

Downy brome and tumble mustard control in ‘Windham’ fall-sown peas

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Fall-sown peas are emerging as a rotation crop in the intermediate and low rainfall regions of eastern WA. In addition to helping break pest cycles in winter wheat-fallow cropping systems, peas also require less nitrogen input than winter wheat.

Although it is generally easier to control grass weeds in peas than in wheat, the control of broadleaf weeds in peas is more difficult. We evaluated Volunteer[™] (clethodim), an ACCase inhibitor (Group 1), for crop safety and the control of

downy brome. We also evaluated the effect of adding Ultra Blazer[®] (acifluorfen), a protox inhibitor (Group 14), to Volunteer herbicide on the control of downy brome and tumble mustard, as well as on crop injury to fall-sown peas. Vulture[™] (imazamox), an ALS inhibitor (Group 2), was also evaluated as it has activity on broadleaf and grassy weeds.



The Lind Dryland Research Station was the site chosen for this study and the field was previously in tilled fallow. The soil at this site is a Shano silt loam with 1.1% organic matter and a pH of 6.4. On September 1, 2017, ‘Windham’ fall-sown peas were seeded at 120 lb/A with a custom built deep furrow drill equipped with a Valmar seed box. Row openers were on a 17-inch spacing and seeds were placed 2 inches into moisture with a total soil cover of 5 to 7 inches. Postemergence treatments were applied on April 4, 2018 with a CO₂-powered backpack sprayer set to deliver 15 gpa at 46 psi at 2.3 mph. The applications were made with winds out of the south at 5 mph, air temperature of 50°F and relative humidity of 70%. At the time of application, the winter peas had 9 to 14 pairs of leaves. Tumble mustard rosettes were 0.75 to 2.25 inches in diameter.

The addition of Ultra Blazer to Volunteer resulted in early crop injury, whereas Volunteer applied alone caused little injury. Crop injury was short lived in this study and had mostly disappeared before the plants began to flower. Peas treated with Ultra Blazer + Volunteer appeared to be slightly delayed in their maturity compared to other treatments, but since yield was not taken, we do not know if the delay in their maturity affected yield. Volunteer provided effective control of downy brome and the tank mix with Ultra Blazer did not compromise control. Vulture provided fair to good control of downy brome but it was not as effective as Volunteer. Vulture provided fair to good control of tumble mustard but it was not as effective as the Ultra Blazer plus Volunteer tank mix. Increasing the rate of Ultra Blazer from 12 to 16 fl oz/A did not increase tumble mustard control.

		Crop injury		Downy brome	Tumble mustard
Treatment	Rate	4/11	4/20	control	control
	fl oz/A	-----0-100%-----		0-100%	0-100%
Nontreated Check		--	--	--	--
Volunteer + COC	8.0 + 1.0% v/v	0 a ¹	0 a	94 a	0 d
Vulture + COC	4.0 + 1.0% v/v	0 a	0 a	78 b	75 c
Vulture + Synurgize + COC	4.0 + 2.0 qts/100 gal + 1.0% v/v	0 a	0 a	80 b	81 b
Vulture + COC	5.0 + 1.0% v/v	1 a	0 a	84 b	80 b
Vulture + Synurgize + COC	5.0 + 2.0 qts/100 gal + 1.0% v/v	3 a	1 a	83 b	84 b
Vulture + Volunteer + COC	4.0 + 9.0 + 1.0% v/v	0 a	0 a	94 a	80 b
Ultra Blazer + Volunteer + COC	12.0 + 9.0 + 1.0% v/v	19 b	5 b	94 a	100 a
Ultra Blazer + Volunteer + COC	16.0 + 9.0 + 1.0% v/v	20 b	5 b	93 a	100 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.