

Foliar leaf diseases of wheat and barley can cause severe economic loss. Variety selection and the use of fungicides are two management strategies that producers can consider to improve net returns. In wheat, the most prevalent leaf diseases are tan spot and septoria complex. On barley, the most prevalent leaf diseases are net blotch and spot blotch. Plants infected with these diseases result in reduced grain fill and yield due to the reduced leaf area where plants collect solar energy.

Trials were conducted at Melfort and Scott in 2011 to determine the benefit of fungicides on disease severity, yield and quality of leaf spot susceptible and less susceptible varieties of wheat and barley.

The project included three varieties of wheat and three varieties of barley that differed in their levels of resistance to leaf disease. Barley varieties included Newdale (fair-good), AC Metcalfe (poor-fair) and Harrington (very poor), all 2 row malting types. CWRS wheat varieties included Infinity (good), 5603 HR (good) and AC Barrie (poor). Fungicides were applied at flag leaf stage for both crops and assessed for percent leaf spot severity at the soft dough stage.



Leaf spot symptoms on flag leaves of 5603 HR, AC Barrie and Infinity wheat.



Leaf spot symptoms on flag leaves of Newdale, Harrington and AC Metcalfe barley.

Fungicide treatment was most beneficial on wheat and barley cultivars that were more susceptible to leaf spotting diseases. AC Barrie and Infinity showed a benefit from fungicide application, whereas fungicide application on the more disease resistant variety (5603HR) was not required. Although Infinity is listed as 'good' for leaf spot resistance, it has been widely grown for a number of years and it is possible that leaf spot pathogens have adapted to the resistance of this variety. At Melfort, fungicide application resulted in increased yield for the barley varieties Harrington and AC Metcalfe, but not the more disease resistant variety, Newdale. At Scott, all barley varieties benefited from foliar fungicide application. These results indicate that choosing a disease resistant variety may reduce the need for fungicide application.

Wheat	Leaf Spot Severity (%)	Yield (bu/ac)	Barley	Leaf Spot Severity (%)	Yield (bu/ac)
AC Barrie	poor		Harrington	very poor	
Tilt	26.3	54.9	Tilt	19.5	74.1
Headline	22.2	54.2	Proline	19.0	77.7
Check	39.6	50.3	Check	24.4	66.8
Infinity	good		AC Metcalfe	poor-fair	
Tilt	21.3	55.6	Tilt	13.9	82.9
Headline	16.8	58.9	Proline	11.6	77.1
Check	37.1	52.2	Check	11.6	71.4
5603 HR	good		Newdale	fair-good	
Tilt	21.7	64.6	Tilt	11.4	86.6
Headline	22.8	68.4	Proline	10.8	79.9
Check	25.7	63.8	Check	11.8	70.3