Broadleaf weed control and spring wheat tolerance to Harmony Extra and Express tank mixes at Rosemount,MN - 1997.

Durgan, Beverly R., Eric Spandl, And Douglas Miller. The purpose of this experiment was to evaluate broadleaf weed control and crop injury with various tank mixes in hard red spring wheat. 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 K. The field was disked once, field cultivated once, and harrowed twice. 'Butte 86' hard red spring wheat was seeded on April 17 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. Visual weed control ratings, wheat injury ratings, and yields are presented in the tables. Environmental conditions and plant sizes are listed below.

Treatment Date	May 21
Target weed or crop stage	3-4 leaf wheat
Temperature (°F)	
air	63
soil (at 2")	60
Soil Moisture	moist at 1"
Wind (mph)	0-4 S
Sky	5% clouds
Relative Humidity (%)	34
Rainfall before Application	
Week 1 (inch)	0.31
Rainfall after Application	
Week 1 (inch)	0.72
Week 2 (inch)	0.18

Wheat	
leaf no.	3.75-4.5
tillers	1-3
height (inch)	4-6
Common lambsquarters	
density (#/ft$^{2)}$)	7.3
leaf no.	4-10
height (inch)	1-2.5
Common ragweed	
density (#/ft$^{2)}$)	0.7
leaf no.	2-4
height (inch)	0.75-1.0
Eastern black nightshade	
density (#/ft$^{2)}$)	1.0
leaf no.	cot-2
height (inch)	0.25-0.5
Pennsylvania smartweed	
density (#/ft$^{2)}$)	4.8
leaf no.	1-3
height (inch)	0.75-1.5

Redroot pigweed
density ($\#/ft^2$)	15
leaf no.	cot-3
height (inch)	0.25-0.75

Velvetleaf
density ($\#/ft^2$)	11.4
leaf no.	cot-2
height (inch)	0.5-1.0

Wild buckwheat
density ($\#/ft^2$)	0.9
leaf no.	1-3
height (inch)	0.75-1.5

Wild mustard
density ($\#/ft^2$)	1.9
diameter (inch)	1-6

Foxtail spp.
density ($\#/ft^2$)	0.2

Table 1. Broadleaf weed control and wheat tolerance to Harmony Extra and Express at Rosemount, MN - 1997   (Durgan, Spandl, and Miller).

Treatment	Rate	Wheat Injury				Wheat Yield
	(lb/A)	5/27	6/11	6/25	7/24	Bu/A
		---------------------- (%) ----------------------				
Postemergence (May 21)						
Thifensulfuron & tribenuron[1] +	0.009 & 0.0047 +					
bromoxynil & MCPA ester[2] + NIS[3]	0.19 & 0.19 + 0.125%	13	2	8	3	45
Thifensulfuron & tribenuron +	0.009 & 0.0047 +					
bromoxynil & MCPA ester + NIS	0.22 & 0.22 + 0.125%	12	3	8	5	44
Thifensulfuron & tribenuron +	0.009 & 0.0047 +					
bromoxynil & MCPA ester + NIS	0.25 & 0.25 + 0.125%	10	0	5	0	48
Thifensulfuron & tribenuron +	0.009 & 0.0047 +					
2,4-D ester + dicamba + NIS	0.25 + 0.062 + 0.125%	22	18	18	8	41
Thifensulfuron & tribenuron +	0.009 & 0.0047 +					
MCPA ester + dicamba + NIS	0.25 + 0.062 + 0.125%	23	22	13	12	45
Thifensulfuron & tribenuron +	0.012 & 0.006 +					
2,4-D ester + NIS	0.375 + 0.125%	7	0	3	0	51
Thifensulfuron & tribenuron +	0.012 & 0.006 +					
2,4-D ester + NIS	0.25 + 0.125%	7	0	3	0	48
Tribenuron + 2,4-D ester +	0.006 + 0.25 +					
dicamba + NIS	0.062 + 0.125%	18	10	12	5	41
Tribenuron + MCPA ester +	0.006 + 0.25 +					
dicamba + NIS	0.062 + 0.125%	20	15	15	8	43
Tribenuron + 2,4-D ester +	0.008 + 0.375 +					
NIS	0.125%	8	2	8	3	48
Tribenuron + 2,4-D ester +	0.008 + 0.25 +					
NIS	0.125%	8	3	10	7	43
2,4-D ester + dicamba	0.25 + 0.062	23	10	7	2	46
MCPA ester + dicamba	0.25 + 0.062	22	17	12	10	40
Bromoxynil & MCPA ester	0.25 & 0.25	7	5	7	7	45
Bromoxynil	0.25	0	0	7	3	45
Weedy check		0	0	0	0	42
Weedy check		0	0	0	0	43
Weedy check		0	0	0	0	44
LSD (0.05)		6	8	6	8	ns

[1] Premix = Harmony Extra 75DF.
[2] Premix = Bronate 4E.
[3] NIS = Class Preference nonionic surfactant.

		Weed Control														
		Colq			Pesw			Vele			Wibu			Wimu		
Treatment	Rate	6/11	6/25	7/24	6/11	6/25	7/24	6/11	6/25	7/24	6/11	6/25	7/24	6/11	6/25	7/24
	(lb/A)	-- (%) --														
Postemergence (May 21)																
Thifensulfuron & tribenuron[1] + bromoxynil & MCPA ester[2] + NIS[3]	0.009 & 0.0047 + 0.19 & 0.19 + 0.125%	100	100	100	99	98	96	90	93	98	100	96	98	98	100	100
Thifensulfuron & tribenuron + bromoxynil & MCPA ester + NIS	0.009 & 0.0047 + 0.22 & 0.22 + 0.125%	98	100	100	99	98	99	95	95	92	100	99	100	100	100	100
Thifensulfuron & tribenuron + bromoxynil & MCPA ester + NIS	0.009 & 0.0047 + 0.25 & 0.25 + 0.125%	100	100	100	100	99	99	90	91	90	100	99	99	100	100	100
Thifensulfuron & tribenuron + 2,4-D ester + dicamba + NIS	0.009 & 0.0047 + 0.25 + 0.062 + 0.125%	100	100	100	83	92	94	96	95	97	77	92	95	98	100	100
Thifensulfuron & tribenuron + MCPA ester + dicamba + NIS	0.009 & 0.0047 + 0.25 + 0.062 + 0.125%	97	100	100	83	92	94	95	96	100	85	95	98	96	100	100
Thifensulfuron & tribenuron + 2,4-D ester + NIS	0.012 & 0.006 + 0.375 + 0.125%	100	100	100	93	93	96	95	92	100	100	98	98	98	100	100
Thifensulfuron & tribenuron + 2,4-D ester + NIS	0.012 & 0.006 + 0.25 + 0.125%	95	100	100	90	93	93	92	87	100	93	98	98	95	100	100
Tribenuron + 2,4-D ester + dicamba + NIS	0.006 + 0.25 + 0.062 + 0.125%	98	100	100	83	88	91	95	96	100	90	96	98	97	100	100
Tribenuron + MCPA ester + dicamba + NIS	0.006 + 0.25 + 0.062 + 0.125%	95	100	100	90	93	91	88	98	100	93	98	98	93	100	100
Tribenuron + 2,4-D ester + NIS	0.008 + 0.375 + 0.125%	97	100	100	80	90	93	85	92	92	83	90	92	93	100	100
Tribenuron + 2,4-D ester + NIS	0.008 + 0.25 + 0.125%	96	100	100	88	88	83	90	83	86	90	90	93	97	100	100
2,4-D ester + dicamba	0.25 + 0.062	93	100	100	88	93	96	93	95	96	92	98	98	90	100	100
MCPA ester + dicamba	0.25 + 0.062	87	100	100	85	87	87	88	93	98	87	95	90	87	100	100
Bromoxynil & MCPA ester	0.25 & 0.25	98	100	100	87	85	87	85	83	97	90	88	87	98	100	100
Bromoxynil	0.25	92	93	95	92	85	87	80	82	97	97	98	93	68	78	100
LSD (0.05)		6	3	ns	ns	8	ns	ns	ns	ns	12	5	7	8	4	ns

[1] Premix = Harmony Extra 75DF.
[2] Premix = Bronate 4E.
[3] NIS = Class Preference nonionic surfactant.