PROVISIONAL HARVEST RESULTS:

Wheat Canopy Management Trial (early sown winter v spring germplasm)

2020 Esperance Crop Technology Centre

Optimising high rainfall zone cropping for profit in the Western and Southern Regions (DAW1903-008RMX)

A Grains Research & Development Corporation (GRDC) investment

Sown: 16 April
Harvested: 8 December
Rotation position: 1st Cereal after canola
Soil Type: Ripped and spaded to a depth of 40cm pre-sowing.

Key Messages:

- *Sown mid-April the highest yields (5.7 – 5.9 t/ha) came from the spring wheat cultivars and the shorter season winter wheat cultivars Illabo and LPB19-14343.*
- *Despite earlier sowing and emergence by the 25th April the rapid development of spring wheat cultivars Scepter and Cutlass escaped the effects of frost at this location, although severe winds in early May retarded the development of all cultivars relative to the early sowing date.*
- *Longer season winter wheats DS Bennett, RGT Accroc and Anapurna were significantly lower yielding and gave less early competition to a background ryegrass population at the site.*
- *Mechanical defoliation simulating grazing had greater negative impact on the highest yielding cultivars with no statistically significant impact on the lower yielding winter types.*
- *All cultivars responded positively to a greater input of applied nitrogen, PGR and fungicide (High Input), the effect of which appears to be primarily associated with additional nutrition.*

Table 1. Influence of cultivar on grain yield (t/ha) under different canopy management regimes.

	Canopy Management (Grain Yield t/ha)			
	Standard Input	**"Grazed" Standard***	**High Input**	**Mean**
Cultivar (type)	**t/ha**	**t/ha**	**t/ha**	**t/ha**
Scepter (Spring)	4.52 bc	3.97 ef	5.80 a	**4.76** a
Cutlass (Spring)	4.72 b	4.15 cde	5.86 a	**4.91** a
Illabo (Winter)	4.66 b	3.88 efg	5.82 a	**4.78** a
LPB19-14343 (Winter)	4.46 bc	4.05 def	5.74 a	**4.75** a
DS Bennett (Winter)	3.85 efg	3.57 gh	4.58 b	**4.00** b
Anapurna (Winter)	3.31 hi	3.09 i	4.07 def	**3.49** c
RGT Accroc (Winter)	3.89 efg	3.73 fg	4.40 bcd	**4.01** b
Mean	**4.20 b**	**3.78 b**	**5.18 a**	
LSD Cultivar p = 0.05		0.23	**P val**	**<0.001**
LSD Management p=0.05		0.54	**P val**	**<0.001**
LSD Cultivar x Management P=0.05		0.39	**P val**	**0.048**

Please read the notes accompanying these provisional harvest results for interpretation.

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Yield figures followed by the same letter are not considered to be statistically different (p=0.05), for example a yield of 4.46 bc is considered statistically different to 3.85 efg but not to a yield of 4.15 cde.
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 in this case). All provisional results have been analysed through ARM software with further analysis when the final results are released.
**"Grazed standard" – simulated grazing using mechanical defoliation*

The crop emerged quickly but was subject to severe winds on 6 May which buried and damaged plants at the 1 -2 leaf stage. The crop then re emerged but development of all cultivars was retarded slightly relative to the mid-April sowing date. The phenology data (Table 2) clearly indicates the more rapid development of the spring wheat cultivars and the large differences in winter wheat development with Illabo and LPB19-14343 being the faster of the winter wheats and RGT Accroc being the slowest.

Table 2. Calendar date that each cultivar reached stem elongation (GS30) and the beginning of flowering (GS61).

Cultivar (type)	Date GS30	Date GS61
Scepter (Spring)	8 June	3 August
Cutlass (Spring)	8 June	15 August
Illabo (Winter)	15 June	1 September
LPB19-14343 (Winter)	15 June	2 September
DS Bennett (Winter)	26 June	30 September
Anapurna (Winter)	21 July	10 October
RGT Accroc (Winter)	3 August	15 October

Table 3. Details of the three management levels (kg, g, ml/ha).

Plant pop'n:		180 seeds/m² (150 plants/m² target)		
		Standard	**Standard Grazed**	**High Input**
Grazed:		----	✓	----
Seed treatment:		Vibrance/ Gaucho		
Basal Fertiliser:	16 April	100kg 50% Vigour, 50% MAPZCS		
Nitrogen:	27 May	46 kg N	46 kg N	57.5 kg N
	19 June	46 kg N	46 kg N	57.5 kg N
	31 July	23 kg N	23 kg N	46.0 kg N
Total N (With 12 N at sowing)		**127kg N**	**127kg N**	**173kg N**
PGR:	GS31	----	----	Moddus Evo. 100ml Errex. 650mL
Fungicide:	GS00			Systiva
	GS31-32	Prosaro 150ml	Prosaro 150ml	Prosaro 300ml
	GS39	Opus 500ml	Opus 500ml	Amistar Xtra 600ml
Insecticide:	22 May	Trojan 15mL		
	20 August	Lorsban 600mL		
Herbicide:	30 March	Roundup Ultra Max 2L Ester 800mL		
	3 April	Gramoxone 1.2L		
	13 May	Treflan 3L Sakura 118g		
	23 May	Velocity 1L Lontrel 40g Plantocrop Oil 1%		

**Timings of PGRs and fungicides were adjusted to take account of the differences in spring and winter wheat phenology (development).*
Available Soil Nitrogen, 22 February 57 kg N/ha (0 – 80cm)

Meteorological Data – Esperance Crop Technology Centre

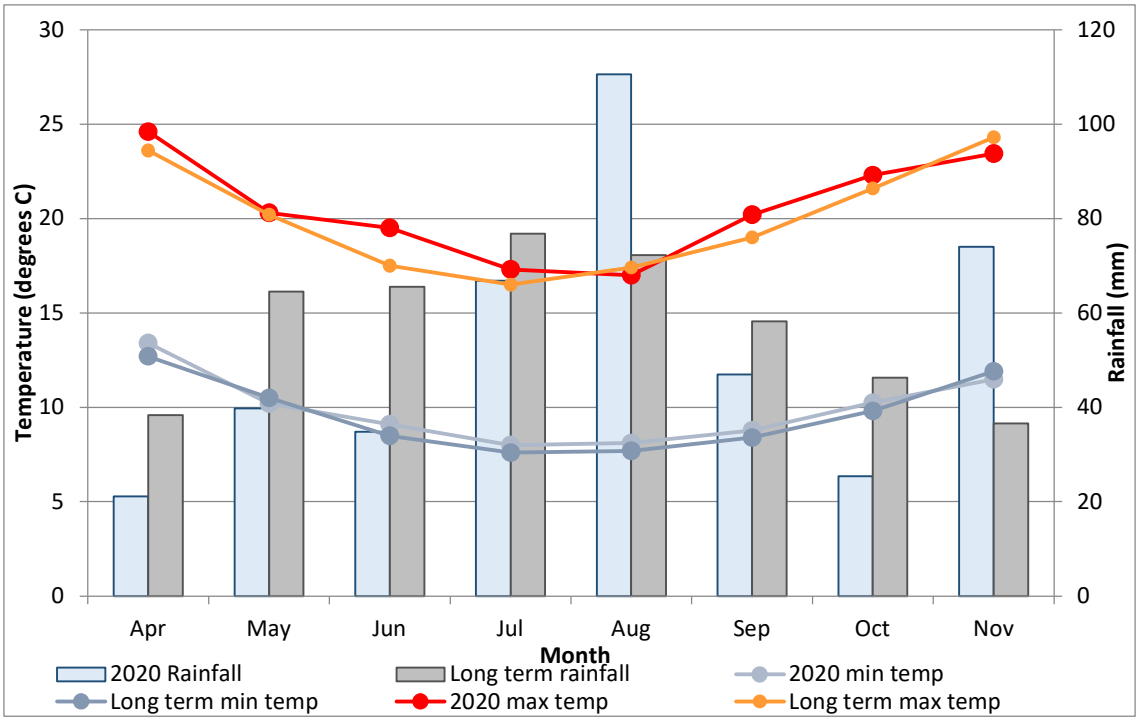

Figure 1. 2020 growing season rainfall and long-term rainfall, 2020 min and max temperatures and long- term min and max temperatures recorded Esperance Aerodrome (1950-2020) for the growing season (April-November).

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