

9.4 EFFECT OF JOCKEY®, IMPACT-IN-FURROW® AND CANOLA VARIETAL BLACKLEG RESISTANCE ON GRAIN YIELD - SA (SARDI)

Location: Moyhall and Kybybolite
(South East of South Australia)

Researchers:

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Aim:

To test a range of canola varieties under very heavy blackleg pressure and to also determine the effect of fungicide treatment on yield and quality.

Methodology:

Two trials were conducted in the South East of South Australia in 2003 next to blackleg nurseries and were therefore under extremely high blackleg pressure. A range of varieties that varied for blackleg survival rating was grown and treated with Jockey, Impact or both fungicides. The Canadian variety Q2 was used as a susceptible control. Grain yield was determined and the additional nett returns were calculated over the Nil treatment (after the cost of the fungicide treatment were accounted for). Oil content is being analysed but is not available yet.

Background:

Blackleg is a major canola disease in southern Australia. Two fungicide treatments are now available to have some control of blackleg while a range of varieties are available with blackleg resistance ratings varying up to a rating of 9.

Results:

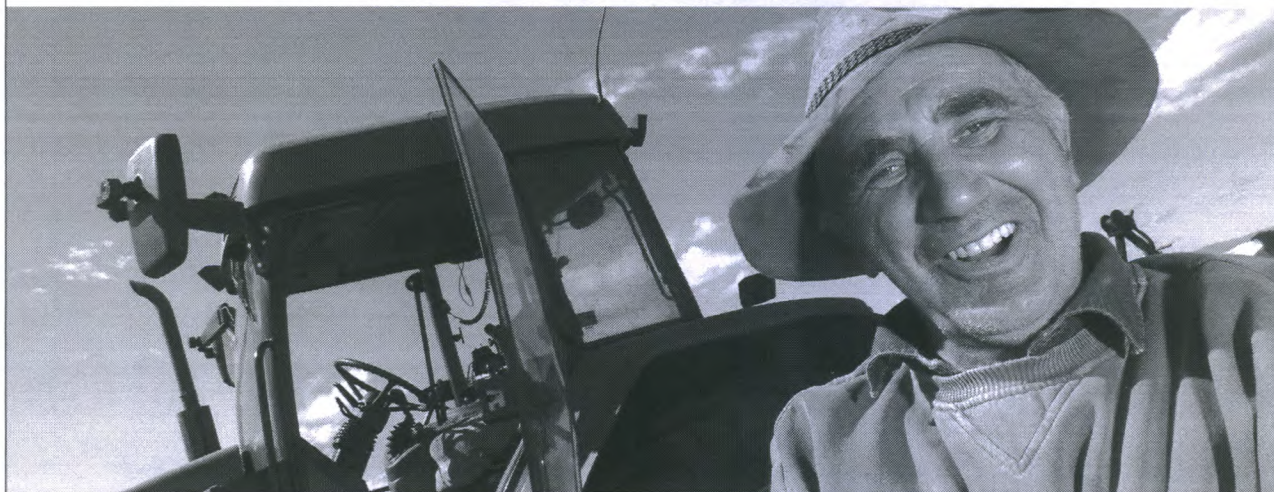
Under extreme pressure both Jockey and Impact produced significant yield increases for most varieties (Table 72). However, the combination of fungicides produced even higher grain yields and nett returns for those varieties that have blackleg survival ratings in the mid range. Varieties with high ratings showed little or no response to fungicide while varieties with very low blackleg survival resistance had lower yield increases with fungicide application and also generally produced lower nett returns than the mid range varieties.

Conclusions:

Yield responses were closely related to blackleg resistance rating. Varieties with a resistance rating of 7 or greater showed low or no response to fungicide application. Varieties with a mid range rating showed large responses to fungicide. Fungicide does not totally compensate for a low resistance rating.

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Table 72: Effect of Fungicide on Grain Yield and Nett Return Over the Nil Treatment Under Extreme Blackleg Pressure at (a) Moyhall and Very High Blackleg Pressure at (b) Kybybolite in 2003

(a) MOYALL

Variety	Blackleg rating	Blackleg survival % ⁶	Grain yield (kg/ha)			
			Nil	Jockey	Impact	Jockey+Impact
Hyola 60	9.0	92.6	2157	2255	2187	2432
AV-Sapphire	8.0	30.6	1755	1842	1958	2123
Lantern	7.0	28.2	1311	1534	1530	1938
Ripper	6.5	13.6	882	1490	1744	1606
Rainbow	6.0	23.5	1249	1635	1688	1885
Oscar	5.5	11.2	937	1301	1692	1809
Surpass 600TT	5.0	na	527	855	1130	1313
Q2	1.0	4.4	332	450	755	917

Nett \$ increase over Nil ⁷		
Jockey	Impact	Jockey+Impact
31.88	-18.24	72.92
28.04	51.32	110.24
82.04	122.32	213.68
235.96	314.60	252.60
147.36	145.40	217.40
138.56	272.16	311.84
124.28	211.20	277.64
40.48	139.20	197.32

CV 16.1%

LSD 5% Yield var x fungicide = 343.8

LSD 5% Yield variety comparison = 334.9

⁶ Survival in nursery adjacent

⁷ Canola price used was \$400 per tonne

(b) KYBYBOLITE

Variety	Blackleg rating	Grain yield (kg/ha)			
		Nil	Jockey	Impact	Jockey+Impact
Hyola 60	9.0	3048	3049	3224	3116
AV-Sapphire	8.0	2910	2987	2959	3039
Lantern	7.0	2415	2658	2642	3037
Ripper	6.5	1184	2269	2306	2759
Rainbow	6.0	2178	2808	2716	3278
Oscar	5.5	1446	2430	2799	3079
Surpass 600TT	5.0	972	1481	1775	1962
Q2	1.0	223	561	1139	951

Nett \$ increase over Nil ⁸		
Jockey	Impact	Jockey+Impact
-6.60	40.40	-9.80
23.80	-10.40	14.60
90.20	60.80	211.80
427.00	440.40	593.00
245.00	185.20	403.00
386.60	511.20	616.20
196.60	291.20	359.00
128.20	336.40	254.20

CV 13.8%

LSD 5% Yield var x fungicide = 667.2

LSD 5% Yield variety comparison = 449.4

⁸ Canola price used was \$400 per tonne

* Jockey cost was based on \$7 per hectare

* Impact cost was based on \$30 per hectare