + 0.25 % + 2	1	0	84	84	89	86	80	86	87	86	83
Clethodim <sup>1</sup> + thifensulfuron + COC + AMS	0.07 + 0.002 + 0.5 % + 2	0	0	83	86	95	82	78	88	89	92	93
Untreated Check		0	0	0	0	0	0	0	0	0	0	0
LSD (P=0.10)		2	0	5	8	9	6	5	7	6	9	10

a. clethodim<sup>1</sup> = V-10137; clethodim<sup>2</sup> = Select (HF); NIS = AGRI-DEX nonionic surfactant, Helena; AMS = spray grade ammonium sulfate; COC = crop oil concentrate, Helena.