

# Wheat National Variety Trial - Yealering

Living Farm

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## KEY MESSAGES

The top yielding varieties in this trial were Scepter, Ninja, Rockstar, Catapult & Devil (4.08 t/ha average for the top 5 varieties) with 0.24 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 – sandy loam
<b>Paddock rotation:</b>	2019 Lupins
<b>Sowing date</b>	9/5/20
<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 11/7/20 Flexi N 100 L/ha 20/8/20 Flexi N 60 L/ha
<b>Herbicides, insecticides &amp; fungicides</b>	Knockdown & pre-emergents pre-seeding Broadleaf spray Grass spray 2 x Fungicide sprays 2 x Insecticide sprays Details of chemicals used and rates available at <a href="http://nvtonline.com.au">nvtonline.com.au</a>
<b>Growing season rainfall</b>	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	BSWDH05-233		28	LPB17-6155
2	Calingiri		29	LPB17-6156
3	Catapult		30	LPB17-6157
4	Chief CL Plus		31	LRPB Cobra
5	Corack		32	LRPB Havoc
6	Cutlass		33	LRPB Nyala
7	Denison		34	LRPB Oryx
8	Devil		35	LRPB Trojan
9	EDGE12W-011-04		36	Mace
10	EDGE16Q-0155		37	Magenta
11	EDGE19SA-1098		38	Ninja
12	EDGE19WB-4112		39	OAGT0024
13	Emu Rock		40	RAC2721
14	Hammer CL Plus		41	RAC2736
15	IGW6483		42	Razor CL Plus
16	IGW6496		43	RockStar
17	IGW6563		44	Scepter
18	IGW6576		45	Sheriff CL Plus
19	IGW6636		46	Sting
20	IGW6637		47	Supreme
21	IGW7008		48	Tungsten
22	IGW8073		49	Valiant CL Plus
23	IGW8139		50	Vixen
24	Kinsei		51	Wedin
25	LPB16-5783		52	Wyalkatchem
26	LPB16-6150		53	Yitpi
27	LPB16-7401		54	Zen

## SOIL COMPOSITION

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

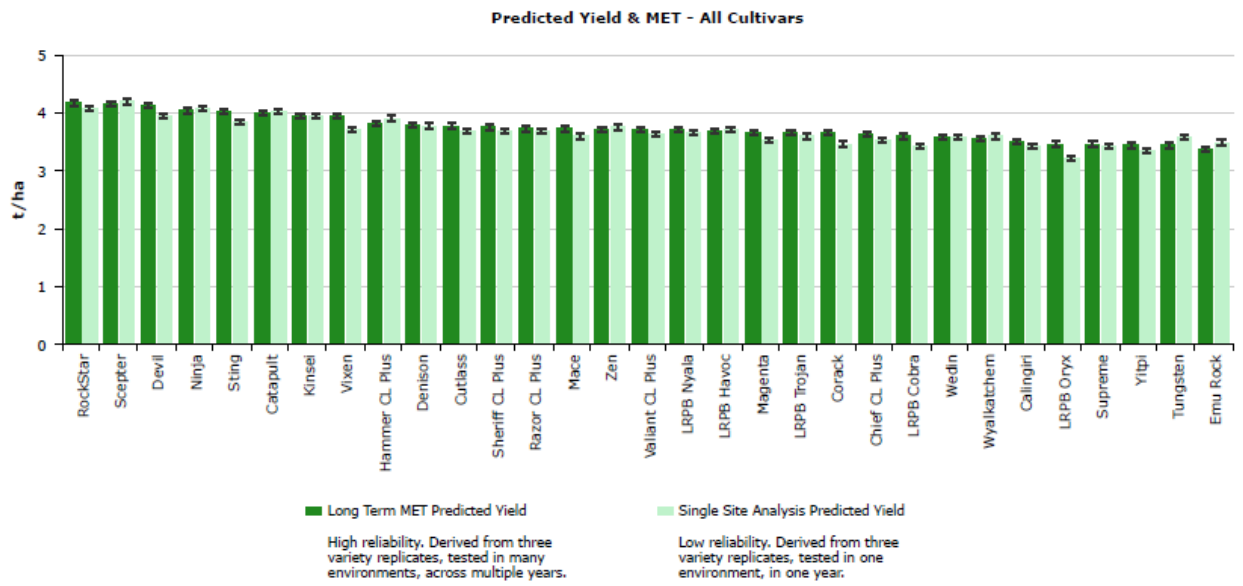
Depth	Texture 1 sand, 2 sandy loam, 3 loam, 4 loamy clay, 5 clay	Total Nitrogen mg/kg	Phosphorus mg/kg	P Test Type	Organic Carbon %	pH (water)	pH (CaCl <sub>2</sub> )	Conductivity (EC) dS/m	ESP %
0-10	1	18	11	Colwell	0.8	5.8	5	0.1	1.98
10-30	2	16				6.1	5.3	0.1	1.69

**FIELD PLAN**



	Range 1	Range 2	Range 3	Range 4	Range 5	Range 6
<b>Row 1</b>	LPB17-6157	Ninja	IGW6636	Scepter	LPB17-6155	LPB16-6150
<b>Row 2</b>	IGW6637	LPB17-6156	EDGE12W-011-04	LPB16-7401	Magenta	Chief CL Plus
<b>Row 3</b>	IGW7008	EDGE19WB-4112	Zen	EDGE19SA-1098	RAC2721	Cutlass
<b>Row 4</b>	Vixen	IGW6483	LRPB Trojan	Catapult	Corack	EDGE16Q-0155
<b>Row 5</b>	Yitpi	RAC2736	LPB16-5783	Razor CL Plus	Mace	Hammer CL Plus
<b>Row 6</b>	Wedin	Valiant CL Plus	Emu Rock	LRPB Nyala	Sting	IGW6563
<b>Row 7</b>	Tungsten	LRPB Cobra	Supreme	RockStar	BSWDH05-233	OAGT0024
<b>Row 8</b>	IGW8139	Denison	Kinsei	IGW6576	Wyalkatchem	Sheriff CL Plus
<b>Row 9</b>	Devil	LRPB Oryx	IGW6496	Calingiri	IGW8073	LRPB Havoc
<b>Row 10</b>	Sheriff CL Plus	BSWDH05-233	Chief CL Plus	Hammer CL Plus	Vixen	LRPB Oryx
<b>Row 11</b>	RAC2721	LPB16-5783	LPB17-6155	IGW8073	LPB17-6156	LRPB Nyala
<b>Row 12</b>	LPB16-6150	EDGE12W-011-04	Wyalkatchem	Yitpi	Emu Rock	EDGE19WB-4112
<b>Row 13</b>	Zen	Scepter	Valiant CL Plus	OAGT0024	Denison	Calingiri
<b>Row 14</b>	EDGE16Q-0155	Mace	Devil	IGW6637	IGW6636	EDGE19SA-1098
<b>Row 15</b>	Razor CL Plus	IGW6563	Ninja	Corack	RockStar	Kinsei
<b>Row 16</b>	Supreme	Catapult	Magenta	RAC2736	IGW7008	Wedin
<b>Row 17</b>	Sting	LRPB Havoc	Tungsten	Cutlass	LPB16-7401	LRPB Trojan
<b>Row 18</b>	IGW6496	IGW6576	IGW6483	IGW8139	LPB17-6157	LRPB Cobra
<b>Row 19</b>	IGW6636	Cutlass	IGW6563	LRPB Cobra	Yitpi	IGW6483
<b>Row 20</b>	OAGT0024	LPB17-6155	EDGE16Q-0155	IGW7008	IGW8139	EDGE12W-011-04
<b>Row 21</b>	LPB16-7401	Calingiri	Sheriff CL Plus	LPB17-6156	Zen	RAC2736
<b>Row 22</b>	Corack	Chief CL Plus	EDGE19WB-4112	Denison	IGW6637	Ninja
<b>Row 23</b>	LRPB Nyala	LRPB Trojan	LPB17-6157	Mace	Valiant CL Plus	Supreme
<b>Row 24</b>	Wyalkatchem	RockStar	LRPB Oryx	Wedin	Razor CL Plus	Scepter
<b>Row 25</b>	Hammer CL Plus	Emu Rock	RAC2721	BSWDH05-233	Tungsten	IGW6576
<b>Row 26</b>	Magenta	EDGE19SA-1098	Vixen	LRPB Havoc	IGW6496	LPB16-5783
<b>Row 27</b>	Kinsei	IGW8073	Sting	LPB16-6150	Catapult	Devil

# RESULTS



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

Variety	Long term MET predicted yield (t/ha)	Single site analysis Yield (t/ha)	1000 grain weight g/1000 seeds	Protein %	Hectolitre Weight (kg/hl)	Screenings <2.0mm sieve (%)
RockStar	4.17	4.10	45.2	11.2	82.4	1.2
Scepter	4.15	4.20	46.4	10.8	83.3	1.0
Devil	4.14	3.96	47.4	11.2	82.5	0.9
Ninja	4.03	4.10	45.1	11.3	83.0	1.1
Sting	4.02	3.84	49.2	12.2	82.2	0.7
Catapult	3.99	4.03	41.6	11.0	82.9	0.8
Kinsei	3.96	3.95	42.8	11.1	82.4	0.7
Vixen	3.96	3.71	50.2	12.8	81.5	0.5
Hammer CL Plus	3.81	3.92	40.6	11.7	82.7	0.8
Denison	3.81	3.77	40.5	11.0	82.7	0.7
Cutlass	3.77	3.70	40.8	12.1	82.1	0.8
Sheriff CL Plus	3.76	3.68	42.7	11.6	82.6	0.5
Razor CL Plus	3.73	3.70	48.4	11.4	84.0	0.7
Mace	3.72	3.61	43.3	12.1	82.1	1.0
Zen	3.71	3.76	43.5	11.9	82.7	0.6
Valiant CL Plus	3.71	3.64	45.9	12.2	83.7	0.4
LRPB Nyala	3.70	3.66	33.8	11.5	80.9	1.0
LRPB Havoc	3.68	3.72	48.2	12.2	83.6	0.8
Magenta	3.67	3.53	40.9	12.2	81.8	1.1
LRPB Trojan	3.66	3.61	41.9	11.8	82.9	0.7
Corack	3.66	3.47	52.2	13.3	82.4	0.7
Chief CL Plus	3.63	3.53	49.3	12.7	82.0	1.2
LRPB Cobra	3.60	3.42	41.9	12.8	80.8	0.9
Wedin	3.59	3.57	43.4	11.8	80.0	0.6
Wyalkatchem	3.55	3.60	44.0	12.6	81.6	0.5
Calingiri	3.51	3.43	43.9	12.1	82.5	0.5
LRPB Oryx	3.47	3.23	36.0	12.3	82.3	0.7
Supreme	3.46	3.43	38.2	11.9	82.8	0.8
Yitpi	3.45	3.36	42.9	12.3	81.7	1.1
Tungsten	3.44	3.58	41.8	11.5	69.7	1.4
Emu Rock	3.37	3.48	48.3	12.6	81.6	1.2

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

## **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 Wheat trial was sown on the 18<sup>th</sup> May into moisture with excellent germination and seasonal growth. The trial had an overall site yield of 3.7 t/ha with good protein and 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](http://www.nvtonline.com.au)

## **ACKNOWLEDGEMENTS**

Thanks to property owner Greg Smith and the Facey Group for providing the site to Living Farm for the trial. Participating companies, GRDC and the NVT program coordinators.