Downy brome control with Far-Go® in combination with pre- and post-emergence herbicides in Clearfield® winter wheat

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A field study was conducted on the Wilke Research Farm near Davenport, WA to evaluate the efficacy of Far-Go herbicide in combination with pre- and post-emergence herbicides on downy brome in Clearfield wheat. Triallate, the active ingredient in Far-Go, is a lipid synthesis inhibitor but not ACCase inhibitor (Group 8). This mechanism of action is not commonly used in wheat, which may make it something to consider in wheat as herbicide resistance issues continue to proliferate. GWN-10293 is an HPPD inhibitor (Group 27) with little or no activity on downy brome and other grassy weeds, but with good activity on broadleaf weeds.

The site was chemical fallowed the previous year and the soil is a Broadax silt loam with a pH of 5.5 and organic matter content of 3.6%. Pre-plant incorporated (PPI) applications were applied on September 21, 2013 using a CO_2 backpack sprayer set to deliver 15 gpa at 30 psi and 3 mph. Conditions were an air temperature of 60°F, relative humidity of 40% and the wind out of the southwest at 6 mph. These treatments were mechanically incorporated the same day using a tandem disc to place the chemical into the top 1.5 inches of soil. 'ORCF-103' Clearfield winter wheat was planted on September 27, 2013 at a seeding rate of 75 lb/acre using a Great Plains drill. The drill has a 7-inch row spacing and placed the seed 2 inches below the soil surface. Starter fertilizer was applied at planting at a rate of 83, 7 and 6 lb/acre of N:P:S. The post-emergence (POST) herbicides were applied on November 14, 2013 using the same backpack specifications mentioned previously. Conditions were an air temperature of 40°F, relative humidity of 100% and the wind out of the northeast at 5 mph. The wheat was at the 2-leaf stage and was about 3 inches tall. Downy brome was also at the 2-leaf stage and was 1.5 inches tall. The plots were harvested on August 5, 2014 using a Kincaid 8XP combine. However, due to the high populations of tumble mustards, only a few of the treatments could be harvested without plugging problems. Therefore, yield data were not analyzed.

Crop injury was significantly greater than the nontreated check in treatments containing PowerFlex® HL. Affected plants were slightly shorter and slightly lighter in color than the nontreated check. Excellent downy brome control was achieved with treatments containing Power Flex HL or Beyond®. Far-Go + Cadou applied PPI provided good control of downy brome. Applying Cadou POST following a PPI application of Far-Go provided only fair control of downy brome. Far-Go applied alone PPI or followed by GWN-10293 also provided fair control of downy brome.

Tumble mustard was prevalent at the site. Treatments containing Beyond provided excellent mustard control. Treatments containing GWN-10293 provided good to excellent control of the mustard, while treatments containing PowerFlex HL provided fair control. Fargo alone or with Cadou provided no control of tumble mustard in this study.

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			May 23	May 23	May 29
				Downy	Tumble
			Crop	brome	mustard
Treatment	Rate	Timing[a]	Injury	control	control
	oz pr/a		----------%----------		
Far-Go	40	PPI	0	70	n/a[b]
Far-Go	40	PPI	0	65	79
GWN-10293	2.12	POST			
NIS	*	POST			
Far-Go	40	PPI	10	96	75
PowerFlex HL	3.5	POST			
NIS	*	POST			
PowerFlex HL	3.5	POST	14	93	63
NIS	*	POST			
GWN-10293	2.12	POST	0	16	93
NIS	*	POST			
Far-Go	40	PPI	6	99	100
Beyond	4	POST			
NIS	*	POST			
UAN	**	POST			
Beyond	4	POST	0	96	99
NIS	*	POST			
UAN	**	POST			
Far-Go	32	PPI	3	86	n/a
Cadou	6.76	PPI			
Far-Go	40	PPI	0	75	n/a
Cadou	6.76	POST			
NIS	*	POST			
Untreated Check	--	--	--	--	--
LSD (5%)			8	11	11

* NIS applied at 0.25% v/v, ** UAN applied at 2.5% v/v

[a] PPI and POST treatments were applied Sep 21 and Nov 14, 2013, respectively.

[b] Treatments designated 'n/a' provided no control of tumble mustard.

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