

Comparison of Fungicide Treatments on Spot Form Net Blotch in Litmus Barley, Pithara

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Key Messages

- Environmental factors have led to spot form net blotch being a significant problem this season.
- There are various fungicides that will provide effective treatment.

Aim

To see the effects of old, new, generic and brand fungicides on spot form net blotch in Litmus barley.

Background

The green bridge caused by summer rains, significant wind lodging in 2014 and wet and cloudy conditions have caused spot form net blotch (*Pyrenophora teres f. maculate*) to be a problem this season. Spot form net blotch most commonly occurs in the high to medium rainfall zones and harbours over summer in stubble. The disease is present as oval, solid brown spots with yellow edges elongating to cause blotch symptoms as the disease progresses. When conditions are favourable secondary infections can occur within the season. Wet conditions favour disease initiation and progression of infection.

Spot form net blotch can have a severe effect on grain quality and yield. For every 10% increase in leaf area infected, a corresponding 0.4 t/ha yield loss may occur (2015 ,DAFWA).

Treatments were applied at GS 41.

Trial Details

Property	OJ Butcher & Son, Pithara
Plot size & replication	2m x 10m x 3 replicates
Soil type	Gravelly duplex
Sowing date	08/05/2015
Seeding rate	50 kg/ha
Paddock rotation	2012: pasture, 2013:wheat, 2014: wheat
Fertiliser	08/05/2015: 35 kg/ha Agstar 23/07/2015: 30 L/ha Flexi-N
Herbicides	05/05/2015: 150 g/ha Metribuzin750 WG, 1.8 L/ha Trifluuralin 480, 1.5 L/ha Glyphosate 450 11/06/2015: 1 L/ha Jaguar, 300 mL/ha LVE MCPA 570
Growing Season Rainfall (April-August)	279mm

Treatment List:

Productive/Active	Label Rate
1.Untreated	Untreated
2. Triadimefon	250 g/ha
3. Turbulence 800 (Tebuconazole)	156 g/ha
4.Tebuconazole 430SC	290 mL/ha
5. Octopus 800WG (Epoconazole)	78 g/ha
6. Cracker Jack 550 (Propiconazole)	115 mL/ha
7. Cracker Jack 550 (Propiconazloe)	230 mL/ha
8. Radial (azoxystrobin 75 g/L +epoconazole 75 g/L)	420 mL/ha
9. Amistar xtra (Azoxystrobin 200 g/L Cyproconazole 80 g/L)	600 mL/ha
10. Cogito (250 g/L of Tebuconazole, 250 g/L of Propiconazole)	187 mL/ha

Results

Incidence = average presence of disease on nominated leaf as a percentage infected per plot.

Severity = average percentage of leaf area infected on nominated leaf per plot.

Table 1: Comparison of treatment means. Spot form net-blotch flag leaf

Treatment	Application rate (per/ha)	19 Days After Treatment	
		Incidence	Severity
1. Untreated	--	46.7	0.53
2. Triadimefon	250g	30.0	0.47
3. Turbulence 800	156g	43.3	0.60
4. Tebuconazole 430SC	290mL	33.3	0.53
5. Octopus 800WG	78g	43.3	0.50
6. Cracker Jack 550	115mL	56.7	1.20
7. Cracker Jack 550	230mL	43.3	0.50
8. Radial	420mL	30.0	0.30
9. Amistar Xtra	600mL	40.0	0.50
10. Cogito	187mL	33.3	0.37
P value		0.50	0.06
LSD		ns	ns

ns - no statistical significance at $p < 0.05$

Table 2: Comparison of treatment means. Spot form net-blotch flag -1 leaf

Treatment	Application rate (per/ha)	19 Days After Treatment	
		Incidence	Severity
1. Untreated	--	83.3	1.53
2. Triadimefon	250g	90.0	1.27
3. Turbulence 800	156g	86.7	1.40
4. Tebuconazole 430	290mL	80.0	1.87
5. Octopus 800	78g	76.7	1.00
6. Cracker Jack 550	115mL	76.7	1.87
7. Cracker Jack 550	230mL	86.7	1.20
8. Radial	420mL	83.3	1.83
9. Amistar Xtra	600mL	83.3	1.57
10. Cogito	187mL	86.7	1.70
P value		0.99	0.69
LSD		ns	ns

ns - no statistical significance at $p < 0.05$

Table 3: Comparison of treatment means. Spot form net blotch flag -2 leaf.

Treatment	Application rate (per/ha)	19 Days After Treatment	
		Incidence	Severity
1. Untreated	--	100.0	3.17
2. Triadimefon	250g	100.0	2.97
3. Turbulence 800	156g	96.7	3.53
4. Tebuconazole 430	290mL	100.0	5.60
5. Octopus 800	78g	100.0	3.03
6. Cracker Jack 550	115mL	96.7	3.57
7. Cracker Jack 550	230mL	96.7	2.87
8. Radial	420mL	100.0	3.33
9. Amistar Xtra	600mL	100.0	3.37
10. Cogito	187mL	96.7	3.77
P value		0.73	0.07
LSD		ns	ns

ns - no statistical significance at $p < 0.05$

Comments

First assessment at 19 days after application did not demonstrate any significant differences between treatments and the untreated control. Further assessments may demonstrate a protection against spot form net blotch progression to the flag leaf.

Incidence and severity assessments will continue throughout the growing season with a final report in the R&D Book.

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References

Department of Agriculture and Food, Western Australia. 2015 [Online]. *Managing net type net blotch and spot type net blotch of barley in Western Australia*. State Government of Western Australia. Available: <https://www.agric.wa.gov.au/barley/managing-net-type-net-blotch-and-spot-type-net-blotch-barley-western-australia?page=0%2C1> August 2015.