Two-gene Clearfield® wheat tolerance to Beyond® tank mix partners

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A field study was conducted on the WSU Cook Agronomy Farm near Pullman, WA to evaluate the tolerance of 'Curiosity CL+ (WA8143)' Clearfield winter wheat to Beyond plus various tank-mix partners. The soil at the site is a Naff silt loam with 2.8% organic matter and a pH of 5.0. On October 3, 2013 'Curiosity CL+' was planted at 100 lb/acre using a Monosem vacuum planter with 10-inch row spacing. Planting depth of seed was 1.5 inches. Two days prior to planting, a broadcast application of 120, 20 and 20 lb/acre of N:P:S was incorporated into the soil with a harrow. On May 1, applications were made using a CO_2 backpack sprayer set to deliver 15 gpa at 34 psi and 3 mph. The air temperature at the time of application was 84°F, relative humidity was 22%, and the wind was out of the southeast at 2 mph. The wheat was 6 to 8 inches tall and had 3 leaves. Plots were harvested on August 12 using a Kincaid 8XP combine.

One week after herbicide applications were made, slight crop injury was observed in all treatments. Various injury symptoms were observed and included such things as leaf splaying (spread or turned out), plant stunting, and leaf chlorosis. Three weeks after herbicide applications were made, the previous symptoms had largely disappeared, with the exception being some leaf splaying still visible in the treatment containing Clarity®, however, a new symptom was evident, which for lack of a better term we are calling "leaf slipping." With leaf slipping, the newest emerging leaf gets trapped in the necrotic leaf below, which appears to have detached from the plant at the leaf collar (see photo). Leaf slipping was observed when Beyond was applied alone. Although there may have been some slight differences in the incidence of leaf slipping with the various Beyond tank mix partners, it is interesting to note that the treatment containing Huskie™ showed no leaf slipping symptomology. No significant yield differences were observed in this study. It appears there are a number of herbicides that may be tank-mixed with Beyond without increasing the risk of crop injury. Be sure to check the Beyond herbicide label before adding other herbicides to the tank with Beyond.

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		May 8	May 21	August 12
Treatment[a]	Rate	Crop injury	Leaf slipping	Yield
	oz pr/a	----------%----------		bu/a
Beyond	6	4	8	54
Beyond	6	6	5	60
2,4-D LV 6	16			
Beyond	6	6	5	49
Clarity	3			
Beyond	6	5	0	52
Huskie	15			
Beyond	6	5	6	52
Widematch	21.3			
Beyond	6	5	8	54
Bronate Advanced™	16			
Beyond	6	5	10	49
Starane® Ultra	6.4			
Beyond	6	5	10	54
Curtail® M	32			
Beyond	6	5	8	64
Rhonox® MCPA Ester	16			
Beyond	6	5	5	53
Brox® M	32			
Nontreated Check	--	--	0	61
LSD (5%)		ns	2	ns

[a] All treatments were applied on May 1 and were tank mixed with MSO and 32% UAN at 1% v/v and 20% v/v, respectively.

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.