

Barley National Variety Trial - Yealering

Living Farm

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KEY MESSAGES

The top yielding varieties in this trial were Buff, Fathom, Beast, Rosalind and Maximus CL (4.85 t/ha average for the top 5 varieties) with 0.17 t/ha difference between the first & the fifth variety. Season 2020 in the region started with rainfall events in February and March which provided some subsoil moisture, below average winter rains were followed by a dryer than average spring & early finish favouring the quicker varieties.

Grower decision on variety choice for 2021 should not purely be based on this data but include data from across the region and over a number of years.

AIM

The aim of the National Variety Trials (NVT) is to generate independent information for growers and industry about newly released varieties of field crops to the current commercial varieties grown in the area.

BACKGROUND

The NVT program has been designed to identify the highest yielding varieties, free from the constraints of nutrition and disease. As a result, the nutrition and crop protection packages applied to NVT trials are typically higher than may be applied by the average grower. Management is the same for all plots with no differences in timing for crop protection or nutrition. All trials have 3 replicates of each variety and all plots are sown (and subsequently harvested) on the same day. Timing of sowing is dependent upon the season, but is typically done within an average district “best practice” window and located on a typical soil type for the area.

TRIAL DETAILS

Plot size & replication	10 m x 1.72 m x 3 replicates
Soil type	Sand – sandy loam
Paddock rotation:	2019 Lupins
Sowing date	9/5/20
Sowing rate	150 seed/m ²
Fertiliser	18/5/20: Urea 100 kg/ha, Macro Pro Extra 130 kg/ha 11/7/20 Flexi N 100 L/ha
Herbicides, insecticides & fungicides	Knockdown & pre-emergs pre-seeding Broadleaf spray Grass spray 2 x Fungicide sprays 2 x Insecticide sprays Details of chemicals used and rates available at nvtonline.com.au
Growing season rainfall	174.4 mm (May-Oct)

Table 1: Rainfall (mm) Source BOM PPD Data

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
0.0	55.4	11.2	7.2	31.8	58.2	20.0	36.4	28.0	0.0	22.0	0.0

TREATMENTS

1	AGTB0043		17	Fathom
2	AGTB0188		18	Flinders
3	AGTB0197		19	IGB1825
4	AGTB0200		20	IGB1844
5	AGTB0201		21	IGB1967
6	AGTB0213		22	La Trobe
7	Alestar		23	Laperouse
8	Bass		24	Leabrook
9	Beast		25	Litmus
10	Buff		26	Maximus CL
11	Commander		27	Mundah
12	Commodus CL		28	RGT Planet
13	Compass		29	Rosalind
14	EDGE07-8120		30	Scope
15	EDGE07-8424A		31	Spartacus CL
16	EDGE17B-007-07		32	Traveler

SOIL COMPOSITION

Table 2: Soil composition of the Yealering NVT cereal trial site at 0-10 cm and 10-30 cm.

Depth	Texture 1 sand, 2 sandy loam, 3 loam, 4 loamy clay, 5 clay	Total Nitrogen mg/kg	Phosphorus mg/kg	P Test Type	Organic Carbon %	pH (water)	pH (CaCl ₂)	Conductivity (EC) dS/m	ESP %
0-10	1	18	11	Colwell	0.8	5.8	5	0.1	1.98
10-30	2	16				6.1	5.3	0.1	1.69

FIELD PLAN



	Range 1	Range 2	Range 3	Range 4	Range 5	Range 6
Row 1	Mundah	Beast	Maximus CL	La Trobe	IGB1844	Fathom
Row 2	IGB1967	Rosalind	AGTB0200	Compass	Commander	Buff
Row 3	RGT Planet	AGTB0043	Bass	Spartacus CL	Laperouse	EDGE07-8120
Row 4	AGTB0213	Alestar	IGB1825	Commodus CL	Leabrook	EDGE17B-007-07
Row 5	Scope	AGTB0188	EDGE07-8424A	Traveler	Litmus	AGTB0201
Row 6	AGTB0197	Flinders	Leabrook	Scope	Bass	Commodus CL
Row 7	Maximus CL	EDGE17B-007-07	AGTB0043	Commander	Traveler	IGB1967
Row 8	Laperouse	AGTB0200	AGTB0188	EDGE07-8120	Mundah	La Trobe
Row 9	Compass	AGTB0201	Fathom	Rosalind	AGTB0197	IGB1825
Row 10	EDGE07-8424A	Buff	Beast	RGT Planet	Alestar	Flinders
Row 11	Litmus	Spartacus CL	AGTB0213	IGB1844	Rosalind	EDGE07-8424A
Row 12	Commodus CL	IGB1844	Mundah	Buff	AGTB0213	AGTB0043
Row 13	EDGE07-8120	Leabrook	AGTB0201	AGTB0197	AGTB0188	Spartacus CL
Row 14	IGB1825	Traveler	Laperouse	EDGE17B-007-07	Compass	Beast
Row 15	Commander	La Trobe	Flinders	Litmus	RGT Planet	AGTB0200
Row 16	Fathom	Bass	IGB1967	Alestar	Maximus CL	Scope

RESULTS

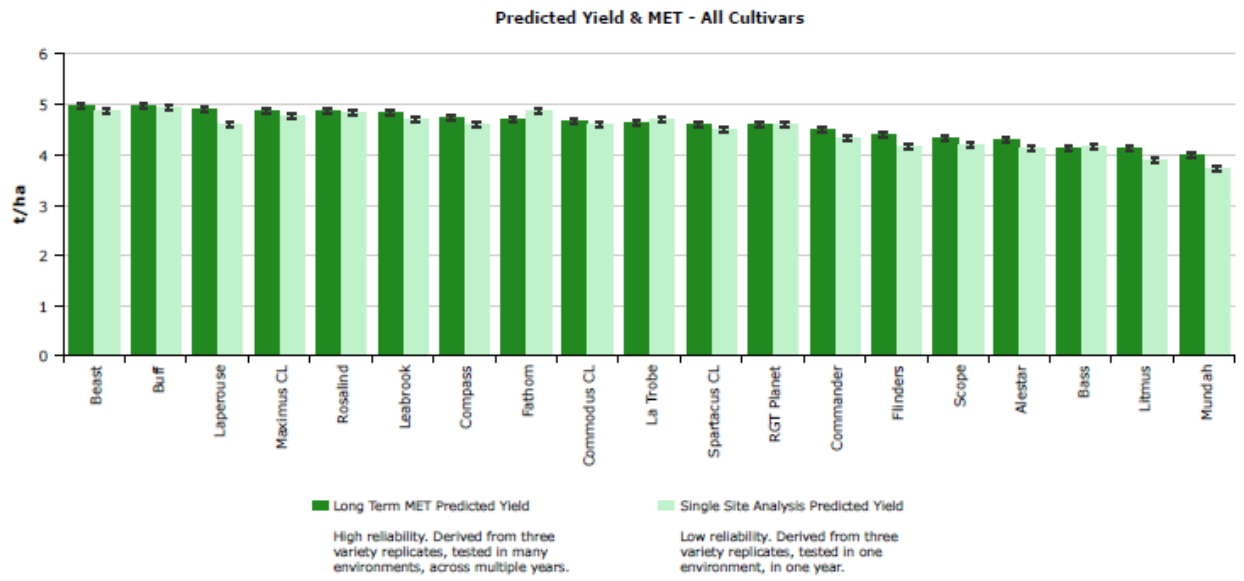


Figure 1: Yield comparison of barley cultivars sown in Yealering, 2020

Table 3: 2020 yield analysis and grain quality of barley cultivars at Yealering in descending order of yield (t/ha)

Variety	Long term MET predicted yield (t/ha)	Single site analysis Yield (t/ha)	1000 grain weight g/1000 seeds	Protein %	Grain Brightness (Colour)	Hectolitre Weight (kg/hl)	Screenings <2.2mm sieve (%)	Screenings (WA) <2.5mm sieve (%)	Retention Screenings >2.5mm sieve (%)
Beast	4.95	4.85	45.6	10.2	63.9	70.8	1.4	10.0	90.0
Buff	4.95	4.93	40.6	10.3	62.1	70.3	1.8	14.9	85.1
Laperouse	4.90	4.62	35.5	10.0	65.3	72.1	1.7	14.9	85.1
Maximus CL	4.86	4.76	42.1	10.4	62.6	73.7	1.1	8.3	91.7
Rosalind	4.86	4.83	40.7	10.1	61.4	71.4	1.6	13.6	86.4
Leabrook	4.85	4.71	42.3	9.7	64.5	69.8	1.3	6.8	93.2
Compass	4.73	4.60	43.5	9.8	64.7	70.0	1.6	9.6	90.4
Fathom	4.72	4.86	42.1	10.5	62.2	69.7	1.9	13.0	87.0
Commodus CL	4.65	4.58	42.1	10.1	64.0	70.4	1.9	12.8	87.2
La Trobe	4.64	4.70	38.8	10.4	62.5	72.5	2.0	16.6	83.4
Spartacus CL	4.59	4.50	40.7	11.0	63.0	73.0	1.2	10.6	89.4
RGT Planet	4.58	4.57	39.1	9.8	62.4	69.7	2.3	19.4	80.6
Commander	4.50	4.33	36.3	10.7	64.0	69.6	2.3	18.4	81.6
Flinders	4.38	4.14	36.6	10.9	63.3	72.0	1.7	16.8	83.2
Scope	4.32	4.21	40.9	10.7	62.3	72.2	1.9	19.9	80.1
Alestar	4.29	4.13	37.3	10.7	63.5	71.0	1.8	14.0	86.0
Bass	4.14	4.16	40.9	11.2	62.3	72.9	0.9	10.1	89.9
Litmus	4.14	3.90	42.2	10.6	63.2	72.8	0.8	9.7	90.3
Mundah	3.96	3.73	48.1	11.2	62.6	70.5	0.6	6.1	93.9

VARIETY DESCRIPTIONS

For variety descriptions and information on the best choice of variety to grow this season see the 2021 WA Crop Sowing Guide at <https://grdc.com.au/2021-western-australian-crop-sowing-guide>

COMMENTS

The NVT Yealering Barley trial was sown on the 18th May into moisture, had excellent germination and seasonal growth. The trial yielded well with an overall site yield of 4.5 t/ha with good protein, colour & screenings levels on below average seasonal rainfall and an early finish.

For results of all NVT trials for 2020 please visit the National Variety Trials online www.nvtonline.com.au

ACKNOWLEDGMENTS

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