

Evaluation of Anthem® Flex for crop tolerance and its effect on yield in ‘Pardina’ lentils

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Italian ryegrass is a difficult weed to control due to resistance to Group 1 & 2 herbicides. A preemergence control option would be welcome. In this study we evaluated Anthem Flex (pyroxasulfone + carfentrazone) for crop safety and its effect on yield in ‘Pardina’ lentils. Pyroxasulfone (Group 15) is the active ingredient in Anthem Flex that has good preemergence activity on Italian ryegrass. Anthem Flex is not labelled for use on lentils in WA.

An area, previously in spring wheat at the Cook Agronomy Farm, was sprayed with RT 3® (32 fl oz/A) and AMS (12 lb/100 gal) on April 24th. The trial area was prepared for planting with a one pass cultivator/harrow implement on April 30th. On May 4th, ‘Pardina’ lentils were planted at a rate of 40 lb/acre at a depth of 1.5 inches using a Monosem vacuum planter with a 10-inch row spacing. Treatments were applied on May 7th with a CO₂-powered backpack sprayer set to deliver 10 gpa at 52 psi at 2.3 mph. Conditions were calm, air temperature was 60°F and relative humidity was 60%. Two days after the treatments were applied, the trial area received 0.33 inch of rainfall. The soil at this site is a Palouse silt loam with 3.2% organic matter and a pH of 5.1. The trial area was harvested with a Zurn plot combine on August 24th.

Ten days after application, all herbicide treatments had caused some crop injury. Anthem Flex applied at 4.5 or 9.0 fl oz/A caused the most injury, which consisted of plant stunting and reduced plant density. Eighteen days after application, plants in those two treatments were still exhibiting the most crop injury. Twenty-five days after application, only plants treated with Anthem Flex applied at 9.0 fl oz/A were still exhibiting injury symptoms. Even though all herbicide treatments showed some initial crop injury, crop yields were not affected. The average yield among all treatments was 1945 lb/A.

Treatment	Rate	Crop injury				Yield
		5/17	5/25	6/1	6/8	
	fl oz/A	-----0-100%-----				lb/A
Nontreated Check	--	--	--	--	--	1960 a
Anthem Flex	2.5	10 a ¹	5 a	1 a	1 a	2050 a
Anthem Flex	4.5	21 b	9 b	1 a	3 a	1880 a
Anthem Flex	9.0	45 c	19 c	11 b	11 b	2020 a
Anthem Flex + TriCor®	3.5 + 7.0 oz	11 a	6 ab	1 a	1 a	1780 a
Dual Magnum® + Prowl® H ₂ O	16 + 32	15 ab	8 ab	0 a	0 a	1980 a

¹ Means, based on four replicates, within a column, followed by the same letter are not significantly different at P = 0.05 as determined by Fisher's protected LSD test, which means that we are not confident that the difference is the result of treatment rather than experimental error or random variation associated with the experiment.

Disclaimer

Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.