Wild buckwheat control in glyphosate-resistant corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Jamestown, ND, to evaluate wild buckwheat control by glyphosate applied at three different timings. Wolf River Valley '2283' corn was planted on April 23, 2003. EPOST (early postemergence) treatments were applied on May 20 at 10:45 am with 52 F air, 53 F soil surface, 30% relative humidity, 0% clouds, 4 mph NE wind, damp soil surface, moist subsoil, good crop vigor, and no dew present to emerging to V1 corn. Wild buckwheat was 1 to 2 inch and 5 to 30/ft^2. POST treatments were applied on May 31 at 10:00 am with 60 F air, 69 F soil surface, 34% relative humidity, 50% clouds, 4 mph SE wind, damp soil surface, moist subsoil, fair crop vigor, and no dew present to V1 to V2 corn. Wild buckwheat was 1 to 4 inch 5 to 30/ft^2. LPOST (late postemergence) treatments were applied on June 9 at 11:30 am with 66 F air, 68 F soil surface, 63% relative humidity, 100% clouds, 7 to 12 mph S wind, damp soil surface, moist subsoil, fair crop vigor, and no dew present to V5 to V6 corn. Wild buckwheat was 4 to 6 inch (vining) and 5 to 30/ft^2. 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.

Inadequate wild buckwheat control by glyphosate is a concern. The objective of this study was to determine control by glyphosate applied alone at different wild buckwheat stages or applied with adjuvants. Results on July 7 were very surprising. Glyphosate at 0.58 or 0.75 lb/A applied to wild buckwheat at 1 to 2 inches or 2 to 4 inches gave at least 94% control. Only glyphosate at 0.75 lb/A applied to 4 to 6 inch (vining) plants gave at least 91% control. All glyphosate treatments applied at the POST timing provided at least 91% wild buckwheat control. Glyphosate has no residual control and, though complete control from the EPOST application was observed through July 17, additional wild buckwheat flushes would have been expected. No rain occurred after application, which may help explain high levels of control 1.5 months after the earliest application. In summary, glyphosate at 0.75 lb/A provided adequate wild buckwheat control when applied to plants up to 6 inches long and vining. Reducing the rate of glyphosate to 0.58 lb/A controlled wild buckwheat plants 4 inches tall or smaller. The micro-rate of bentazon&sethoxydim+imazamox+fomesafen&adjuvant did not control wild buckwheat. Perhaps the micro-rate would have provided better control if applied at EPOST instead of POST. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Wild buckwheat control in glyphosate-resistant corn (Zollinger and Ries).

Treatment[1]	Rate	June 13 POLCO	June 27 POLCO	July 7 POLCO
	(lb/A)	(%)	(%)	(%)
EPOST				
Glyt+AMS	0.58	99	99	94
Glyt+AMS	0.75	99	99	97
POST				
Glyt+AMS	0.58	95	98	96
Glyt+AMS	0.75	96	99	96
Glyt+Liberate[2]	0.75+0.25% v/v	98	99	95
Glyt+Liberate[3]	0.75+0.5% v/v	96	99	96
Glyt+Choice	0.75+0.5% v/v	96	98	93
A13998A+AMS	0.78	95	99	91
Bentazon+sethoxydim+ fomesafen&adjuvant+imazamoz+ Renegade	0.375+0.075+ 0.071+0.007+ 1% v/v	47	60	60
LPOST				
Glyt+AMS	0.58	30	67	73
Glyt+AMS	0.75	50	73	91
LSD (0.05)		16	12	6

[1]Glyphosate = Roundup UltraMax; AMS = ammonium sulfate at 8.5 lb/100 gallons; Liberate = nonionic surfactant; Choice = water conditioning agent; A13998A = glyphosate-K at 5.0 lb ae/gallon; Renegade = MSO basic blend at 1% v/v.