

Trial 9: Disease management for hyper yielding spring canola

Objectives: Determine the effect of fungicide management strategies on disease control (especially crown canker blackleg, upper canopy blackleg and sclerotinia stem rot) and grain yield in HyTTec Trifecta (Resistant, Blackleg Group ABD) and 45Y28 RR (Moderately Resistant, Blackleg Group BC).

Key Messages:

- Grain yield of 45Y28 RR increased by 0.92t/ha from nil fungicide to where four separate fungicides were used, including seed, 6-leaf, 20% bloom and 50% bloom. However there were treatments that incorporated fewer fungicide applications that yielded similarly to where four applications were used. The highest of these was where Maxim XL was applied to the seed and a single application of Miravis Star was applied at 20% bloom.
- It was difficult to ascertain which disease was responsible for the yield loss. Sclerotinia levels were low with only 1.5% plants infected in the untreated control. Crown canker infection (% of cross section of basal stem) was reduced by fungicide but was not observed in high levels. Upper canopy blackleg infection on the main stem was also reduced by fungicide but was also only present at low levels. Pod Upper canopy blackleg was present at higher levels than 2021, it was reduced best by the treatment that included a 20 and 50% bloom spray.
- There was no statistical benefit of fungicide on HyTTec Trifecta. Upper canopy blackleg infection was generally lower than 45Y28 RR. Sclerotinia levels were also low in HyTTec Trifecta with infection on 2.5% of plants in the untreated control.
- There was no effect of fungicide on any grain quality parameter in either cultivar.

Treatments: Nine Fungicide strategies applied to 45Y28 RR and six to HyTTec Trifecta.

Table 1. Influence of fungicide management strategy on grain yield (t/ha), blackleg at the crown (% of stem cross section infected), Upper Canopy blackleg on main stem (% of main stems cankered from blackleg in upper canopy) and Pod infection from blackleg (% of area infected).

Trt.	Seed	6 Leaf	20% Bloom	50% Bloom	Yield (t/ha)	Crown blackleg %	Upper Canopy Blackleg Main Stem (%)	Upper Canopy Blackleg Pod (%)
1	---	---	---	---	3.76	4.3	2.8	6.8
2	Maxim XL	---	Aviator Xpro 800 mL/ha	---	4.40	4.6	0.0	5.3
3	Maxim XL	---	Miravis Star 1 L/ha	---	4.61	4.4	0.7	3.5
4	Maxim XL	---	Revystar 1 L/ha	---	4.35	4.6	0.0	4.3
5	Saltro Duo	---	Prosaro 450 mL/ha	---	4.26	1.6	0.23	7.5
6	Maxim XL	Aviator Xpro 650 mL/ha	Prosaro 450 mL/ha	---	4.14	2.5	0.6	5.4
7	---	---	Aviator Xpro 800 mL/ha	---	4.24	3.1	0.25	3.0

8	Saltro Duo	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	---	4.33	1.9	0.26	3.9
9	Saltro Duo	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	Prosaro 450 mL/ha	4.68	1.4	0.52	2.1
Mean					4.31	3.4	0.6	1.9
LSD 0.05					0.43	2.3	1.1	<0.001
P Val					0.012	0.013	<0.001	

Table 2. Influence of fungicide management strategy on grain yield (t/ha), blackleg at the crown (% of stem cross section infected), Upper Canopy blackleg on main stem (% of main stems cankered from blackleg in upper canopy) and Pod infection from blackleg (% of area infected).

Trt.	Seed	6 Leaf	20% Bloom	50% Bloom	Yield (t/ha)	Crown blackleg %	Upper Canopy Blackleg Main Stem (%)	Upper Canopy Blackleg Pod (%)
1	---	---	---		3.95	4.8	0	1.8
2	Maxim XL	---	Aviator Xpro 800 mL/ha	---	3.88	3.0	0	0
3	Saltro Duo	---	Prosaro 450 mL/ha	---	4.20	1.5	0	1.5
4	---	---	Aviator Xpro 800 mL/ha	---	4.02	2.3	0	1.0
5	Saltro Duo	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	---	4.11	2.3	0	0.5
6	Saltro Duo	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	Prosaro 450 mL/ha	4.33	0.3	0	0.3
Mean					4.08	2.3	0	0.8
LSD 0.05					n.s.	1.9	n.s.	<0.001
P Val					0.381	0.003	n.s.	0.73

Table 3. Trial management details.

Sowing date:	25 April	
Variety:	45Y28RR & HyTTec Trifecta	
Target plant density:	45 plants/m ²	
Sowing Fertiliser:	130 kg/ha MAP (in-furrow) & 180 kg/ha Single Super (broadcast pre-sow).	
Nitrogen:	6 Leaf	113kg N/ha
	Bud Visible	113kg N/ha
Fungicide:	As per treatment list	