

# Barley National Variety Trial - Narrogin

Living Farm

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## KEY MESSAGES

- The top yielding varieties in this trial were Compass, La Trobe, Rosalind, Leabrook & Beast (4.06 t/ha average for the top 5 varieties) with 0.31 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

|  |  |
|--|--|
| <b>Plot size &amp; replication</b>               | 10 m x 1.72 m x 3 replicates   |
| <b>Soil type</b>                                 | Sand   |
| <b>Paddock rotation:</b>                         | 2019 Lupins  |
| <b>Sowing date</b>                               | 18/5/20 dry sown   |
| <b>Sowing rate</b>                               | 150 seed/m <sup>2</sup>  |
| <b>Fertiliser</b>                                | 18/5/20: Urea 100 kg/ha, Macro Pro Extra 130 kg/ha<br>11/7/20 Flexi N 100 L/ha<br>21/7/20 Flexi N 100 L/ha   |
| <b>Herbicides, insecticides &amp; fungicides</b> | Knockdown & pre-emergents pre-seeding<br>Broadleaf spray<br>Grass spray<br>2 x Fungicide sprays<br>2 x Insecticide sprays<br>Details of chemicals used and rates available at <a href="http://nvtonline.com.au">nvtonline.com.au</a> |
| <b>Growing season rainfall</b>                   | 246 mm (May-Oct)   |

**Table 1:** Rainfall (mm) Source BOM PPD Data

|     |      |      |       |      |      |      |      |      |     |      |     |
|-----|------|------|-------|------|------|------|------|------|-----|------|-----|
| Jan | Feb  | Mar  | April | May  | June | July | Aug  | Sept | Oct | Nov  | Dec |
| 0.2 | 42.5 | 24.8 | 3.4   | 51.8 | 55.2 | 34.6 | 47.2 | 49.2 | 8.4 | 46.0 | 0.0 |

**TREATMENTS**

|    |                |  |    |              |
|----|----------------|--|----|--------------|
| 1  | AGTB0043       |  | 20 | GrangeR      |
| 2  | AGTB0188       |  | 21 | IGB1825      |
| 3  | AGTB0197       |  | 22 | IGB1844      |
| 4  | AGTB0200       |  | 23 | IGB1871      |
| 5  | AGTB0201       |  | 24 | IGB1954      |
| 6  | AGTB0213       |  | 25 | IGB1967      |
| 7  | Alestar        |  | 26 | La Trobe     |
| 8  | Bass           |  | 27 | Laperouse    |
| 9  | Beast          |  | 28 | Leabrook     |
| 10 | Buff           |  | 29 | Litmus       |
| 11 | Commander      |  | 30 | Maximus CL   |
| 12 | Commodus CL    |  | 31 | Mundah       |
| 13 | Compass        |  | 32 | RGT Planet   |
| 14 | EDGE07-8120    |  | 33 | Rosalind     |
| 15 | EDGE07-8424A   |  | 34 | Scope        |
| 16 | EDGE17B-007-07 |  | 35 | SFR85-016    |
| 17 | EDGE17B-008-04 |  | 36 | Spartacus CL |
| 18 | Fathom         |  | 37 | Traveler     |
| 19 | Flinders       |  |    |              |

**SOIL COMPOSITION****Table 2:** Soil composition of the Narrogin NVT cereal trial site at 0-10cm and 10-30cm.

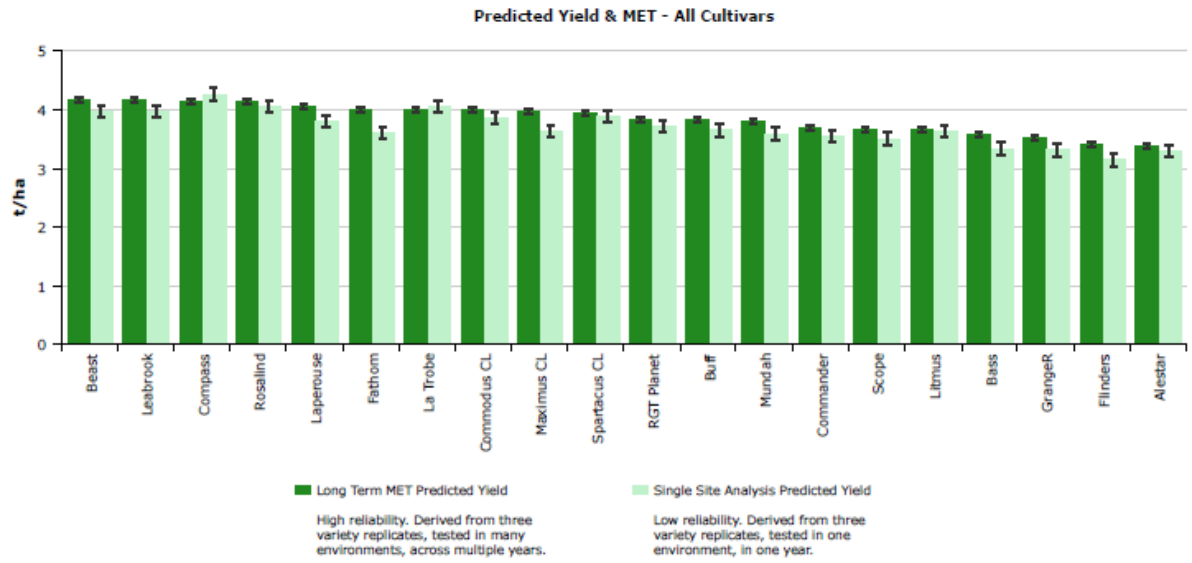
| Depth | Texture<br>1 sand,2<br>sandy<br>loam, 3<br>loam, 4<br>loamy<br>clay, 5<br>clay | Total<br>Nitrogen<br>mg/kg | Phosphorus<br>mg/kg | P Test<br>Type | Organic<br>Carbon<br>% | pH<br>(water) | pH<br>(CaCL <sub>2</sub> ) | Conductivity<br>(EC) dS/m | ESP<br>% |
|-------|--|----------------------------|---------------------|----------------|------------------------|---------------|----------------------------|---------------------------|----------|
| 0-10  | 1  | 8                          | 36                  | Colwell        | 0.5                    | 5.6           | 4.8                        | 0                         | 1.45     |
| 10-30 | 1  | 3                          |                     |                |                        | 5.6           | 4.7                        | 0                         | 2.99     |

**FIELD PLAN**



|               | Range 1        | Range 2      | Range 3      | Range 4        | Range 5        | Range 6      |
|---------------|----------------|--------------|--------------|----------------|----------------|--------------|
| <b>Row 1</b>  | Compass        | Flinders     | Laperouse    | IGB1967        | Beast          | AGTB0201     |
| <b>Row 2</b>  | Commodus CL    | AGTB0188     | Traveler     | Litmus         | Bass           | Fathom       |
| <b>Row 3</b>  | EDGE17B-007-07 | Commander    | IGB1871      | Leabrook       | IGB1954        | AGTB0197     |
| <b>Row 4</b>  | EDGE17B-008-04 | Alestar      | Maximus CL   | Mundah         | Filler 1       | Scope        |
| <b>Row 5</b>  | SFR85-016      | IGB1844      | EDGE07-8120  | IGB1825        | EDGE07-8424A   | GrangeR      |
| <b>Row 6</b>  | AGTB0200       | Buff         | La Trobe     | Spartacus CL   | RGT Planet     | AGTB0043     |
| <b>Row 7</b>  | AGTB0213       | Rosalind     | RGT Planet   | Buff           | EDGE17B-007-07 | EDGE07-8120  |
| <b>Row 8</b>  | Filler 1       | La Trobe     | AGTB0197     | Commodus CL    | IGB1967        | AGTB0200     |
| <b>Row 9</b>  | IGB1871        | Scope        | AGTB0188     | SFR85-016      | Mundah         | Laperouse    |
| <b>Row 10</b> | Spartacus CL   | EDGE07-8424A | AGTB0213     | Beast          | Traveler       | Alestar      |
| <b>Row 11</b> | Bass           | Maximus CL   | GrangeR      | EDGE17B-008-04 | IGB1844        | Compass      |
| <b>Row 12</b> | AGTB0201       | IGB1825      | IGB1954      | Rosalind       | Flinders       | Litmus       |
| <b>Row 13</b> | Leabrook       | Fathom       | Commander    | AGTB0043       | Commodus CL    | Rosalind     |
| <b>Row 14</b> | Laperouse      | AGTB0043     | EDGE07-8424A | Bass           | Leabrook       | AGTB0188     |
| <b>Row 15</b> | AGTB0197       | Mundah       | AGTB0200     | EDGE17B-007-07 | Maximus CL     | Spartacus CL |
| <b>Row 16</b> | Traveler       | IGB1954      | Compass      | Scope          | Buff           | SFR85-016    |
| <b>Row 17</b> | GrangeR        | IGB1967      | Fathom       | IGB1844        | AGTB0213       | La Trobe     |
| <b>Row 18</b> | Litmus         | EDGE07-8120  | Filler 1     | AGTB0201       | EDGE17B-008-04 | Commander    |
| <b>Row 19</b> | RGT Planet     | Beast        | Flinders     | Alestar        | IGB1871        | IGB1825      |

# RESULTS



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

**Table 3:** 2020 Yield Analysis and Grain Quality of barley cultivars at Narrogin 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        | 4.16                                 | 3.96                              | 45.8                           | 11.4      | 63.5                      | 67.9                      | 0.8                         | 4.3                              | 95.7                                  |
| Leabrook     | 4.15                                 | 3.97                              | 41.3                           | 11.2      | 63.0                      | 66.3                      | 1.2                         | 5.9                              | 94.1                                  |
| Compass      | 4.14                                 | 4.27                              | 41.7                           | 11.4      | 63.4                      | 67.1                      | 2.1                         | 10.6                             | 89.4                                  |
| Rosalind     | 4.14                                 | 4.05                              | 40.2                           | 11.5      | 60.0                      | 70.1                      | 1.1                         | 11.3                             | 88.7                                  |
| Laperouse    | 4.05                                 | 3.79                              | 37.9                           | 10.7      | 65.0                      | 69.1                      | 0.8                         | 5.5                              | 94.5                                  |
| Fathom       | 4.01                                 | 3.61                              | 46.7                           | 12.9      | 59.8                      | 67.2                      | 0.8                         | 6.7                              | 93.3                                  |
| La Trobe     | 4.01                                 | 4.05                              | 38.7                           | 11.7      | 62.8                      | 70.0                      | 2.7                         | 20.7                             | 79.3                                  |
| Commodus CL  | 4.00                                 | 3.86                              | 38.3                           | 11.1      | 63.6                      | 66.6                      | 1.7                         | 9.5                              | 90.5                                  |
| Maximus CL   | 3.96                                 | 3.62                              | 43.1                           | 11.3      | 59.7                      | 71.0                      | 0.4                         | 3.0                              | 97.0                                  |
| Spartacus CL | 3.94                                 | 3.88                              | 39.4                           | 12.0      | 62.0                      | 70.0                      | 1.4                         | 11.4                             | 88.6                                  |
| RGT Planet   | 3.82                                 | 3.71                              | 42.0                           | 11.4      | 62.6                      | 67.9                      | 1.3                         | 13.3                             | 86.7                                  |
| Buff         | 3.82                                 | 3.64                              | 40.1                           | 11.6      | 61.4                      | 68.4                      | 1.1                         | 7.9                              | 92.1                                  |
| Mundah       | 3.81                                 | 3.59                              | 47.3                           | 12.2      | 60.0                      | 66.8                      | 1.0                         | 7.0                              | 93.0                                  |
| Commander    | 3.70                                 | 3.54                              | 36.6                           | 11.7      | 63.0                      | 67.2                      | 3.8                         | 19.2                             | 80.8                                  |
| Scope        | 3.66                                 | 3.50                              | 43.2                           | 12.0      | 62.4                      | 68.9                      | 1.2                         | 10.2                             | 89.8                                  |
| Litmus       | 3.66                                 | 3.63                              | 41.3                           | 12.8      | 60.4                      | 71.1                      | 0.7                         | 9.8                              | 90.2                                  |
| Bass         | 3.57                                 | 3.34                              | 45.5                           | 13.2      | 59.7                      | 70.1                      | 0.5                         | 2.7                              | 97.3                                  |
| GrangeR      | 3.52                                 | 3.31                              | 39.6                           | 12.7      | 59.3                      | 68.4                      | 2.4                         | 17.9                             | 82.1                                  |
| Flinders     | 3.42                                 | 3.15                              | 39.7                           | 12.6      | 61.3                      | 70.4                      | 0.9                         | 9.4                              | 90.6                                  |
| Alestar      | 3.37                                 | 3.30                              | 39.2                           | 11.8      | 63.2                      | 69.2                      | 1.9                         | 13.5                             | 86.5                                  |

### 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 Narrogin Barley trial was sown on the 18<sup>th</sup> May into dry soil and germinated after opening rains on the 25<sup>th</sup> May. Some staggered germination was observed due to non-wetting soil and initial growth was compromised due to grazing by kangaroos. The trial was fenced and the addition of good nutrition saw it recover to have an overall site yield of 3.7 t/ha with good protein, colour & screenings levels.

For results of all NVT trials for 2020 please visit the National Variety Trials online  
[www.nvtonline.com.au](http://www.nvtonline.com.au)

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