

Foliar Fungicides for Irrigated Barley Trial

Previous trial work at the ICC Trial Block had shown yield improvements in barley with the application of a fungicide at Z32-33 despite little disease being observed. Barley fungicide strategy differs from wheat as unlike wheat, the leaves that drive yield are the two below the flag and so fungicides are applied at the Z32-33 (around second to third node stage) to protect the flag – 1 and lower leaves. This trial was sown with Commander (S to scald; MS-S to spot form of net blotch) and LaTrobe, with a range of fungicide, plant growth regulator and other treatments.

The following products were used:

Fungicide Registration for disease control in Barley

Fungicide	Disease
Orius 430 g/l Tebuconazole	Scald Powdery Mildew
Prosaro 210 g/l Prothioconazole 210 g/L Tebuconazole	Net Form Net Blotch Spot Form Net Blotch Scald Powdery Mildew Leaf Rust

The treatments were as follows:

1. Control – no fungicide applied
2. Prosaro - 300 ml/ha at second node (Z32)
3. Prosaro – High rate at Z32, as a fungicide and potentially as a PGR
4. Tebuconazole – 145 ml/ha at Z32
5. Tebuconazole – High rate at Z32, as a fungicide and potentially as a PGR
6. Tebuconazole – 145 ml/ha at Z32 and 145 ml/ha at Z39

High Rates - rates used are higher than label and intended to test the PGR effect of the triazole fungicides.

Fungicide application dates

Timing	Z32	Z39
Commander	4 th August	5 th September
LaTrobe	20 th July	24 th August

Results

Treatment	Yield t/ha		Protein %		Screenings %		Retention %	
	Commander	LaTrobe	Comm	LaTrobe	Comm	LaTrobe	Comm	LaTrobe
Prosaro @ Z32	6.41 ^a	7.44	11.3	11.7	2.9 ^{ab}	5.9	90.2 ^a	79.2 ^{ab}
Tebuconazole @Z32 HR	6.41 ^a	7.26	11.4	11.7	3.4 ^{ab}	4.9	87.8 ^a	80.5 ^{ab}
Tebuconazole @Z32&39	6.38 ^a	7.52	11.2	11.4	3.0 ^{ab}	4.4	89.7 ^a	82.6 ^a
Prosaro @32 HR	6.25 ^a	7.43	11.4	11.3	2.5 ^b	3.8	91.2 ^a	82.7 ^a
Tebuconazole @Z32	5.73 ^b	7.43	11.1	11.5	3.8 ^a	4.4	87.4 ^a	82.8 ^a
Control	5.70 ^b	7.08	11.3	11.7	3.2 ^{ab}	5.9	88.1 ^a	77.9 ^b

p	<0.001	0.814	0.743	0.071	0.002	0.118	<0.001	0.030
lsd	0.325	NS	NS	NS	0.9	NS	4.1	3.7
cv%	4.1	6.3	1.6	1.7	10.1	18.3	1.6	2.6

High rates of the fungicides had no plant growth regulator effect.

All Prosaro and Tebuconazole at either a high rate at Z32 or repeat applications at Z32 and Z39 saw yield increases above the control in Commander. No treatment improved the yield of LaTrobe.

While there was differences in screenings in Commander, these were not significantly different to the control.

Retention was improved in LaTrobe by some treatments that were not necessarily related to yield increases, they were not sufficiently large enough to have an impact on delivery standards.

Fungicide treatments had no effect on protein of both varieties.

What does it mean?

Knowing the varietal characteristics of your variety, in particular the disease ratings, is essential for correct management of your crop.