

Controlling volunteer glyphosate-resistant corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate control of volunteer glyphosate-resistant corn in glyphosate-resistant soybean applied POST. Glyphosate-resistant corn was spread and tilled into the soil followed by the seeding of Asgrow 'AG0801' soybean on May 29, 2003. POST treatments were applied on July 1 at 10:15 am with 78 F air, 75 F soil surface, 60% relative humidity, 5% clouds, 10 to 15 mph SE wind, dry soil surface, moist subsoil, good crop vigor, and no dew present to V2 to V3 soybean. Weed species present were: 6 to 8 inch (50 to 75/ft²) yellow foxtail; and 16 to 20 inch (5 to 40/yd²) volunteer corn. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 8001 flat fan nozzles. The experiment had a randomized complete block design with three replicates per treatment.

The experiment was conducted to observe compatibility of clethodim formulations and quizalofop with glyphosate (WeatherMax formulation) and potential antagonism in grass control of glyphosate-resistant corn. The large size of yellow foxtail at 6 to 8 inches tall and volunteer glyphosate-resistant corn at 16 to 20 inches was intentional to identify problems with herbicide interactions. No compatibility problems were observed during mixing and application, and no antagonism of grass control was observed during evaluation. Reducing the clethodim rate by 60% also resulted in complete corn death. Speed of symptom development and death of corn and yellow foxtail was greatest with the V-10137 formulation of clethodim (data not shown). Quizalofop applied without glyphosate was the only treatment that did not control yellow foxtail. In summary, clethodim can be used at low rates to kill volunteer glyphosate-resistant corn in glyphosate-resistant crops. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Controlling glyphosate-resistant corn (Zollinger and Ries).

Treatment ¹	Rate (lb/A)	July 15		July 29	
		ZEAMX (%)	SETLU (%)	ZEAMX (%)	SETLU (%)
Clethodim+glyphosate	0.078+0.77	99	99	99	99
Clet+glyt+AMS	0.078+0.77	99	99	99	99
Clet+glyt+NIS+AMS	0.078+0.77	99	99	99	99
Clet+glyt+Preference+N-Pac AMS	0.031+0.193	99	99	99	99
Clet+glyt+AG 01023+N-Pac AMS	0.031+0.193	99	99	99	99
Clet+glyt+Prime Oil+N-Pac AMS	0.031+0.193	99	99	99	99
Clet+glyt+Destiny+N-Pac AMS	0.031+0.193	99	99	99	99
Clet(V-10137)+glyt	0.734+0.77	99	99	99	99
Clet(V-10137)+AMS	0.073	99	85	99	99
Clet(V-10137)+NIS+AMS	0.073	99	85	99	99
Clet(V-10137)+glyt+AMS	0.073+0.77	99	99	99	99
Clet(V-10137)+glyt+NIS+AMS	0.073+0.77	99	99	99	99
Clet(V-10139)+glyt	0.075+0.77	99	99	99	99
Clet(V-10139)+glyt+AMS	0.075+0.77	99	99	99	99
Clet(V-10139)+glyt+NIS+AMS	0.075+0.77	99	99	99	99
Clet(Arrow)+glyt	0.078+0.77	99	99	99	99
Clet(Arrow)+glyt+AMS	0.078+0.77	99	99	99	99
Clet(Arrow)+glyt+NIS+AMS	0.078+0.77	99	99	99	99
Quizalofop-P+Herbimax+AMS	0.034	99	70	99	75
Qufp+glyt+AMS	0.034+0.77	99	99	99	99
Qufp+glyt+NIS+AMS	0.034+0.77	99	99	99	99
Untreated		0	0	0	0
LSD (0.05)		0	0	0	0

¹Clethodim = Select unless otherwise noted by trade or experimental number in parenthesis; Glyphosate = Roundup WeatherMax; Herbimax = petroleum oil at 1 qt/A; AMS = ammonium sulfate at 17 lb/100 gallon; NIS = nonionic surfactant = Activator 90 at 0.125% v/v; Preference = nonionic surfactant a 0.25% v/v; N-Pac AMS = ammonium sulfate at 2.5% v/v; AG 01023 = a proprietary adjuvant from Agrilience; Prime Oil = petroleum oil at 1% v/v; Destiny = methylated seed oil at 1% v/v.