

Weed Management Systems in Peas

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The purpose of this study was to compare different chemicals in combination for herbicide efficacy on common lambsquarters (*Chenopodium album* L.) and evaluation of crop response in spring field peas.

Methods

The study was established at the Cook Agronomy Farm near Pullman, WA. Treatments were applied pre-emergence (PRE), detailed in Table 1 and Table 2. The study was conducted in a randomized complete block with 4 replications. Plots were 10' by 30' long.

Crop injury was visually rated 30 days after treatment (DAT). Common lambsquarters control was visually assessed 30 DAT. Plots were harvested by hand using 2 meter² quadrats per plot on August 8, 2016. Percent data were arcsine square-root transformed. All data were subjected to an analysis of variance using the statistical package built into the Agricultural Research Manager software system (ARM 8.5.0, Gylling Data Management).

Results

Crop injury differ depending on treatment. BoradAxe and BroadAxe + Lorox caused 74 and 54% injury 30 DAT. Similar injury of 56, 34, 76, 84, and 56%, respectively, were observed for Dual Magnum + Prowl H2O + Tricor, Zidua + Spartan, Outlook + Spartan, Outlook + Spartan + Lorox, and Outlook + Prowl H2O + Tricor. Crop injury was observed in all treatments except Zidua + Pursuit which caused 0% injury 30 DAT.

Common lambsquarters control did not significantly differ among the treatments. Common lambsquarters control was greatest for Dual Magnum + Prowl H2O + Tricor and Zidua + Pursuit at 99 and 91% control. Outlook + Spartan + Lorox provided the lowest percent control of 61%.

Spring field pea yields, 111 DAT, did not statistically differ among treatments (Table 2) although crop response was present 30 DAT for multiple treatments.

Table 1. Treatment application details

Study Application	A
Date	April 19, 2016
Application volume (GPA)	15
Crop Stage	Pre-emergence
Air temperature (°F)	65
Soil temperature (°F)	53
Wind velocity (mph, direction)	11, E
Next rain occurred on	April 22, 2016

Table 2. Percent crop injury for field peas, percent Common lambsquarters control, and yield following applications of different chemical combinations. Pullman, WA, 2016. Means followed by the same letter are not statistically significantly different ($\alpha=0.05$).

Treatment	Application Code	Rate		May 19, 2016	May 19, 2016	August 8, 2016
				Crop Injury	Common lambsquarters Control	Yield
		lb ai/A	%	%	lb/A	
Nontreated	-	-	-	-	-	1300
BroadAxe	A	25.2 fl oz/A	1.380	74 ab	85	1460
BroadAxe	A	25.2 fl oz/A	1.380	54 abc	80	1510
Lorox	A	2.5 lb/A	1.250			
Dual Magnum	A	1.33 pt/A	1.270	56 abc	99	1390
Prowl H2O	A	2.4 pt/A	0.990			
Tricor	A	5.33 oz/A	0.250			
Zidua	A	1.68 oz/A	0.089	34 abc	83	1560
Spartan	A	4.54 fl oz/A	0.142			
Zidua	A	1.68 oz/A	0.089	26 bc	76	1810
Spartan	A	4.54 fl oz/A	0.142			
Lorox	A	2.5 lb/A	1.250			
Zidua	A	1.68 fl oz/A	0.089	18 c	71	1600
Prowl H2O	A	2.4 pt/A	0.990			
Tricor	A	5.33 oz/A	0.250			
Outlook	A	21 fl oz/A	0.980	76 ab	84	1330
Spartan	A	4.54 fl oz/A	0.142			
Outlook	A	21 fl oz/A	0.980	84 a	61	1550
Spartan	A	4.54 fl oz/A	0.142			
Lorox	A	2.5 lb/A	1.250			
Outlook	A	21 fl oz/A	0.980	56 abc	80	1360
Prowl H2O	A	2.4 pt/A	0.990			
Tricor	A	5.33 oz/A	0.250			
Outlook	A	21 fl oz/A	0.980	23 bc	66	1360
Command	A	1.3 pt/A	0.487			
Zidua	A	1.68 oz/A	0.089	0 c	91	1710
Pursuit	A	3 fl oz/A	0.047			

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.