Broadleaf weed control in winter wheat. Peterson, Dallas E. and David L. Regehr. An experiment was conducted near Manhattan, KS on a Reading silt loam soil with 2.5% organic matter and a pH of 5.7 to evaluate broadleaf weed control in winter wheat. '2137' hard red winter wheat was seeded at 70 lb per acre on October 8, 2001. Precipitation of 0.9 inch was received within 1 week after planting, resulting in uniform germination and emergence of the crop and weeds. Fall postemergence (FP) treatments were applied to 3- to 4-leaf and 2- to 5-tiller wheat, and 1- to 4-inch bushy wallflower and field pennycress rosettes on November 15 with 68 F, 68% relative humidity, and clear skies. Dormant (DOR) treatments were applied to tillering wheat, and 1- to 3-inch rosettes of bushy wallflower and field pennycress on February 20 with 45 F, 41% relative humidity, and partly cloudy skies. Spring postemergence (SP) treatments were applied to fully tillered wheat, 3- to 4-inch tall bushy wallflower and field pennycress, and cotyledon to 1-leaf wild buckwheat on April 9 with 66 F, 43% relative humidity, and mostly clear skies. Treatments were applied with a CO_2 back-pack sprayer delivering 20 gpa at 25 psi through XR8002 flat fan spray tips to the center 6.3 ft of 10- by 20-ft plots. The experiment was a randomized complete block design with three replications. Wheat injury was evaluated December 6 and April 16. Weed control was visually estimated on May 13. Wheat was harvested on June 27.

Fall postemergence treatments caused stunting that was apparent through early spring, but disappeared over the remainder of the season. Field pennycress infestations were light, and control was excellent with all treatments. Most treatments provided good control of bushy wallflower. Spring postemergence treatments that included chlorsulfuron&metsulfuron, triasulfuron, or triasulfuron&dicamba tended to give the highest wild buckwheat control. Wild buckwheat control with triasulfuron&dicamba and chlorsulfuron&metsulfuron was lower with fall postemergence than dormant or spring postemergence applications, probably because of dry conditions in the fall. Wheat yields were erratic and not related to weed control. Although there were no visible injury symptoms, wheat yields with fluroxypyr plus chlorsulfuron&metsulfuron treatments were less than the untreated check. (Dept. of Agronomy, Kansas State University, Manhattan)

Table. Broadleaf weed control in winter wheat (Peterson and Regehr).

Treatment[a]	Application Rate	Time[b]	Wheat Injury 12-6-01	4-16-02	ERYRE[c]	THLAR[c]	POLCO[c]	Wheat yield
	(oz/A)		----------(%)---------		----------(% control)----------			(Bu/A)
MCPA-ester	6	FP	0	0	100	100	0	35
Triasulfuron&dicamba+NIS	0.31&1.8	FP	5	0	100	100	50	41
Chlorsulfuron&metsulfuron+NIS	0.19&0.04	FP	7	2	100	100	77	42
MON-37500+NIS	0.5	FP	9	3	100	100	57	45
MKH-6561+NIS	0.63	FP	10	3	93	100	10	45
Chlorsulfuron&metsulfuron+NIS	0.19&0.04	DOR		1	100	100	93	42
Triasulfuron&dicamba+NIS	0.31&1.8	DOR		1	100	100	90	43
Triasulfuron+2,4-De+NIS	0.26+4	SP		0	100	100	94	40
Triasulfuron&dicamba+NIS	0.31&1.8	SP		5	100	100	97	43
Chlorsulfuron&metsulfuron+2,4-De+NIS	0.19&0.04+4	SP		0	100	100	96	41
Chlorsulfuron&metsulfuron+dicamba+NIS	0.19&0.04+1	SP		3	100	100	99	46
Metsulfuron+2,4-De+NIS	0.06+4	SP		1	100	100	87	44
MON-37500+NIS	0.5	SP		1	93	100	92	43
MKH-6561+NIS	0.63	SP		3	90	100	77	43
Tribenuron+NIS	0.13	SP		1	80	100	83	46
Tribenuron+NIS	0.25	SP		0	97	100	77	46
Thifensulfuron&tribenuron+NIS	0.15&0.8	SP		0	90	100	77	45
Thifensulfuron&tribenuron+NIS	0.25&0.13	SP		0	88	100	77	42
CGA-152005+2,4-De+NIS	0.14+4	SP		2	100	100	88	45
CGA-152005+NIS	0.21	SP		1	100	100	89	44
Carfentrazone+NIS	0.13	SP		4	98	100	73	43
Carfentrazone+2,4-De+NIS	0.13+4	SP		3	100	100	83	47
Fluroxypyr+2,4-De	2+6	SP		0	100	100	87	43
Fluroxypyr+chlorsulfuron&metsulfuron+NIS	1+0.19&0.04	SP		0	100	100	97	35
Fluroxypyr+chlorsulfuron&metsulfuron+NIS	2+0.19&0.04	SP		0	100	100	94	36
2,4-De	6	SP		2	100	100	63	43
Dicamba+2,4-De	1+4	SP		5	97	100	83	46
No Treatment								47
LSD (5%)			3	2	8	NS	14	7

[a] & = formulated premix; NIS = Activate Plus nonionic surfactant from Agriliance applied at 0.5% v/v; 2,4-De = ethylhexyl ester of 2,4-D.

[b] FP = fall postemergence; DOR = dormant season; SP = spring postemergence.

[C] ERYRE = bushy wallflower; THLAR = field pennycress; POLCO = Wild buckwheat.