

Foxtail control in hard red spring wheat with Assert tank mixes at Rosemount, MN

- 1998. Durgan, Beverly R. and Douglas Miller. The purpose of this experiment was to evaluate foxtail control and crop injury with various foxtail herbicides alone and at reduced rates in tank mix combinations with Assert (imazamethabenz). The experiment was conducted at Rosemount, MN on a Waukegon silt loam soil. Following soybeans, the experimental area was fall chisel plowed. In the spring, the area was fertilized with 50 lbs/A N and 70 lbs/A K, then was disked once, field cultivated once, and harrowed twice. 'Butte 86' hard red spring wheat was seeded on April 23 at 85 lbs/A. The experimental design was a randomized complete block with three replications and plot size was 10 by 25 ft. All herbicide treatments were applied to a 6 ft strip with a backpack type sprayer delivering 10 gpa at 35 psi using 11001 flat-fan nozzles. Bromoxynil (0.375 lb ai/A) was applied postemergence to control broadleaf weeds. Visual foxtail control, visual wheat injury ratings, and yields are presented in the table. Environmental conditions, plant sizes, and densities are listed below.

Treatment Date May 13
Time 8:30-9:30 am

Target weed or 1-4 leaf foxtail
crop stage

Temperature (°F)
air 61
soil (at 2") 56
Soil Moisture moist at 1"
Wind (mph) calm
Sky clear

Rainfall before
Application
Week 1 (inch) 1.48
Rainfall after
Application
Week 1 (inch) 2.39
Week 2 (inch) 0.40

Wheat		Giant foxtail	
leaf stage	2-3	density (#/ft ²)	14
tillers	0-2	leaf no.	1-4 (mostly 3)
height (inch)	4-5	height (inch)	0.25-1.25

Imazamethabenz caused antagonism of foxtail control with diclofop and tralkoxydim. No antagonism was apparent with the fenoxaprop treatments (HOE 1170 and Tiller) or CGA-184927. No significant herbicide injury was observed. Wheat yields reflected the poorer control in the antagonized diclofop and tralkoxydim treatments, the imazamethabenz alone treatments and the weedy checks. Poor wheat seed quality caused a reduced wheat stand and consequently, overall wheat yields were low.

Table. Foxtail control in hard red spring wheat with Assert tank mixes at Rosemount, MN -1998 (Durgan and Miller).

Treatment	Rate (lb ai/A)	Foxtail Control		Wheat Injury		Yield Bu/A
		5/27	6/13	5/27	6/13	
		%				
Imazamethabenz ¹ + diclofop + NIS ² + COC ³	0.31 + 0.56 + 0.25% + 2.5%	32	35	0	0	9
Imazamethabenz + diclofop + NIS + COC	0.31 + 0.75 + 0.25% + 2.5%	75	62	0	0	19
Diclofop	0.75	90	88	0	0	20
Imazamethabenz + fenoxaprop & 2,4-D & MCPA ⁴ + NIS	0.31 + 0.04 & 0.05 & 0.16 + 0.25%	91	88	0	0	18
Imazamethabenz + fenoxaprop & 2,4-D & MCPA +NIS	0.31 + 0.06 & 0.07 & 0.22 + 0.25%	92	89	0	0	18
Fenoxaprop & 2,4-D & MCPA	0.067 & 0.088 & 0.26	96	95	0	0	20
Imazamethabenz + tralkoxydim + NIS	0.31 + 0.264 + 0.25%	53	52	0	0	12
Imazamethabenz + tralkoxydim + NIS	0.31 + 0.36 + 0.25%	67	50	0	0	11
Tralkoxydim + TF8035 COC	0.36 + 0.5%	91	89	0	0	15
Imazamethabenz +fenoxaprop & safener ⁵ + NIS	0.31 + 0.04 + 0.25%	94	92	0	0	19
Imazamethabenz +fenoxaprop & safener + NIS	0.31 + 0.05 + 0.25%	97	97	0	0	19
Fenoxaprop & safener	0.04	98	98	0	0	20
Fenoxaprop & safener	0.05	99	98	0	0	19
Imazamethabenz +CGA-184927 + TF8035 COC	0.31 + 0.016 + 1%	87	79	0	3	18
Imazamethabenz +CGA-184927 + TF8035 COC	0.31 + 0.032 + 1%	87	91	0	0	17
Imazamethabenz +CGA-184927 + TF8035 COC	0.31 + 0.062 + 1%	91	89	0	0	22
CGA-184927 + TF8035 COC	0.062 + 1%	95	91	0	0	22
Imazamethabenz + NIS	0.47 + 0.25%	23	40	0	0	10
Imazamethabenz + NIS	0.625 + 0.25%	33	33	0	0	15
Weedy check		--	--	0	0	11
Weedy check		--	--	0	0	14
Weedy check		--	--	0	0	9
Weedy check		--	--	0	0	15
LSD (P=.05)		14	14	ns	ns	7

¹ Assert LC 2.5E.

² NIS = Class Preference nonionic surfactant.

³ COC = Class Crop Oil Concentrate.

⁴ Premix = Tiller 2.77E.

⁵ HOE 1170