

Trial 4. HYC Barley Disease Management (FAR SAC B22-04-2)

Objectives:

To develop profitable and sustainable approaches to disease management in HRZ barley.

Key points:

- A wetter than average spring, high inoculum in the environment and the use of susceptible varieties, NFNB pressure was extremely high in 2022.
- The use of SDHI chemistry at the second spray timing was most effective at reducing NFNB severity on flag-1, the most important yield contributing leaf in barley.
- There was no yield difference between the single spray programs and the untreated, suggesting this level of management is not appropriate for high disease pressure environments.
- There were no significant improvements in yield between the 4 fungicide units, 3 fungicide units or 2 fungicide units regardless of seed treatment/foliar spray combinations.
- The cheaper fungicide managements (untreated and single sprays) gave poorer screening and retention figures as well as increased brackling when assessed at crop maturity.

Treatments: 15 Fungicide management strategies (cultivar- RGT Planet).

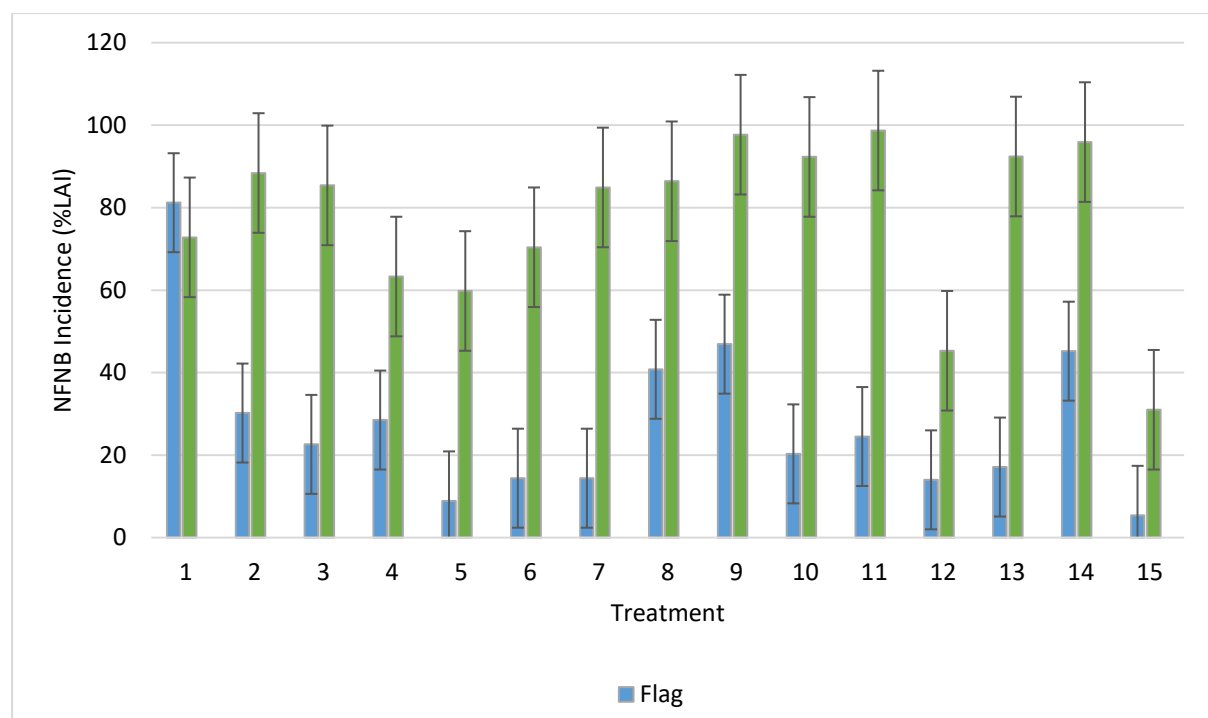


Figure 1. The incidence of Net Form Net Blotch (NFNB, %LAI) at GS79 on the Flag and Flag-1 (Treatment list as per table 1).

Table 1. Influence of fungicide management on grain yield (t/ha).

	Treatment				Yield		% of mean	
	GS00	GS30	GS39-49	GS59	t/ha		%	
1	---	---	---	---	3.06	e	71.1	e
2	Systiva	Prosaro 300 mL/ha	Radial 840 mL/ha		4.24	abc	98.7	abc
3	Systiva	Prosaro 300 mL/ha	Radial 840 mL/ha	Opus 500 mL/ha	4.66	ab	108.4	ab
4	---	Prosaro 300 mL/ha	Aviator Xpro 420 mL/ha		4.69	a	109.1	a
5	---	---	Aviator Xpro 420 mL/ha		4.63	ab	107.6	ab
6	---	Prosaro 300 mL/ha	FAR F1-19 750 mL/ha		4.82	a	112.1	a
7	---	FAR F1-19 750 mL/ha	Radial 840 mL/ha		4.66	ab	108.3	ab
8	---	Prosaro 300 mL/ha	----		3.54	cde	82.3	cde
9	--	Tilt 500 250 mL/ha	----		3.49	de	81.2	de
10	Systiva	---	Radial 840 mL/ha	---	4.43	ab	103.1	ab
11	---	Prosaro 300 mL/ha	Radial 840 mL/ha	---	4.29	ab	99.8	ab
12	---	Prosaro 300 mL/ha	Aviator Xpro 420 mL/ha	Opus 500 mL/ha	4.90	a	114.0	a
13	---	Aviator Xpro 420 mL/ha	Radial 840 mL/ha		4.38	ab	101.8	ab
14	---	Prosaro 300 mL/ha	Radial 420 mL/ha		3.96	bcd	92.1	bcd
15	Systiva	Prosaro 300 mL/ha	Aviator Xpro 420 mL/ha	Opus 500 mL/ha	4.75	a	110.4	a
Mean					4.3		100.0	
LSD (P=0.05)					0.72		16.7	
P-Value					<0.001		<0.001	

Table 2. Influence of fungicide management on brackling (%) and grain quality (protein (%), test weight (kg/hL), retention (%) and screenings (%).

Trt	Brackling		Protein		Test weight		Retention		Screenings	
	(%)		(%)		(kg/hL)		(%)		(%)	
1	97.5	a	14.2	a	65.6	-	41.5	e	24.7	a
2	76.3	de	13.7	bcd	68.2	-	61.1	bcd	14.4	bc
3	78.8	cde	13.3	e	69.1	-	65.3	abc	12.4	bc
4	68.8	ef	13.6	cde	67.5	-	65.7	abc	12.2	c
5	82.5	bcd	13.3	e	68.6	-	63.0	abc	13.4	bc
6	65.0	f	13.3	de	67.7	-	65.5	abc	12.4	bc
7	77.5	de	13.5	cde	68.8	-	64.2	abc	11.6	c
8	92.5	ab	13.9	ab	67.4	-	44.4	e	22.2	a
9	93.8	a	13.9	abc	67.2	-	44.4	e	22.5	a
10	81.3	cd	13.5	de	68.7	-	60.3	cd	14.0	bc
11	76.3	de	13.5	cde	68.6	-	59.1	cd	14.9	bc
12	75.0	def	13.4	de	68.7	-	67.1	ab	11.9	c
13	77.5	de	13.4	de	68.6	-	61.7	a-d	13.9	bc
14	88.8	abc	13.6	b-e	67.6	-	55.9	d	16.6	b
15	81.3	cd	13.4	de	68.5	-	67.8	a	11.4	c
Mean	80.8		13.5		68.0		59.1		15.2	
LSD (P=0.05)	10.0		0.4		ns		6.6		4.4	
P-Value	<0.001		<0.001		0.154		<0.001		<0.001	

Table 3. Trial input and management details (kg, g, mL/ha).

Sowing date:		11 May
Harvest date:		19 December
Variety:		RGT Planet
Plant population:		180 seeds/m ²
Seed treatment:		Systiva
Basal fertiliser:	28 April	100kg MAP (10 N)
Nitrogen:	6 Jul	109 kg N/ha
	23 Aug	217 kg N/ha
PGR:	GS30	Moddus Evo 200 mL/ha
	GS37	Moddus Evo 200 mL/ha
Fungicide:		As per treatment list