Evaluation of the performance of adjuvant/deposition aids with glufosinate in field corn at Potsdam, MN in 2005. Behnken, Lisa M., Fritz R. Breitenbach, Kristal L. Schaufler, and Corey W. Stever. The objective of this trial was to evaluate and compare the performance of glufosinate with various spray adjuvant/depositions aids for weed control in field corn 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 65 ppm and 273 ppm, respectively. The previous crop was soybean. The area was fertilized in the spring with 144 lb/A nitrogen, 23, lb/A phosphorus, 120 lb/A potash, and 24 lb/A sulfur. The field was disked and field cultivated twice prior to planting. The corn hybrid, Pioneer 38H69, was planted on May 6, 2005 at a depth of 1.5 inches in 30-inch rows at 32,000 seeds/A. A randomized complete block design with four replications was used. 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 June 16 and 27. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	June 10
Treatment	POST
Temperature (F)	
air	78
Relative humidity (%)	75
Wind (mph)	15
Soil moisture	wet
Corn	
stage	V3
height (inch)	8
Velvetleaf	
weed density (ft^2)	1
height (inch)	2.9
Common lambsquarters	
weed density(ft^2)	59
height (inch)	3.0
Wild proso Millet	
weed density(ft^2)	3
height (inch)	2.5
Rainfall after application (inch)	
week 1	0.19
week 2	0.15
week 3	1.23

Common lambsquarters control ranged from 53 to 99%, June 27 rating, and control was significantly impacted by the adjuvant or deposition aid, the rate of glufosinate used, and the addition of Cornbelt atrazine. The best control, 98 to 99%, of common lambsquarters was achieved when Cornbelt atrazine was included in the treatments. Glufosinate at 0.34 lb/A + either Premium AMS or Cornbelt N-Tense provided significantly greater common lambsquarters control than when applied at the 0.26 lb/A rate with either product. Glufosinate at 0.26 lb/A plus either of this products resulted in similar control, 80 to 81%, however, when the higher rate of glufosinate was used with Cornbelt N-Tense, common lambsquaters control increased to 89% compared to 85% for Premium AMS, July 27 rating. Glufosinate at 0.26 lb/A + One-Ap XL resulted in significantly lower control, 63% on June 16 and 53% on June 27, compared to all other treatments, including the glufosinate alone treatment.

Wild proso millet control was significantly lower in the glufosinate + One-Ap XL treatment compared to all other treatments, except one, glufosinate at 0.26 lb/A + Cornbelt N-Tense. Increasing the rate of glufosinate from 0.26 to 0.34 lb/A + Cornbelt N-Tense significantly increased wild proso millet control, from 87 to 93%, respectively. No difference in wild proso millet control was recorded when an increased rate of glufosinate was used with Premium AMS.

The lowest corn yield was observed in the glufosinate + One AP XL treatment. (University of Minnesota Extension Service, Regional Center, Rochester)

Table. Performance of adjuvant/deposition aids with glufosinate for weed control in field corn on June 16 and 27 at Potsdam, MN in 2005. (Behnken, Breitenbach, Schaufler, and Stever).

Treatment	Rate	PANMI control		CHEAL control		ABUTH control		Corn yield[a]
		6/16	6/27	6/16	6/27	6/16	6.27	
	(lb/A)	(%)		(%)		(%)		(bu/A)
Postemergence								
Glufosinate	0.26	88	91	78	73	99	98	205
Glufosinate+ Premium AMS	0.26 + 15	93	91	85	81	99	98	214
Glufosinate+ Cornbelt atrazine + Premium AMS	0.26 + 0.5 + 15	93	96	83	99	99	99	224
Glufosinate+ One-Ap XL	0.26 + 3	91	85	53	53	99	97	202
Glufosinate+ Cornbelt atrazine + One-Ap XL	0.26 + 0.5 + 3	90	91	84	98	99	98	220
Glufosinate+ Cornbelt N-Tense	0.26 + 0.75	93	87	84	80	99	98	215
Glufosinate+ Conrbelt atrazine + Cornbelt N-Tense	0.26 + 0.5 + 0.75%	91	95	84	99	99	98	214
Glufosinate+ Cornbelt atrazine + WC045	0.26 + 0.5 + 0.75%	92	97	82	99	99	99	212
Glufosinate+ Premium AMS	0.34 + 3	94	90	88	85	99	99	214
Glufosinate+ Cornbelt N-Tense	0.34 + 0.75%	94	93	89	89	99	99	219
Weedy Check		0	0	0	0	0	0	54
Weed Free		100	100	100	100	100	100	226
LSD (P = 0.10)		4	4	7	3	0	2	12

a. Yield at 15.5% moisture.