

Sunflower Response to Headline Fungicide, Carrington, 2008

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The dryland, conventional-till trial was established at the NDSU Carrington Research Extension Center on a loam soil with wheat as the previous crop. The trial had a randomized complete block design with three replicates. Mycogen '8N386CL' oil sunflower were planted in 30-inch rows on May 14. Fungicide treatments were applied to the center 6.67 ft of 10 by 30 ft. plots with a CO₂-pressurized, hand-held plot sprayer at 17 gal/A and 35 psi through 80015 flat-fan nozzles. Information on fungicide application conditions are listed in table 1. Leaf rust scores were taken on the upper four leaves of five plants/plot. The trial was harvested with a plot combine on October 27.

Table 1. Fungicide application conditions.

Application Date	Crop Stage	Air Temperature degrees F	Relative Humidity %	Clear Sky %	Wind Speed mph
July 7	V12-14	75	72	100	11
July 14	R1	74	53	95	8
July 21	R2	74	66	100	0
August 1	R3	80	59	100	11
August 4	R4	74	68	15	9

Sunflower leaf rust was first noted in the trial on July 28. Sunflower leaf rust incidence was high in September but severity was low and generally similar among treatments (Table 2). Seed yield was not available from the untreated check due to soil and combine problems. Seed yield was reduced with Headline at 6 fl oz/A applied at R1, R2 and R4, compared to other fungicide treatments.

Table 2. Sunflower response to Headline fungicide.

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Treatment ¹				Leaf rust ²						Seed			
No.	Name	Rate fl oz/A	Crop stage	22-Aug		5-Sep		19-Sep		Yield ³ lb/A	Moisture %	Test Weight lb/bu	Oil %
				inc.	sev.	inc.	sev.	inc.	sev.				
1	Headline	3	V12-14	2	0.1	5	0.1	5	0.4	1173	9.6	32.0	45.2
2	Headline	3	V12-15	0	0.0	5	0.1	5	0.7	1227	9.9	31.2	44.0
	Headline	6	R2										
3	Headline	6	R1	2	0.1	5	0.2	5	0.2	1049	9.2	31.6	44.6
4	Headline	6	R2	1	0.1	5	0.1	5	0.4	909.8	9.0	31.5	43.9
5	Headline	9	R2	2	0.1	5	0.1	5	0.2	1287	9.7	31.6	44.5
6	Headline	6	R3	1	0.1	5	0.1	5	0.1	1378	9.9	32.0	45.2
7	Headline	6	R4	0	0.0	4	0.1	4	0.1	1119	10.2	31.2	43.9
8	untreated check	x	x	2	0.1	5	0.1	5	0.7	no data			
Mean				1	0	5	0	5	0	1163	10	31.6	44.5
CV (%)				92.5	75.1	13.5	70.0	4.2	76.8	13.7	5.2	1.8	3.0
LSD (P=0.05)				NS	NS	NS	NS	1	NS	239	NS	NS	NS
¹ All Headline treatments included NIS (Induce) at 0.25% v/v.													
² Incidence = number of leaves with disease; severity = average % among five leaves.													
³ LSD (P=0.10).													