

## Fall Application of Preemergence Herbicide Combinations for Spring Weed Control in Spring Wheat.

Anthem Flex (pyroxasulfone + carfentrazone) was applied in the fall (October 7, 2020) to evaluate crop tolerance and weed control in spring wheat. Anthem Flex treatments were compared with other herbicide treatments. In October, following application, there was approximately 0.5 inches of precipitation (rain and snow). The remainder of the winter received little additional precipitation up until after the wheat crop was planted. Downy brome control increased with all Anthem Flex and Olympus treatments (95 to 99%) compared with glyphosate alone (80%). Kochia control with treatments containing pyroxasulfone was 81 to 97% 35 days after crop emergence compared with 0% control in Olympus and glyphosate alone treatments. Green foxtail control increased at the higher rates of Anthem Flex and were higher compared to Olympus and Authority Supreme treatments. Common lambsquarters control also increased at higher rates of Anthem Flex and Anthem Flex treatments generally resulted in better control compared with Olympus or Authority Supreme treatments. Wheat yield was very low due to drought conditions. However, glyphosate alone and the spring/fall application of Olympus resulted in the lowest wheat yield, excluding the untreated control where yield was near zero.

Treatment	Rate oz/A	Time <sup>a</sup>	Downy brome	Kochia		Green foxtail		Lambs- quarters	Wheat	
			14 DAE	14 DAE	35 DAE	14 DAE	35 DAE	35 DAE	Height cm	Yield BU/A
1 Untreated control			0 c	0 c	0 c	0 c	0 e	0 d	45 d	0.4 e
2 Glyphosate	22	F	80 b	0 c	0 c	0 c	0 e	0 d	48 ab	6.0 d
3 Anthem Flex	3.5	F	99 a	97 a	98 a	82 a	69 b	66 bc	46 bcd	7.8 bcd
Glyphosate	22	F								
4 Anthem Flex	4	F	99 a	95 a	96 a	83 a	78 a	78 ab	49 a	9.0 a-d
Glyphosate	22	F								
5 Anthem Flex	4.5	F	98 a	99 a	96 a	87 a	80 a	88 a	48 a	9.6 abc
Glyphosate	22	F								
6 Olympus	0.2	F	95 a	25 b	0 c	72 b	43 d	0 d	46 cd	7.0 cd
Glyphosate	22	F								
Olympus	0.2	S								
7 Authority Supreme	7.5	F	97 a	94 a	81 b	84 a	54 c	60 c	48 abc	10.5 ab
Glyphosate	22	F								
8 Anthem Flex	4	F	98 a	97 a	93 a	87 a	83 a	80 a	48 ab	10.9 a
Glyphosate	22	F								
Olympus	0.2	S								
LSD P=.10			5.7	22.1	8.2	5.3	7.1	12.5	1.7	3.1
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0164	0.003

<sup>a</sup>Glyphosate, Roundup PowerMAX (4.5 lb/gal); Anthem Flex, carfentrazone (0.267 lb/gal) plus pyroxasulfone (3.733 lb/gal); Olympus, propoxycarbazone-sodium (70% DF); Authority Supreme, pyroxasulfone + sulfentrazone (2.08 + 2.08 lb/gal).

<sup>b</sup>AMS (ammonium sulfate) at a rate of 8.5 lb/100 gal was added to all treatments including Roundup PowerMax; a nonionic surfactant (NIS) at 0.5% v/v was added to treatments containing Olympus.

<sup>c</sup>Time of application: Fall (F); applied on October 7, 2020, or Spring (S); May 26, 2021.