

Birdsrape mustard control in chickpeas with soil-applied herbicides

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A study was conducted on the Filan Brother's Farm in Dixie, WA to control birdsrape mustard in chickpeas. The emphasis on this trial was to evaluate early preplant herbicides. Snow came off the field early, which allowed us to get out early and establish the trial. Preplant herbicides were applied on March 19, 2020 with a CO₂-powered backpack sprayer set to deliver 15 gpa at 50 psi at 2.3 mph. The air temperature was 60°F, relative humidity was 38% and the wind was out of the northwest at 2 mph. The soil at this site is an Athena silt loam with 2.9% organic matter and a pH of 5.4. RT3 (glyphosate) was applied at 40 fl oz/a on April 2nd and 14th in order to control volunteer wheat and birdsrape mustard seedlings that germinated prior to planting. The trial area was direct seeded to 'Dylan' chickpeas on April 25th. Their planter had a harrow attached to it to aid in row closure. Postplant preemergence herbicides were applied on April 28th with a CO₂-powered backpack sprayer set to deliver 15 gpa at 51 psi at 2.3 mph. The air temperature was 74°F, relative humidity was 29% and the wind was calm. The trial area was harvested with a Kincaid 8XP plot combine on September 1st.



Nine days after the preplant herbicides were applied, the trial area received 0.37 inches of rainfall over a five day period. From the date of application to planting, 37 days, the trial area received 0.64 inches of rainfall. This rainfall pattern suggests that the preplant herbicides may not have been activated well. However, two days after the post plant preemergence herbicides were applied, over a two day period the trial area received 0.56 inches of rainfall and then again four days later 0.61 inches of rainfall. All products evaluated in this trial provided excellent control of birdsrape mustard and common lambsquarters (Table). While the data is not presented, all treatments provided ≥ 98 percent control of common lambsquarters. Without having standalone preplant herbicide treatments to compare to, the products evaluated at the post plant preemergence herbicide treatment timing were sufficient to provide outstanding control of birdsrape mustard and common lambsquarters. None of the treatments that were evaluated influenced yield (mean 1,700 lb/a) or 100-seed weight (53.5 g) when compared to the nontreated checks. The season-long control we achieved in this trial is not typical of the grower experience in the region. We are not sure if we just got lucky with the weather or if we have solved the problem. We plan to repeat this study in 2021.

				6/12	9/1
			Application	BRSRA ²	
Trt#	Treatment	Rate	timing (s) ¹	control	Yield
		fl oz/A	2020	%	lb/a
1	Nontreated Check	--	--	--	1520 a
2	Sharpen	2.0	4/28	99 a ³	1790 a
2	Valor	2.0 oz	4/28		
3	Sharpen	2.0	4/28	93 a	1620 a
3	Pursuit	3.0	4/28		
4	Sharpen	2.0	4/28	100 a	1710 a
4	TriCor	8.0 oz	4/28		
5	Sharpen	1.0	3/19	100 a	1760 a
5	Sharpen	2.0	4/28		
5	Valor	2.0 oz	4/28		
6	Sharpen	1.0	3/19	98 a	1630 a
6	Sharpen	2.0	4/28		
6	Pursuit	3.0	4/28		
7	Sharpen	1.0	3/19	100 a	1710 a
7	Sharpen	2.0	4/28		
7	TriCor	8.0 oz	4/28		
8	Tripzin ZC	29.0	3/19	99 a	1860 a
8	Sharpen	2.0	4/28		
8	Valor	2.0 oz	4/28		
9	Tripzin ZC	29.0	3/19	96 a	1830 a
9	Sharpen	2.0	4/28		
9	Pursuit	3.0	4/28		
10	Tripzin ZC	29.0	3/19	96 a	1820 a
10	Sharpen	2.0	4/28		
10	TriCor	8.0 oz	4/28		
11	Compound X	--	3/19	100 a	1790 a
11	Sharpen	2.0	4/28		
11	Valor	2.0 oz	4/28		
12	Compound X	--	3/19	98 a	1470 a
12	Sharpen	2.0	4/28		
12	Pursuit	3.0	4/28		
13	Compound X	--	3/19	100 a	1600 a
13	Sharpen	2.0	4/28		
13	TriCor	8.0 oz	4/28		

¹Pre-plant (3/19), Chickpeas were planted (4/25), Post plant preemergence (4/28)

²BRSRA (birdsrape mustard), CHEAL (common lambsquarters)

³Means, 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.