Two-gene Clearfield® winter wheat and its tolerance to Beyond® in combination with various broadleaf herbicides

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A field study was conducted on the WSU Cook Agronomy Farm near Pullman, WA to generate crop response data for two-gene Clearfield winter wheat treated with Beyond herbicide in combination with various broadleaf herbicides.

The soil at this site is a Palouse silt loam with 3.2% organic matter and a pH of 5.6. Nutrients were cultivated in on October 9, 2014, which consisted of 100-15-25-10 lb/acre of N-P-S-Cl. The form of nitrogen used was anhydrous ammonia. WestBred 1081 CL+ winter wheat was seeded on October 13th at a rate of 62 lb/acre using a Monosem precision air seed drill with 10-inch row spacing at a depth of 1.5 inches. Even though the ground was cultivated prior to planting, soils were dry which resulted in a range of seeding depth from 1.0 to 1.5 inches. Post-emergence herbicide applications were made on April 7th. Conditions were an air temperature of 61°F, relative humidity of 26% and the wind out of the E at 2 mph. The majority of the wheat was at the 4-tiller stage and was 6 inches tall.

Essentially, there was no visual crop injury on plants that were treated solely with Beyond + MSO® Conc. with Leci-Tech + UAN, when compared to the nontreated check. The primary injury that was observed was leaf spotting and tip burn and was most pronounced in the Beyond + Huskie, Beyond + Brox®-M + WideMatch® and Beyond + Brox-M + Huskie® treatments. Test weight was reduced in plots treated solely with Beyond + MSO Conc. with Leci-Tech + UAN, Beyond + Brox-M + WideMatch and Beyond + Brox-M + Huskie when compared to the nontreated check. There were no significant differences in yield among any treatments.

		Crop Injury	Test Weight	Yield
	Rate	(0 to 100)	lb/bu	bu/a
Treatment	fl oz/A	4/17	----------7/22----------	
Nontreated Check	--	--	60 a	83 a
Beyond + MSO Conc. with Leci-Tech + UAN	6.0 + 1.0% v/v + 20% v/v	1 ab[2]	57 cd	86 a
Curtail® M[1]	32.0	0 a	60 ab	80 a
Starane® Ultra	6.4	0 a	60 ab	91 a
Rhonox® MCPA	18.0	0 a	59 ab	84 a
2,4-D LV 6	16.0	2 a-c	60 ab	77 a
WideMatch	21.3	2 a-c	60 ab	79 a
Brox-M	32.0	4 a-d	59 ab	86 a
Clarity®	3.0	5 b-d	60 a	89 a
Bronate®	16.0	5 b-d	59 ab	90 a
Huskie	15.0	6 c-e	59 ab	93 a
Brox-M + WideMatch	24.0 + 20.8	7 de	58 bc	79 a
Brox-M + Huskie	24.0 + 15.0	10 e	57 d	84 a

[1] Curtail M and all following treatments were tank-mixed with Beyond (6.0 fl oz/A) + MSO Conc. with Leci-Tech (1.0% v/v) + UAN (20% v/v).
[2] 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.

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.