

## Pulse crop response to Curtail carryover from previous year (2002)

The objective of this study was to evaluate dry pea, lentil, and chickpea tolerance to Curtail carryover from the previous year. Curtail was applied to Alsen wheat on June 8, 2001. Corners of the plots were marked with permanent stakes to ensure that we planted in the same area in 2002. Dry pea, chickpea, and lentil were planted across the 2001 treatments on May 16, 2002. 'Majoret' dry pea, 'B-90' chickpea, and 'CDC Richlea' lentil were seeded into 6-inch rows at 140, 120, and 55 lb/A, respectively. This study was conducted at two locations at the North Central Research Extension Center (Field T and Field Y).

We collected stand counts and biomass per square meter in June and July 2002. Two subsamples within a replication were taken for each crop and averaged for each replication. Early growth in May seemed normal for all crops, but by early to mid-June, the crops started showing some curling and chlorosis on Field T. Early injury appeared worse with the lentils and chickpeas. By late season, all three crops showed significant injury symptoms. The June stand counts and biomass results do not show differences between treatments, whereas, the July results start to show numerical differences between treatments on Field T (Table 2).

In Field T, reps 1 and 3 were on a hilltop and reps 2 and 4 were on a slope. We saw more injury in reps 2 and 4. The soil test indicates that the soil pH in reps 2 and 4 were 4.7 and 4.8, respectively (Table 1). We observed less injury in reps 1 and 3, which had soil pH of 6.9 and 7.2, respectively. In Field Y, we observed only very slight injury in a small area of Rep 3, which had slightly lower pH and OM than the other reps.

**Table 1. Soil pH, organic matter, and soil texture of fields used for Curtail carryover study.**

Field T				Field Y			
	Soil pH	% OM	Soil texture		Soil pH	% OM	Soil texture
Rep 1	6.9	1.1	Sandy loam	Rep 1	5.8	2.8	Loam
Rep 2	4.7	1.5	Sandy loam	Rep 2	5.9	2.8	Loam
Rep 3	7.2	1.5	Loam	Rep 3	5.3	2.6	Loam
Rep 4	4.8	1.5	Sandy loam	Rep 4	5.4	2.8	Loam

**Table 2. Pulse crop tolerance to Curtail carryover - Field T (Sandy loam, 1.5% OM)**

Treatment	Rate	Stand				Dry weight				Injury	
		Jun 12		Jul 8		Jun 12		Jul 8		Jun 24	Jul 24
		pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8
		_____ plants / m <sup>2</sup> _____				_____ g / m <sup>2</sup> _____				_____ % _____	
<b>LENTIL</b>											

Curtail	2 pt	116	85	113	30	7	3	131	8	3	50	4	90
Untreated		120	102	124	116	6	5	150	96	0	0	0	0
<b><u>DRY PEA</u></b>													
Curtail	2 pt	63	68	74	64	11	8	215	153	0	20	3	70
Untreated		74	64	80	59	12	11	253	181	0	0	0	0
<b><u>CHICKPEA</u></b>													
Curtail	2 pt	73	61	83	42	15	11	200	28	3	30	0	68
Untreated		73	61	73	73	14	11	158	122	0	0	0	0

**Table 3. Pulse crop tolerance to Curtail carryover \_ Field Y (Loam, 2.8% OM)**

		Stand		Dry weight		Injury	
		Jun 19	Jul 15	Jun 19	Jul 15	Jun 24	Jul 24
Treatment	Rate	pH: 5.3-5.9					
		— plants / m <sup>2</sup> —		— g / m <sup>2</sup> —		— % —	
<b><u>LENTIL</u></b>							
Curtail	2 pt	139	123	21	225	0	0
Untreated		136	123	18	228	0	0
<b><u>DRY PEA</u></b>							
Curtail	2 pt	66	65	32	347	0	0
Untreated		68	71	32	389	0	0
<b><u>CHICKPEA</u></b>							
Curtail	2 pt	64	71	25	259	1	0
Untreated		68	71	27	286	0	0