

Row crop tolerance to preplant-applied dicamba, Carrington, 2020.
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The field trial was initiated at the NDSU Carrington Research Extension Center to provide a preliminary examination of the impact of preplant-applied dicamba, used for early season weed control, on selected row crops. Experimental design was a randomized complete block (split-plot arrangement: main plot=planting date; subplot=crop) and four replications. The irrigated trial was established under a center-pivot on a Heimdal-Emrick loam soil with 3.2% organic matter, 7.9 pH (0-6 inch soil depth), and 0.33 dS/m soluble salts (0-6 inch soil depth). Dicamba (Sterling Blue; 4SL; dga-salt; Winfield) was applied at 0.12 lb ai/A (4 fl oz product/A) on June 15 across the trial site with a CO₂-hand-boom plot sprayer delivering 14 gal/A at 35 psi through Lurmark flat fan 015E80 nozzles. One inch of water was applied by irrigation during each of the following dates: June 19, 23 and 27; and July 13. Daily rainfall received June 15 to July 15 $\geq$ 0.10 inch: June 20=0.10 and 30=0.73 inches; July 2=0.51, 7=0.24, and 8=0.61 inches (NDAWN). Spring-seeded winter wheat was the existing cover crop on the trial site and was terminated with glyphosate on June 20. Soybean (PFS19B04), pinto bean (ND-Palomino), and sunflower (Mycogen 8N270CLDM) were direct-planted in 28-inch rows on June 24 and July 7 (9 and 22 days after dicamba application, respectively). Total water received after dicamba application and one week after first planting date=3.8 inches; and one week after second planting date=6.2 inches.

All crops had rapid plant emergence after both planting dates, ranging from 5-7 days (Table). Plant stand counts were taken 2-3 weeks after planting and were at or above recommended density for all crops. Stand averages (plants/acre): soybean=162,990; pinto bean=76,160, and sunflower=43,420. Plant response was visually evaluated 2, 4, and 6 weeks after planting (WAP). At 2 WAP, pinto bean generally had larger than normal unifoliate leaves. Also, at 2 WAP with the first planting date, pinto bean commonly had misshapen growing points. Soybean and sunflower appeared to have normal growth and appearance 2 WAP. All crops had normal growth and appearance when evaluated 4 and 6 WAP.

Table.			
Treatment		Crop	
Planting date	Crop	Emergence	Stand
		Date	plt/A
24-Jun	soybean	29-Jun	185,060
	pinto bean	30-Jun	81,140
	sunflower	30-Jun	49,820
7-Jul	soybean	13-Jul	140,930
	pinto bean	13-Jul	71,180
	sunflower	14-Jul	37,010
CV (%)		0.1	19.1
LSD (0.10)		1	NS