HARVEST RESULTS:

Wheat Disease Management – fungicide active ingredient and timings trial

2019/20 SA Crop Technology Centre Yield Results *(Provisional)*

Sown: 16 April 2019
Harvested: 7 January 2020
Principal disease: Septoria tritici blotch (STB) caused by the pathogen *Zymoseptoria tritici*
Rotation position: 1st Cereal after Broad bean **Cultivar:** SQP Revenue
Soil Type: Neutral-slightly alkaline Organosol (Peat soil) – high organic matter (0-30cm)

Key Messages:

- *In a high disease pressure environment sown in mid-April Revenue gave over a 5t/ha response to fungicide treatment (2 sprays - first node GS31 and full flag emergence fungicide GS39) from the control of Septoria tritici blotch (STB) and late season leaf rust.*
- *The development product FAR F1-19 produced the highest levels of disease control and yield response in the trial.*
- *Of the commercially available fungicides Opus 125SC applied at 500mL/ha was significantly superior to Radial 420mL/ha, Elatus Ace 500mL/ha and Aviator Xpro 300mL/ha.*
- *A GS31 timed foliar fungicide gave significantly better disease control and yield response when followed up with a flag leaf spray than Systiva seed treatment preceding a flag leaf spray, suggesting the persistence of Systiva is not great enough in this long season scenario to successfully replace the GS31 fungicide.*
- *When only one fungicide application was made in this HRZ environment the flag leaf fully emerged spray (GS39) was more effective than a single spray at 1st node GS31.*
- *The persistence of the lower rate options of Aviator (300mL/ha) and Radial (420mL/ha) were less effective than robust doses of straight epoxiconazole in this trial where STB and leaf rust were the principal diseases.*

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Table 1. Grain yield and quality (protein (%) and test weight (kg/hL) and screenings (%))

Treatment mL/ha		Grain yield and quality			
		Yield	Protein	Test weight	Screenings
		t/ha	%	Kg/hL	%
1.	Untreated	3.81 j	12.0 a	63.2 h	9.5 a
2.	FAR F1-19 750ml/ha GS31	5.99 e	11.2 c	69.5 f	6.8 b
3.	FAR F1-19 750ml/ha GS39	8.07 b	9.9 h	77.9 a	3.5 f
4.	FAR F1-19 750ml/ha GS31 & GS39	8.88 a	10.1 gh	77.9 a	3.8 f
5.	Elatus Ace 500ml/ha GS31	4.65 gh	11.9 ab	64.6 gh	9.3 a
6.	Elatus Ace 500ml/ha GS39	6.24 e	10.7 d	72.6 cd	4.8 def
7.	Elatus Ace 500ml/ha GS31 & GS39	7.08 cd	10.5 def	74.2 bc	4.7 def
8.	Opus 125SC 500ml/ha GS31	4.84 g	11.7 b	65.0 gh	8.4 a
9.	Opus 125SC 500ml/ha GS39	6.72 d	10.4 ef	74.3 bc	4.3 def
10.	Opus 125SC 500ml/ha GS31 & GS39	7.78 b	10.4 ef	74.8 b	4.2 def
11.	Radial 420 ml/ha GS31	4.86 fg	11.7 b	65.5 g	9.0 a
12.	Radial 420 ml/ha GS39	5.97 e	10.8 d	70.7 ef	5.1 cde
13.	Radial 420 ml/ha GS31 & GS39	7.16 c	10.4 ef	73.4 bcd	4.7 def
14.	Aviator Xpro 300ml/ha GS31	4.42 hi	11.8 ab	64.7 gh	8.8 a
15.	Aviator Xpro 300ml/ha GS39	5.23 f	11.1 c	69.0 f	6.2 bc
16.	Aviator Xpro 300ml/ha GS31 & GS39	6.17 e	10.6 de	71.7 de	5.3 cd
17.	Systiva (s.trt) fb. Radial 420 ml/ha GS39	6.34 e	10.8 d	72.0 de	5.1 cde
18.	Systiva (s.trt) fb. Opus 500ml/ha GS39	7.34 c	10.3 fg	75.2 b	4.3 def
19.	Systiva (s.trt) fb. Amistar Xtra 400ml/ha GS39	7.00 cd	10.4 ef	75.2 b	3.9 ef
20.	Systiva (s.trt)	4.21 i	11.9 ab	64.6 gh	8.8 a
	Mean	6.14	10.93	70.81	6.03
	LSD	0.37	0.26	1.81	1.31
	P Val	<0.001	<0.001	<0.001	<0.001

Please read the notes accompanying these harvest results for interpretation

Yield figures followed by the same letter are not considered to be statistically different (p=0.05), for example a yield of 7.00 cd is considered statistically different to 7.78b but not to a yield of 7.34c.

Plot yields: To compensate for edge effect a full row width (22.5cm) has been added to either side of the plot area (equal to plot centre to plot centre measurement).

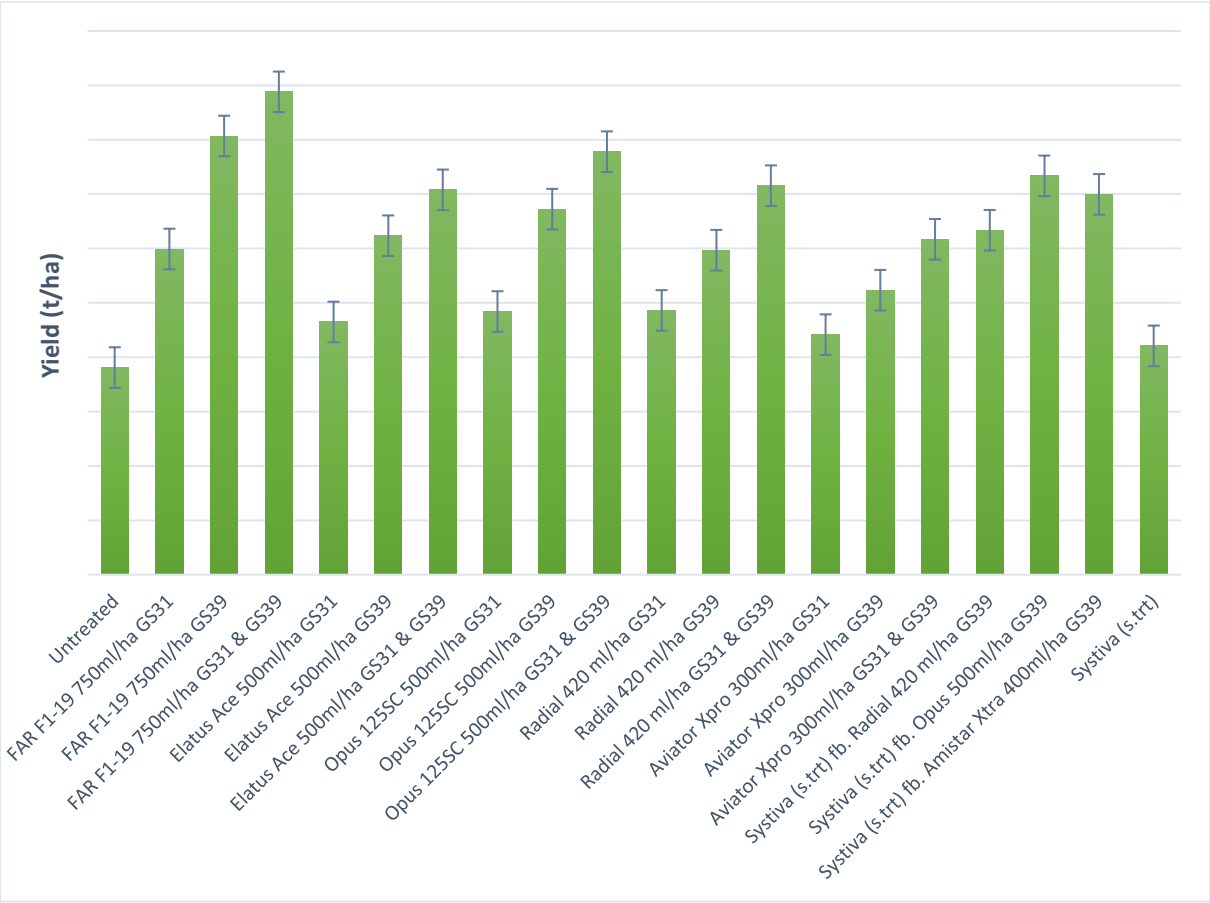

Figure 1. Yield (t/ha) of fungicide treatments – SA Crop Technology Centre – Millicent cv SQP Revenue.

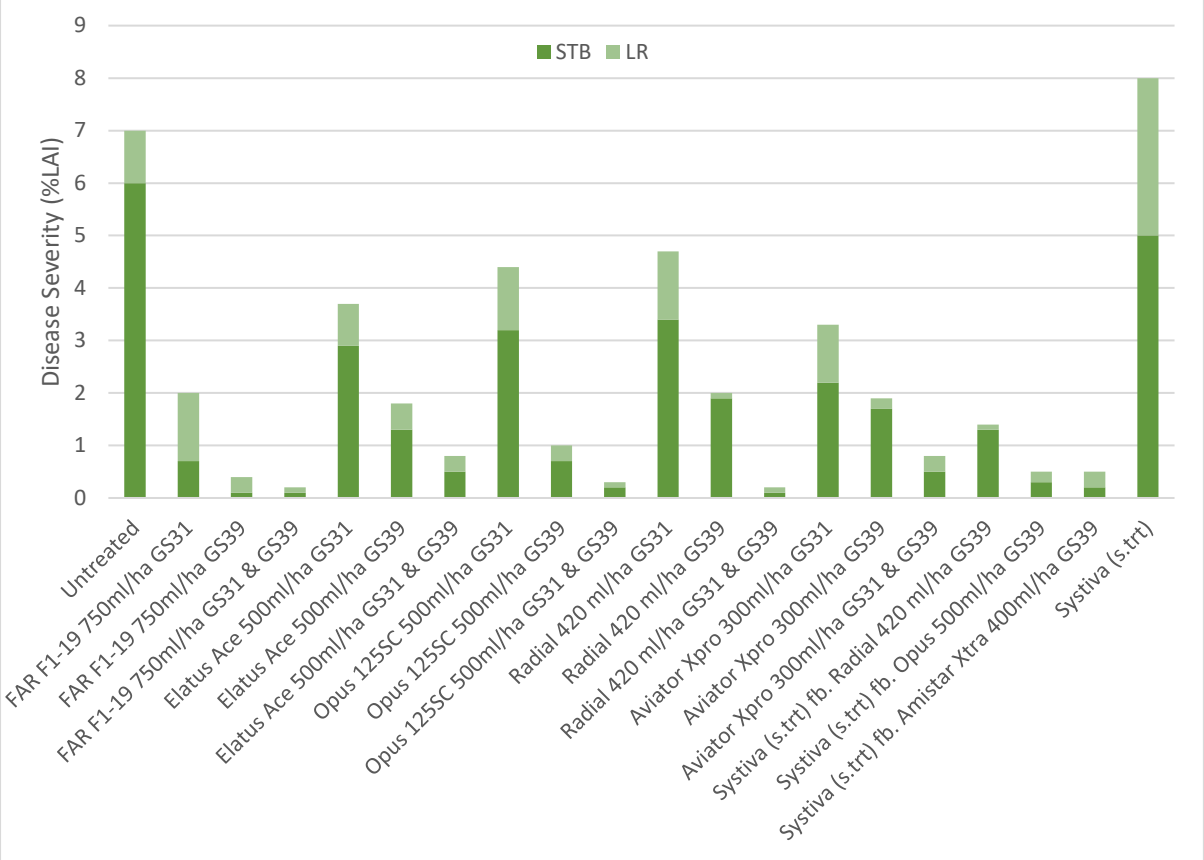

Figure 2. Septoria Tritici Blotch (STB) and Leaf Rust (LR) disease severity on flag leaf on 14 October at early head emergence GS51-53 – 59 days after the first application and 20 days after the second.

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Table 2. Details of trial management (kg, g, ml/ha).

Plant pop'n:		180 seeds/m^2 (150 plants/m^2 target)
Seed treatment:		Rancona Dimension/Gaucho
		+ Systiva (As per treatment list)
Basal Fertiliser:	17 April	145kg MAP
Nitrogen:	6 August	87 kg Urea (40 N)
	30 August	87 kg Urea (40 N)

All inputs of insecticides and herbicides were standard across the trial.
Available Soil Nitrogen (10th April) – 445.1 kg N/ha (0 – 60cm) prior to sowing

Meteorological Data- SA Crop Technology Centre

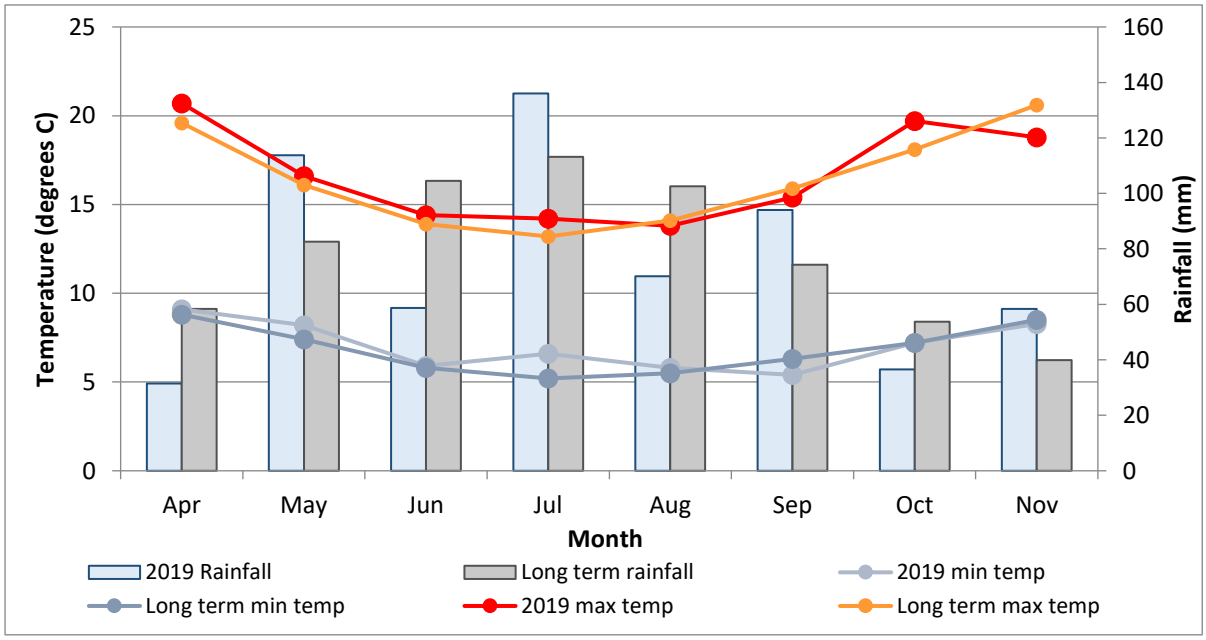

Figure 3. 2019 growing season rainfall and long-term rainfall (1877-2019) (recorded at Millicent), 2019 min and max temperatures and long-term min and max temperatures recorded at Mount Gambier (1941-2019) for the growing season (April-November). *Rainfall April to November= 598.8mm.*

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