

Disease Control Using Fungicide on Wheat

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This trial is continuing on with our fungicide work, but with a program that is considering Septoria Tritici Blotch as well as Stripe Rust and Yellow Leaf Spot.

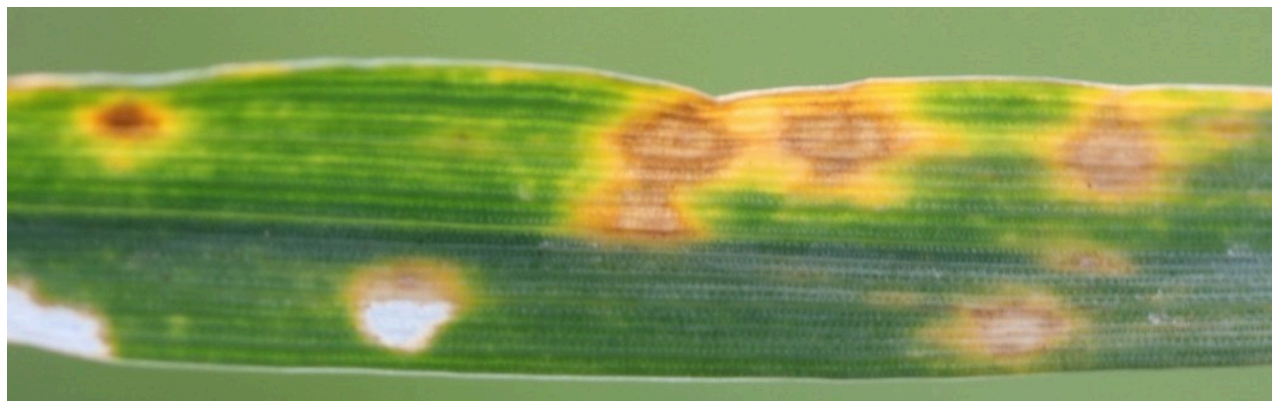


Septoria tritici blotch is an important stubble borne foliar disease of wheat in Victoria. This disease has increased in importance in the high rainfall cropping regions during the last five years, even though it has been well controlled in Victoria for the last 30 years through the use of partially resistant wheat varieties. The increase in Septoria in the high rainfall zone has been favoured by stubble retention, intensive wheat production, susceptible cultivars and favourable disease conditions.

Septoria tritici blotch survives from one season to the next on stubble. Following rain or heavy dew in late autumn and early winter, wind borne spores (ascospores) are released from fruiting bodies (perithecia) embedded in the stubble of previously infected plants. These spores can be spread over large distances.

Septoria tritici blotch. The presence of black fruiting bodies within the blotches is a diagnostic feature of Septoria tritici blotch.





In contrast, Yellow Leaf Spot (above) has no black dots (perithecia) in the blotches.

Early ascospore infections cause blotches on the leaves. Within these blotches a second type of fruiting body, pycnidia, are produced. Asexual spores ooze from pycnidia when the leaf surface is wet and spores are dispersed by splash to other leaves where they cause new infections. This phase of disease development depends on the rain splash of spores; therefore *Septoria tritici* blotch will be most severe in seasons with above average spring rainfall. A combination of wind and rain provides the most favourable conditions for spread of this disease within crops (from DEDJTR disease notes).

The trial was sown to Scout (MS for stripe rust; S-VS for septoria and S-VS for yellow leaf spot).

The fungicide products used were Tilt Xtra and Amistar Xtra:

Fungicide	Diseases controlled
Tilt Xtra 250 g/l propiconazole 80 g/l cyproconazole \$3/ha + application	Leaf Rust Powdery Mildew Stem Rust Stripe Rust Septoria nodosum Septoria tritici Yellow Leaf Spot
Amistar Xtra 200 g/l Azoxystrobin 80 g/L Cyproconazole \$20/ha + application	Leaf Rust Stem Rust Stripe Rust Yellow Leaf Spot

Fungicide registration for disease control in wheat

The timing of the fungicide spray was at Z32 (second node) which is targeting STB control and Z39 (full flag emergence), targeting stripe rust control. The final application was at the beginning of flowering (Z61).

Treatment	Application Date(s)
Amistar Xtra Z39	8/9
Control - No Fun	-
Tilt Xtra 32 39 61	11/8; 8/9; 29/9
Tilt Xtra 32&39	11/8; 8/9
Tilt Xtra 39	8/9
Tilt Xtra Z39 61	8/9; 29/9
TX Z32 + AmX Z39	11/8; 8/9

Similar to the barley fungicide trial, the “greenness” of the canopy was measured by a Greenseeker NDVI scan.

Results

Treatment	Yield t/ha	Protein %	Screen %	Test Wt
Amistar Z39	10.73	10.6	1.1	87.5
Tilt Xtra 32 + Amistar39	10.55	10.8	1.0	88.5
Late 39 61	10.43	10.8	1.0	88.2
Tilt Xtra 32&39	10.40	10.9	1.1	87.8
Full 32 39 61	10.29	10.8	0.9	87.1
Tilt Xtra Z39	10.28	11.2	0.9	88.3
Control	10.16	11.1	0.9	88.6
p	0.088	0.620	0.854	0.825
lsd	0.3723 NS	NS	NS	NS
cv%	2.0	3.4	>15	1.6

No treatment had any effect on grain yield or quality. Visual inspection of the plots noted very little disease present in any treatment during the season.

Similarly, no treatment kept the canopy greener through either reducing disease or affecting the rate of senescence of the canopy.

