

AE F130360 01 tankmixtures in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Casselton, ND, to evaluate weed control in corn. Dekalb 'DKC39-47' was planted on May 23, 2002. EPOST (early post emergence) treatments were applied June 12 at 5:30 pm with 70 F air, 72 F soil surface, 39% relative humidity, 90% clouds, 5 to 6 mph W wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to 4 to 5 inch (3 collar) corn. Weed species present were: 1 to 2 inch (1 to 3/yd²) foxtail species (20% green population to 80% yellow population); 1 to 3 inch (1 to 5/yd²) common cocklebur; and 1 to 2 inch (1 to 5/yd²) wild mustard. POST treatments were applied June 29 at 3:00 pm with 95 F air, 112 F soil surface, 50% relative humidity, 0% clouds, 8 to 15 mph S wind, moist soil surface, wet subsoil, good to excellent crop vigor, and no dew present to less than 14 inch (5 collar) corn. Weed species present were: 1 to 6 inch (1 to 3/yd²) foxtail species (20% green population to 80% yellow population); 1 to 6 inch (3 to 15/yd²) redroot pigweed; 1 to 6 inch (3 to 15/yd²) common lambsquarters; 1 to 6 inch (1 to 5/yd²) common cocklebur; and 1 to 6 inch (1 to 5/yd²) wild mustard.

At Leonard, Golden Harvest 'H-6389Bt' was planted on May 15, 2002. EPOST treatments were applied June 5 at 11:30 am with 81 F air, 82 F soil surface, 30% relative humidity, 40% clouds, 3 to 5 mph N wind, dry soil surface, damp subsoil, good crop vigor, and no dew present to 3 to 4 inch (2 to 3 collar) corn. Weed species present were: 1 to 3 inch (25 to 75/ft²) yellow foxtail. POST treatments were applied June 14 at 12:00 pm with 79 F air, 83 F soil surface, 42% relative humidity, 0% clouds, 1 mph S wind, moist soil surface, wet subsoil, good crop vigor, and no dew present to 4 to 6 inch (3 to 4 collar) corn. Weed species present were: 2 to 4 inch (10 to 100/ft²) yellow foxtail; and 1 to 3 inch (5 to 20/yd²) common lambsquarters.

Treatments were applied to the center 6.67 feet of the 10 by 40 foot plots at a rate 10 gpa at 40 psi through 8001 flat fan nozzles. Casselton treatments were applied with a bicycle-wheel-type plot sprayer, POST treatments had an attached windscreen. At Leonard, all treatments were applied using a backpack-type sprayer. The experiment had a randomized complete block design with three replicates per treatment.

Casselton: Yellow foxtail was the target weed because of difficulty in control. All treatments controlled wild mustard, redroot pigweed, and common lambsquarters. Soil at this location contains high amount of clay with high organic matter. Corn grew in an ideal but excessively wet environment. Over three inches of rain fell on June 23 followed by 2 inches of rain on July 10. POST treatments were applied later than scheduled to large yellow foxtail because of excessive wet conditions. Corn in some parts of the study was stunted due to excess water. Flufenacet and primisulfuron & dicamba applied with AE F130360 01 enhanced yellow foxtail control compared to AE applied alone. Mesotrione at lower rates with AE reduced yellow foxtail control. Mesotrione at the highest rate and dicamba&San 1269H did not increase yellow foxtail control.

Leonard: Yellow foxtail was the target weed because of difficulty in control. All treatments controlled common lambsquarters. Soil at this location was light with a high sand content. Conditions were dry for the first third of the season and both corn and yellow foxtail exhibited drought stress at and following application. Corn injury was primarily stunting but any treatment containing dicamba also showed yellowing. No injury occurred after June 21. AE F130360 01 with flufenacet gave near complete yellow foxtail control at 14 DAT but was reduced at 28 DAT because another flush of yellow foxtail was present. As in Casselton, primisulfuron & dicamba with AE F130360 01 enhanced foxtail control compared to AE applied alone. Dicamba & San 1269H generally reduced yellow foxtail control and mesotrione, generally, did not influence control. Yields were erratic. Yield variability was not due to herbicide effect or in most cases not affected by weed competition. Long strips of stunted and low vigor corn went down the length of the field, inside and outside the study border. The strips seem to match variability on soil topography and possibly inconsistency in fertility. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table 1. AE F130360 01 tankmixtures in corn, Casselton (Zollinger and Ries).

Treatment ¹	Rate	July 13		July 27	
		SETSS	XANST	SETSS	XANST
	(lb/A)	(%)	(%)	(%)	(%)
<u>EPOST</u>					
AE F130360 01+flufenacet+MSO+28%	0.0656+0.15	98	47	99	20
AE F130360 01+flufenacet+MSO+28%	0.0656+0.225	99	57	96	43
AE F130360 01+flufenacet+MSO+28%	0.0656+0.3	99	47	98	33
<u>POST</u>					
AE F130360 01+MSO+28%	0.0656	70	47	88	40
AE F130360 01+	0.0656+	63	63	83	93
dicamba&San 1269H+MSO+28%	0.03125&0.0125				
AE F130360 01+	0.0656+	68	70	78	92
dicamba&San 1269H+MSO+28%	0.0625&0.025				
AE F130360 01+	0.0656+	70	73	85	92
dicamba&San 1269H+MSO+28%	0.125&0.05				
Dicamba&San 1269H+MSO+28%	0.125&0.05	47	80	60	96
AE F130360 01+mesotrione+MSO+28%	0.0656+0.047	60	57	72	70
AE F130360 01+mesotrione+MSO+28%	0.0656+0.0625	63	60	77	67
AE F130360 01+mesotrione+MSO+28%	0.0656+0.094	67	68	87	87
Mesotrione+MSO+28%	0.094	37	72	30	63
AE F130360 01+	0.0656+	70	70	94	93
primisulfuron&dicamba+MSO+28%	0.0748&0.0141				
AE F130360 01+	0.0656+	50	80	93	94
primisulfuron&dicamba+MSO+28%	0.998&0.0188				
AE F130360 01+	0.0656+	65	83	93	95
primisulfuron&dicamba+MSO+28%	0.1247&0.0234				
Primisulfuron&dicamba+MSO+28%	0.1247&0.0234	47	77	47	92
Nicosulfuron&rimsulfuron+	0.0234&0.0117+	73	75	95	91
dicamba&San 1269H+PO+28%	0.0625&0.025				
Untreated		0	0	0	0
LSD (0.05)		8	8	7	15

¹MSO = methylated seed oil = Scoil at 1.5pt/A; 28% = urea ammonium nitrate at 1.5qt/A; PO = petroleum oil concentrate = Herbimax at 1qt/A.

Table 2. AE F130360 01 tankmixtures in corn, Leonard (Zollinger and Ries).

Treatment ¹	Rate	June 21	June 28	July 12	Corn
		Corn injury	SETLU	SETLU	Yield
	(lb/A)	(%)	(%)	(%)	(bu/A)
EPOST					
AE F130360 01+flufenacet+MSO+28%	0.0656+0.15	12	97	72	103
AE F130360 01+flufenacet+MSO+28%	0.0656+0.225	10	96	75	97
AE F130360 01+flufenacet+MSO+28%	0.0656+0.3	12	97	87	124
POST					
AE F130360 01+MSO+28%	0.0656	23	65	80	98
AE F130360 01+dicamba&San 1269H+MSO+28%	0.0656+0.03125&0.0125	28	75	70	108
AE F130360 01+dicamba&San 1269H+MSO+28%	0.0656+0.0625&0.025	25	78	73	128
AE F130360 01+dicamba&San 1269H+MSO+28%	0.0656+0.125&0.05	28	77	70	98
Dicamba&San 1269H+MSO+28%	0.125&0.05	23	40	40	89
AE F130360 01+mesotrione+MSO+28%	0.0656+0.047	15	63	67	96
AE F130360 01+mesotrione+MSO+28%	0.0656+0.0625	15	67	75	106
AE F130360 01+mesotrione+MSO+28%	0.0656+0.094	15	88	78	56
Mesotrione+MSO+28%	0.094	25	37	23	69
AE F130360 01+primisulfuron&dicamba+MSO+28%	0.0656+0.0748&0.0141	10	65	98	129
AE F130360 01+primisulfuron&dicamba+MSO+28%	0.0656+0.998&0.0188	15	70	98	129
AE F130360 01+primisulfuron&dicamba+MSO+28%	0.0656+0.1247&0.0234	13	88	99	121
Primisulfuron&dicamba+MSO+28%	0.1247&0.0234	12	47	93	97
Nicosulfuron&rimsulfuron+dicamba&San 1269H+PO+28%	0.0234&0.0117+0.0625&0.025	10	68	96	128
Untreated		0	0	0	37
LSD (0.05)		5	7	9	54

¹MSO = methylated seed oil = Scoil at 1.5pt/A; 28% = urea ammonium nitrate at 1.5qt/A; PO = petroleum oil concentrate = Herbimax at 1qt/A.