

# Lentil and Chickpea Response to Spartan and Balance, Carrington, 2000.

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The experiment was conducted on a Heimdahl-Emrick loam soil with 6.2 pH and 3.3% organic matter at the NDSU Carrington Research Extension Center. The experimental design was a randomized complete block with four replicates. Herbicide treatments were applied to the center 6.67 ft of 10 by 25 ft plots with a hand-boom plot sprayer at 17.2 gal/A at 35 psi through 8002 flat fan nozzles. PPI treatments were applied on May 9 with 62 F, 33% RH, clear sky, and 8 mph wind on a dry soil surface and incorporated with a roto-tiller at a 3-inch depth. Inoculated 'CDC Richlea' lentil was planted at 500,000 PLS/A and inoculated 'Sanford' chickpea was planted at 130,700 PLS/A on May 10 in 7-inch rows at a 1.5- to 2-inch depth. PRE treatments were applied on May 10 with 67 F, 47% RH, 50-75% cloudy sky, and 7 mph wind on a dry soil surface. A total of 0.46 inches of rain occurred during the 15-d period following the application of PRE treatments.

Herbicide	Weed control								Lentil			Chickpea	
	lb ai/A	Lentil			Chickpea				Stand	Injury		Stand	Injury
Treatment		colq	pw spp <sup>1</sup>	wimu	colq	pw spp <sup>1</sup>	wibw	wimu	31-May	2-Jun	16-Jun	15-Jun	19-Jun
		%							plt/ft <sup>2</sup>	%		plt/ft <sup>2</sup>	%
PPI													
Snen	0.13	91	82	38	98	87	65	68	15	2	1	1.2	0
Snen	0.25	97	97	55	99	96	90	60	12	34	29	1.0	15
Snen	0.50	99	99	94	99	99	99	94	9	76	68	1.3	11
PRE													
Snen	0.13	53	44	51	48	62	20	20	14	0	0	1.2	0
Snen	0.25	74	76	46	89	71	77	53	14	0	0	1.4	0
Snen	0.50	80	87	56	96	84	88	53	13	5	4	1.2	0
Isox	0.05				95	78	0	95				1.1	0
Isox	0.07				98	92	0	91				1.0	0
Isox	0.14				99	98	13	99				1.2	0
untreated		0	0	0	0	0	0	0	14	0	0	1.4	0
LSD (0.05)		14	23	31	9	7	26	27	2	4	6	NS	NS

<sup>1</sup>pw spp = redroot and prostrate pigweed.

Common lambsquarters and pigweed control with PPI sulfentrazone was generally superior to PRE sulfentrazone. PPI sulfentrazone at 0.50 lb/A was required for > 90% control of wild mustard. PPI sulfentrazone at 0.25 provided 90% control of wild buckwheat. Isoxaflutole at 0.05 lb/A provided excellent control of common lambsquarters and wild mustard, and 0.07 lb/A provided excellent control of pigweed. Lentil tolerance was acceptable with PPI sulfentrazone at 0.13 lb/A and all PRE treatments. Chickpea tolerance to sulfentrazone and isoxaflutole was difficult to evaluate due to an established stand having a low and variable density.