

Trial 5. Influence of Fungicide Management Strategies on Blackleg and Sclerotinia Infection under Overhead Irrigation

Project objective: To determine the effectiveness of fungicide strategies for a susceptible canola cultivar grown under overhead irrigation

Location: Finley IRC

FAR Code: C21-08-1

Sown: 30th April 2021

Cultivar: ATR Bonito

Harvested: 4th December 2021

Rotation position: Faba Beans (2020), Fallow (2019), Faba beans (2018)

Soil Management: Stubble incorporated with speed disc in Autumn

Irrigation: Overhead irrigation, 5 applications totalling 82.5mm

GSR: April-October 192 mm. Total water available 274.5mm

Available Soil N: 94 kg/ha (0-100cm)

Key Messages:

- *The highest yield (4.17 t/ha) was achieved with Flutriafol (in furrow) and Miravis (based on 90 g/ha ai pydiflumetofen) at 4-6 leaf, this was higher yielding (not significant) than the untreated plots (3.89 t/ha) and gave 88-94% control of stem canker (blackleg) infection (incidence).*
- *Miravis without Flutriafol in furrow gave 45-47% control of stem canker.*
- *No sclerotinia infection was identified in the trial.*
- *Control of phoma leaf spot on lower canopy leaves from seed treatment and 4-6 leaf application was recorded at approximately 37-43% when assessed 6 leaf.*
- *There was no significant difference in blackleg infection between any of the treatments when assessed at early flowering.*
- *Overall, for the second year running the use of different fungicide strategies and products has led to large differences in crop canopy appearance but few significant yield increases.*

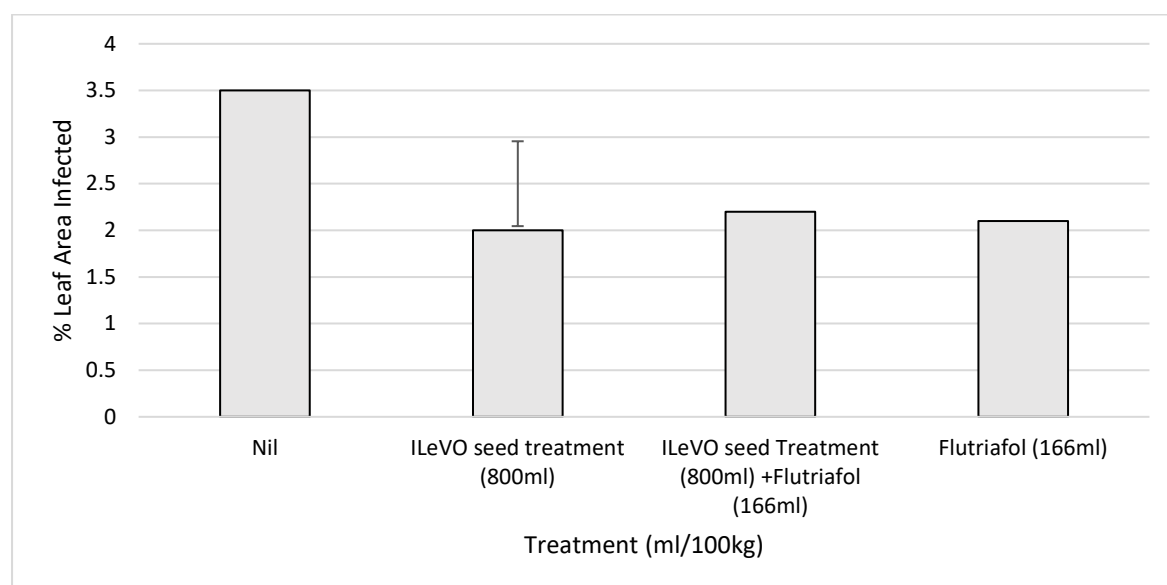
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Table 1. Influence of fungicide strategy on canola seed yield (t/ha SAGI predicted yields) grown under overhead irrigation.

Treatment mL/ha			Yield
At sowing	4 – 6 leaf	20-30% Flower main raceme	t/ha
1. Untreated			3.91 -
2. ILeVO seed treatment 800 mL/100 kg of seed	----	----	3.78 -
3. ILeVO & flutriafol (I.F)	----	----	3.85 -
4. ILeVO (seed trt)	Prosaro 375mL/ha	----	3.91 -
5. Flutriafol (I.F)	Miravis 450mL/ha	----	4.00 -
6. ----	Miravis 450mL/ha	----	3.96 -
7. ----	Prosaro 375mL/ha	----	3.96 -
8. ----	Miravis 450mL/ha	Prosaro 450mL/ha	4.00 -
9. ----	Prosaro 375mL/ha	Aviator 650mL/ha	3.96 -
10. ----	----	Prosaro 450mL/ha	3.97 -
11. ----	----	Aviator 650mL/ha	3.89 -
12. ILeVO & flutriafol (I.F)	Prosaro 375mL/ha	Aviator 650mL/ha	4.10 -
13. Flutriafol (I.F)	Miravis 450mL/ha	Prosaro 450mL/ha	3.94 -
Mean			3.94
LSD P=0.05			ns
P val			0.657

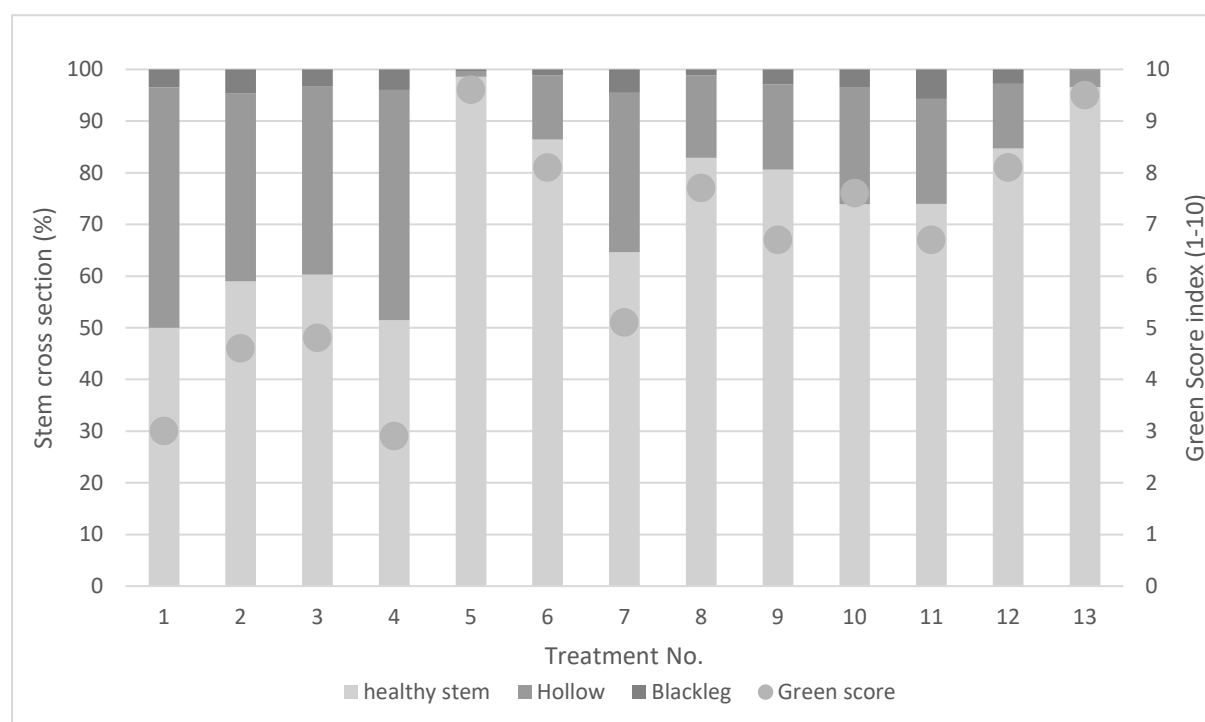
**Figure 1.** Influence of early seeding treatments on phoma leaf spot infection assessed on 26/7/21 (4-6 leaf). P value 0.015, Error bar represent LSD at p=0.05.

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Table 2. Influence of blackleg stem canker, hollowing of stems bases and greenness of stem assessed post-harvest.

Treatment	Blackleg		Hollow Stem		Green Stem	
	% Base section		% Base section		0-10 Score (10= green)	
1 Nil	3.5	abc	46.5	a	3	de
2 ILeVO	4.6	ab	36.4	ab	4.6	cde
3 ILeVO + Flutriafol	3.2	abc	36.5	ab	4.8	cde
4 ILeVO + Prosaro(4-6 leaf)	4	ab	44.5	a	2.9	e
5 Flutriafol + Miravis (4-6 leaf)	0.3	d	1.1	e	9.6	a
6 Miravis (4-6 leaf)	1.2	cd	12.4	de	8.1	ab
7 Prosaro (4-6 leaf)	4.5	ab	30.9	abc	5.1	cd
8 Miravis (4-6 leaf) + Prosaro (Flower)	1.2	cd	15.9	cde	7.7	ab
9 Prosaro (4-6 leaf) + Aviator (Flower)	2.9	bc	16.5	cde	6.7	bc
10 Prosaro (Flower)	3.4	abc	22.7	bcd	7.6	ab
11 Aviator (Flower)	5.7	a	20.3	bcd	6.7	bc
12 ILeVO + Flutriafol + Prosaro (4-6 leaf) + Aviator (Flower)	2.8	bcd	12.5	de	8.1	ab
13 Flutriafol + Miravis (4-6 leaf) + Prosaro (Flower)	0.1	d	3.3	e	9.5	a
Mean	2.9		23.0		6.5	
LSD P=0.05	2.7		16.4		2.2	
P val	0.002		<0.001		<0.001	

**Figure 2.** Influence of fungicide treatments on blackleg canker infection, hollow stems and stem colour assessed at harvest.

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SAGI statistical analysis (Predicted values for Yield, test weight and oil content)

The following statistical analysis of key harvest assessments has been carried out by SAGI. This analysis uses spatial statistical analysis to refine predicted values for key assessment values.

Table 1: Harvest Traits for the Treatments

Treatment	Grain Yield (%)	Test Weight (kg/hL)	Oil (%)
Treatment 1	3.91 ± 0.09 -	65.4 ± 0.36 -	46.85 ± 0.42 -
Treatment 2	3.78 ± 0.09 -	65.34 ± 0.37 -	46.43 ± 0.42 -
Treatment 3	3.85 ± 0.09 -	66.35 ± 0.36 -	46.85 ± 0.41 -
Treatment 4	3.91 ± 0.09 -	65.73 ± 0.36 -	46.41 ± 0.41 -
Treatment 5	4 ± 0.09 -	65.77 ± 0.36 -	46.51 ± 0.41 -
Treatment 6	3.96 ± 0.09 -	66.01 ± 0.36 -	46.88 ± 0.41 -
Treatment 7	3.96 ± 0.09 -	65.46 ± 0.36 -	46.75 ± 0.41 -
Treatment 8	4 ± 0.09 -	65.91 ± 0.36 -	45.96 ± 0.42 -
Treatment 9	3.96 ± 0.09 -	66.29 ± 0.36 -	46.88 ± 0.41 -
Treatment 10	3.97 ± 0.09 -	65.71 ± 0.36 -	46.76 ± 0.41 -
Treatment 11	3.89 ± 0.09 -	66.04 ± 0.36 -	46.92 ± 0.41 -
Treatment 12	4.1 ± 0.09 -	65.51 ± 0.36 -	46.78 ± 0.41 -
Treatment 13	3.94 ± 0.09 -	65.42 ± 0.36 -	46.71 ± 0.41 -

Note: values expressed as mean ± standard error of prediction

- no subscripts relevant for this response

A summary of the experiment statistics is below:

Table 2: Key statistics for each response analysed

Statistic	Grain Yield (%)	Test Weight (kg/hL)	Oil (%)
LSD	0.255	0.853	1.147
Mean	3.900	65.800	46.700
Treatment_p-value	0.657	0.223	0.935
CV	4.518	1.184	1.704

Trial 6. Influence of Plant Growth Regulation on Canola Yield and Profitability under Irrigation

Project objective: To examine whether experimental PGR (not commercially approved) application has any yield benefit in irrigated canola at different plant populations

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