Evaluation of clethodim formulations in combination with thifensulfuron for wild proso millet and common lambsquarters control in soybean at Potsdam, MN in 2004. Breitenbach, Fritz R., Lisa M. Behnken, Debra L. Lewis, and Kevin R. Griffin. The objective of this trial was to evaluate clethodim formulations in combination with thifensulfuron for wild proso millet and common lambsquarters 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 levels 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, Pioneer 92-M00, was planted on May 28, 2004 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. 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 July 30, August 6, and August 17. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	May 28	July 19	July 26
Treatment	PRE	POST I	POST II
Temperature (F)			
air	69	80	71
Relative humidity (%)	45	71	52
Wind (mph)	3	3	1
Soybean			
stage	seeded	R2	R3
height (inches)	0	15	20
Wild proso millet			
weed density	--	moderate	moderate
height (inch)	--	7	14
Common lambsquarters			
weed density	--	moderate	moderate
height (inch)	--	2	4
Rainfall after application (inch)			
week 1	1.30	0.75	0.69
week 2	4.32	0.69	0.62
week 3	3.19	0.62	1.63

Significant differences in crop response were measured, with greater injury (soybean stunting) observed when thifensulfuron and clethodim were tank mixed, as opposed to being applied separately as POST I and POST II treatments (less stunting). The combination of V-10137 and thifensulfuron also produced a higher percentage of crop response than the combination of clethodim and thifensulfuron with similar additives. V-10137, applied at 0.125 lb/A at POST I with NIS + AMS resulted in greater soybean injury than when applied at the lower rate of 0.094 lb/A at POST I with NIS + AMS, 27% and 21%, respectively, August 6 rating. POST II applications of V-10137 provided less control of wild proso millet than POST I applications tank mixed with thifensulfuron. Sequential postemergence applications of thifensulfuron and V-10137 with similar additives resulted in similar control of common lambsquarters as tank mixed postemergence applications. (University of Minnesota Extension Service, Regional Center, Rochester, MN)

Table. Performance of clethodim formulatations in combination with thifensulfuron for wild proso millet and common lambsquarters control in soybean on July 30, August 6, and August 17 at Potsdam, MN in 2004. (Breitenbach, Behnken, Lewis, and Griffin).

Treatment	Rate	Injury/Stunting		PANMI control			CHEAL control		
		7/30	8/06	7/30	8/06	8/17	7/30	8/06	8/17
	(lb/A)	(%)			(%)			(%)	
Preemergence									
Cloransulam	0.032	0	0	0	0	0	0	0	0
Preemergence / Postemergence I									
Cloransulam / clethodim[1] + thifensulfuron + NIS + AMS	0.032 / 0.125 + 0.039 + 0.25% + 2.0	25	27	96	95	97	62	87	91
Cloransulam / clethodim[1]+ thifensulfuron + COC + AMS	0.032 / 0.125 + 0.039 + 0.5% + 2.0	25	26	97	98	98	56	84	81
Cloransulam / clethodim[2] + thifensulfuron + COC + AMS	0.032 / 0.125 + 0.039 + 0.5% + 2.0	20	21	97	98	98	59	84	91
Cloransulam / clethodim[1]+ thifensulfuron + NIS + AMS	0.032 / 0.094+ 0.039 + 0.25% + 2.0	23	21	95	95	99	53	84	85
Cloransulam / clethodim[1]+ thifensulfuron + COC + AMS	0.032 / 0.094 + 0.039 + 0.5% + 2.0	24	26	96	96	97	60	85	86
Preemergence / Postemergence I / Postemergence II									
Cloransulam / thifensulfuron + NIS + AMS / clethodim[1]+ COC + AMS	0.032 / 0.039 + 0.25% + 2.0 / 0.125 + 0.5% + 2.0	15	12	0	82	85	50	83	83
Cloransulam / thifensulfuron + COC + AMS / clethodim[1]+ COC + AMS	0.032 / 0.039 + 0.5% + 2.0 / 0.125 + 0.5% + 2.0	15	15	0	84	91	50	81	79
Untreated Check		0	0	0	0	0	0	0	0
LSD (0.05)		4	3	1	4	3	4	5	9

Clethodim[1] = V-10137, Clethodim[2] = Select 2EC, NIS = AGRI-DEX nonionic surfactant, Helena; AMS = spray grade ammonium sulfate, Helena; COC = crop oil concentrate, Helena.