

# PROVISIONAL HARVEST RESULTS:

## Barley Canopy Management Trial 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 2020

**Harvested:** 13 November 2020

**Rotation position:** 1<sup>st</sup> Cereal after canola

**Soil Management:** Ripped and spaded to a depth of 40cm pre-sowing.

#### Key Messages:

- In a season with a dry start, NV8 Nitro under a higher input canopy management approach was the highest yielding barley on the trial site at 7.23 t/ha.
- There was a significant interaction between cultivar and management approach, with the French cultivar Cassiopee being the only cultivar not to respond to higher input.
- The earlier maturing winter barley Urambie responded similarly to the spring barleys, although with higher dry matter accumulation at GS30.
- Four of the five cultivars responded to higher input, a result that appears to be linked to additional nitrogen, grain quality analysis is yet to be conducted.
- The later development of the winter barley Cassiopee resulted in double the dry matter accumulation by GS30 but significantly lower grain yields compared to all other cultivars.
- Overall grazing had little influence on grain yield in any of the cultivars, a result that may have been linked to the early sowing.

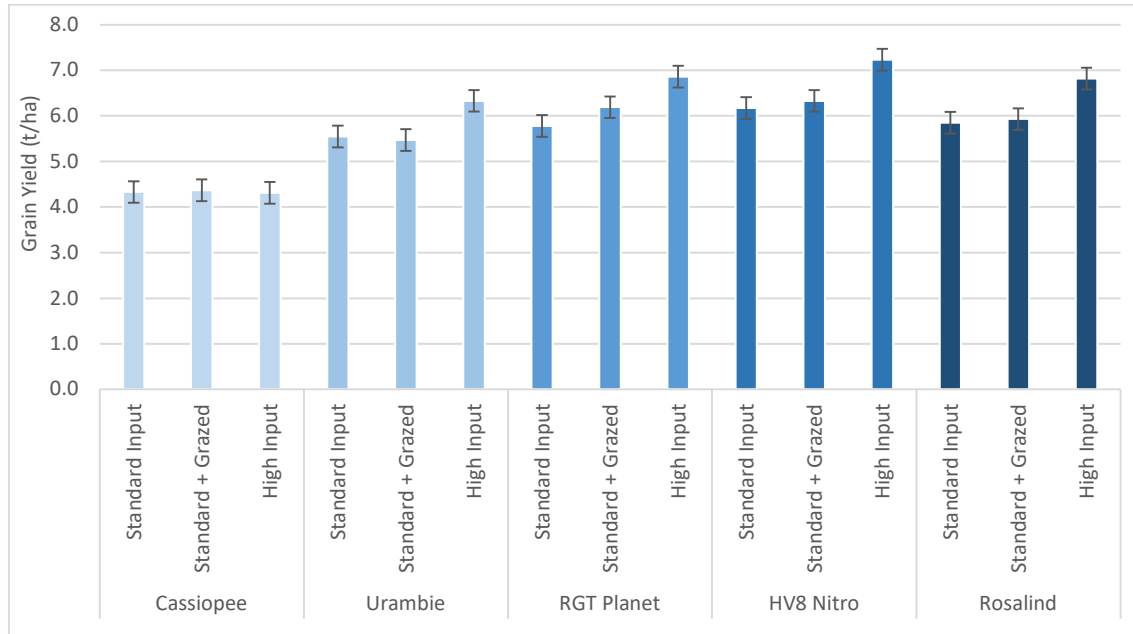
**Table 1.** Influence of cultivar on grain yield (t/ha) under different canopy management regimes.

Cultivar (type)	Canopy Management (Grain Yield t/ha)		
	Standard Input	"Grazed" Standard*	High Input
	t/ha	t/ha	t/ha
Cassiopee (winter barley)	4.33 e	4.37 e	4.31 e
Urambie (winter barley)	5.55 d	5.47 d	6.33 b
RGT Planet (spring barley)	5.78 cd	6.19 bc	6.86 a
HV8 Nitro (spring barley)	6.17 bc	6.33 b	7.23 a
Rosalind (spring barley)	5.85 cd	5.93 bcd	6.82 a
<b>LSD Cultivar p = 0.05</b>		0.27	<b>P val &lt;0.001</b>
<b>LSD Management p=0.05</b>		0.46	<b>P val 0.012</b>
<b>LSD Cultivar x Management P=0.05</b>		0.48	<b>P val 0.030</b>

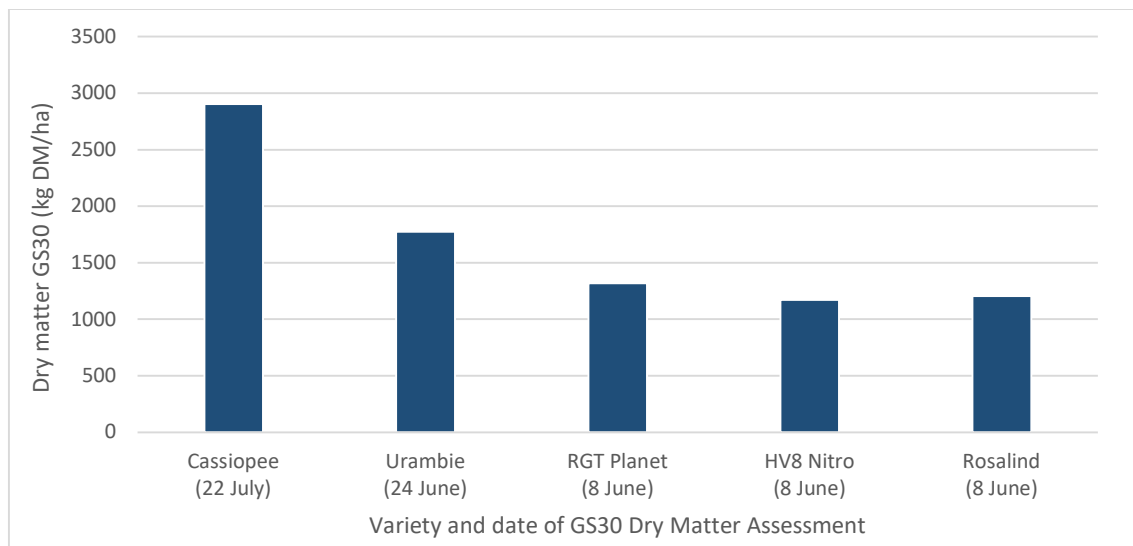
Please read the notes accompanying these provisional harvest results for interpretation.

Issued: 25 November 2020

Yield figures followed by the same letter are not considered to be statistically different ( $p=0.05$ ), for example a yield of 6.17 bc is considered statistically different to 6.86a but not to a yield of 5.93bcd.  
 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



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



**Figure 2.** Influence of variety on total above ground dry matter production at the start of stem elongation (GS30).

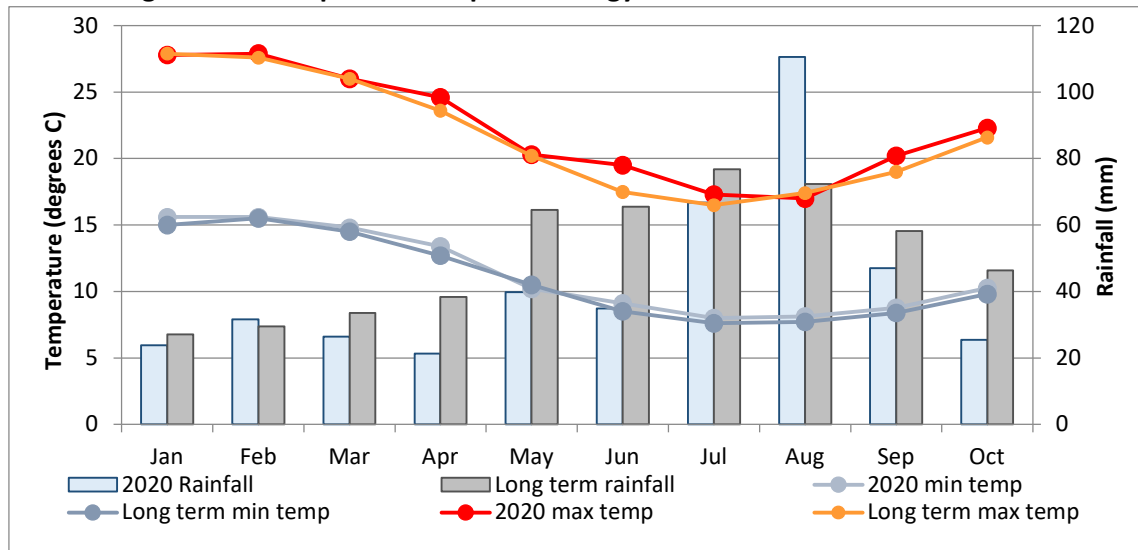
**Table 4.** Details of the three management levels (kg, g, ml/ha).

Plant pop'n:		180 seeds/m <sup>2</sup> (150 plants/m <sup>2</sup> target)		
		Standard	Standard Grazed	High Input
<b>Grazed:</b>		----	✓	----
<b>Seed treatment:</b>		Rancona Dimension/ Gaucho	Rancona Dimension/ Gaucho	Rancona Dimension/ Gaucho
<b>Basal Fertiliser:</b>	16 April	100kg 50% Vigour, 50% MAPZCS	100kg 50% Vigour, 50% MAPZCS	100kg 50% Vigour, 50% MAPZCS
<b>Nitrogen:</b>	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 kg N
<b>Total N (With 12 N at sowing)</b>		<b>127kg N</b>	<b>127kg N</b>	<b>173kg N</b>
<b>PGR:</b>	GS31	----	----	Mod. 100ml*
	GS37	----	----	Mod. 100ml**
<b>Fungicide:</b>	GS00			Systiva
	GS31-32	Prosaro 150ml	Prosaro 150ml	Prosaro 300ml
	GS49	Opus 500ml	Opus 500ml	Amistar Xtra 600ml

All other inputs of insecticides and herbicides were standard across the trial. Mod. - Moddus

\*Timings of PGRs and fungicides were adjusted to take account of the differences in spring and winter barley phenology (development). \*\* Rosalind did not receive this input. 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-October).

**Field Applied Research (FAR) Australia gratefully acknowledges the investment support of the GRDC in order to generate this research, project partners DPIRD and CSIRO and the input of the Whiting Family in managing this research trial.**

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