Ascochyta Control in Chickpea

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Aschochyta blight attacks the leaves, stems, and pods of chickpea, reducing both yield and quality. Humid weather during the past two growing seasons has favored the development of this disease, resulting in severe economic losses to North Dakota producers. Until genetically-resistant varieties are developed, alternative control measures are needed. The objective of this research was to evaluate promising chemical fungicides for ascochyta control at the NDSU Research Extension Centers in Carrington, Minot, and Hettinger.

As evidenced by disease ratings on the untreated plots, disease pressure ranged from moderate to very high across the three locations (Table 1). Bravo, the only post-emergence product currently labeled, showed overall poor disease control. Dithane, Flint, and Walabi were intermediate in disease control, while Quadris and BAS 500 provided the best control among the products and rates tested.

As disease symptoms were reduced, yield was increased. At the higher yield levels recorded in Minot and Hettinger, two applications of Quadris and BAS 500 tended to improve yield over a single application. Under very high disease pressure at Carrington, the second application of these products more than doubled yield.

This work will continue in 2000, concentrating on Bravo (currently labeled), Quadris (possible registration for 2000), and BAS 500 (possible registration for 2001). 1

Table 1. Disease ratings and yield in the NDSU Chickpea Fungicide

Treatment	Formulation	First Application	Second Application	--- Carrington[2] --- Disease Rating (1–9)[1]	Carrington Yield (lb/ac)	--- Minot[3] --- Disease Rating (0–9)[1]	Minot Yield (lb/ac)	--- Hettinger[4] --- Disease Rating (0–9)[1]	Hettinger Yield (lb/ac)
		----- (product/acre) -----							
Untreated	---	---	---	8.5	61	7.1	324	4	1073
Bravo (various)	82.5WG	1.8 lbs	1.8 lbs	6.8	69	4.8	1224	3	1553
Quadris	2.08F	6.8 fl.oz.	6.8 fl.oz.	3.3	630	2.5	1547	2.5	1767
Quadris	2.08F	9.6 fl.oz.	---	4.8	306	3	1342	2.8	1687
Flint	50WG	2.0 oz.	2.0 oz.	6	210	5.7	1416	2.8	1807
BAS 500	2.09F	5.5 fl.oz.	5.5 fl.oz.	4.3	678	2.1	1310	1.8	1753
BAS 500	2.09F	8.2 fl.oz.	---	5.5	259	3.5	1252	3	1753
Walabi	2.09F	1.7 pt.	1.7 pt.	5.5	115	4.1	1305	2.3	1727
Dithane	75DF	2.0 lbs	2.0 lbs	3	--		--	3	1273
LSD (0.05)	---	---	---	1.2	299	1.6	305	1.6	568
LSD (0.01)	---	---	---	1.8	407			NS[5]	765

[1]Scale of 1-9 in Carrington, 0-9 in Minot and Hettinger; 0/1=disease-free, 9=dead plants

[2]Cultivar Sanford planted 16 May; 1st fungicide application 7 July; 2nd application 17 July

[3]Cultivar Dwelley planted 28 April; 1st fungicide application 29 June; 2nd application 13 July

[4]Cultivar Sanford planted 28 April; 1st fungicide application 28 June; 2nd application 10 July

[5]NS = differences are statistically not significantly different