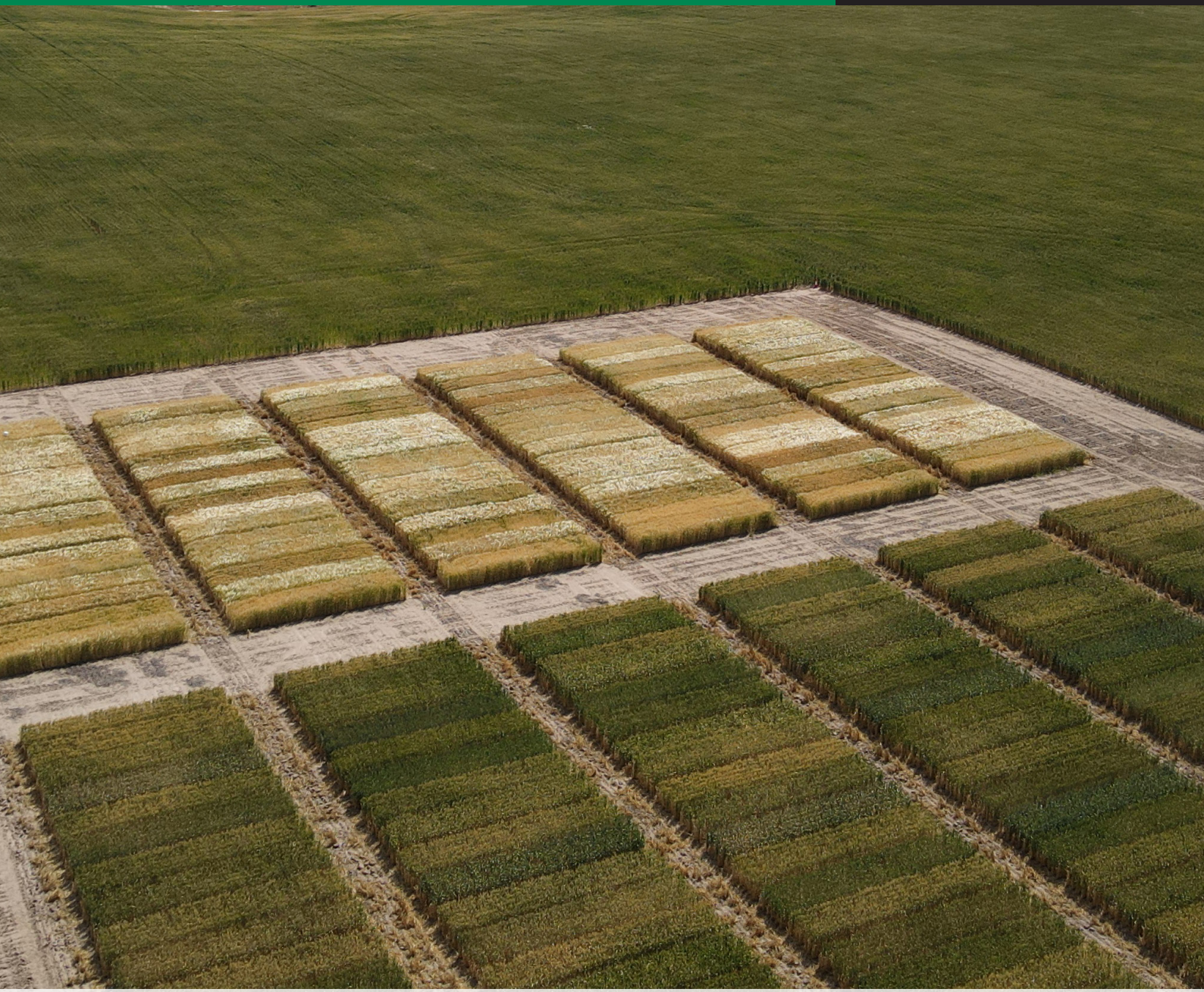
# NVT HARVEST REPORT

GRDC NATIONAL VARIETY TRIALS™

REVISED APRIL 2023



## Kwinana East
## Western Region

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**COVER:** NVT barley and wheat, Lake Grace, WA in 2022.
**PHOTO:** Isabelle Rogers

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## LEGEND: MEAN VARIETY YIELD PERFORMANCE

**LOW** **HIGH**

Long-term mean yield illustrated by colour gradient from low (red) to high (green)

## DISEASE RATING COLOUR RANGE

| VS | SVS | S | MSS | MS | MRMS | MR | RMR | R |
|---|---|---|---|---|---|---|---|---|

Disease severity scale from very susceptible (VS) to resistant (R)

The disease ratings in the report are current at the time of publication.
Regularly visit nvt.grdc.com.au/nvt-disease-ratings to find the latest NVT disease ratings.

Refer to the latest *Crop Sowing Guide* for further information at
grdc.com.au/nvt-crop-sowing-guides

# INTRODUCTION

This ***NVT Harvest Report*** provides information to support growers and advisers with decisions on variety selection for **Kwinana East**. The information has been generated from the Grains Research and Development Corporation's (GRDC) National Variety Trials (NVT) database. This publication provides a summary of the 2022 and long-term yield performance of varieties of crop species suitable for production in **Kwinana East** together with their quality and disease responses.

The NVT program provides growers and advisers with comparative results on yield performance, quality and disease resistance ratings of commercially available grain varieties that is independent, consistent, timely and robust.

Conducted to a set of predetermined protocols, trials are sown and managed to reflect local best practice such as sowing time, fertiliser application, weed management, pest/disease control and fungicide application. The NVT is not designed to grow varieties to their maximum yield potential.

GRDC acknowledges that an ongoing project of this type would not be possible without the cooperation of growers prepared to contribute sites and who often assist with the management of trials on their property.

## Interpreting long-term yield results

A factor analytic (FA) mixed model approach is used in the multi-environment trial (MET) analysis conducted by GRDC, supported by the Statistics for the Australian Grains Industry (SAGI) program.

This approach generates long-term MET values for varieties at an individual trial level.

This format provides more detailed results to better understand a variety's performance over several years at the individual trial/environment level, rather than just a single averaged value.

In this **Kwinana East** Harvest Report, results are presented in year groupings for yield for the past five years and quality for the past two years. Further detailed interrogation of the NVT Online results using the Long Term Yield Reporter will provide more specific performance results on all varieties of each crop species in each NVT location throughout **Kwinana East**.

The results presented in this Harvest Report are based on the default filters in the Long Term Yield Reporter. In some cases, trial results are excluded because they do not meet the default standards for statistical validity. These are listed in the tables as 'Trial results below standard'. Trials below standard can be viewed by reducing the default VAF settings within the Long Term Yield Reporter.

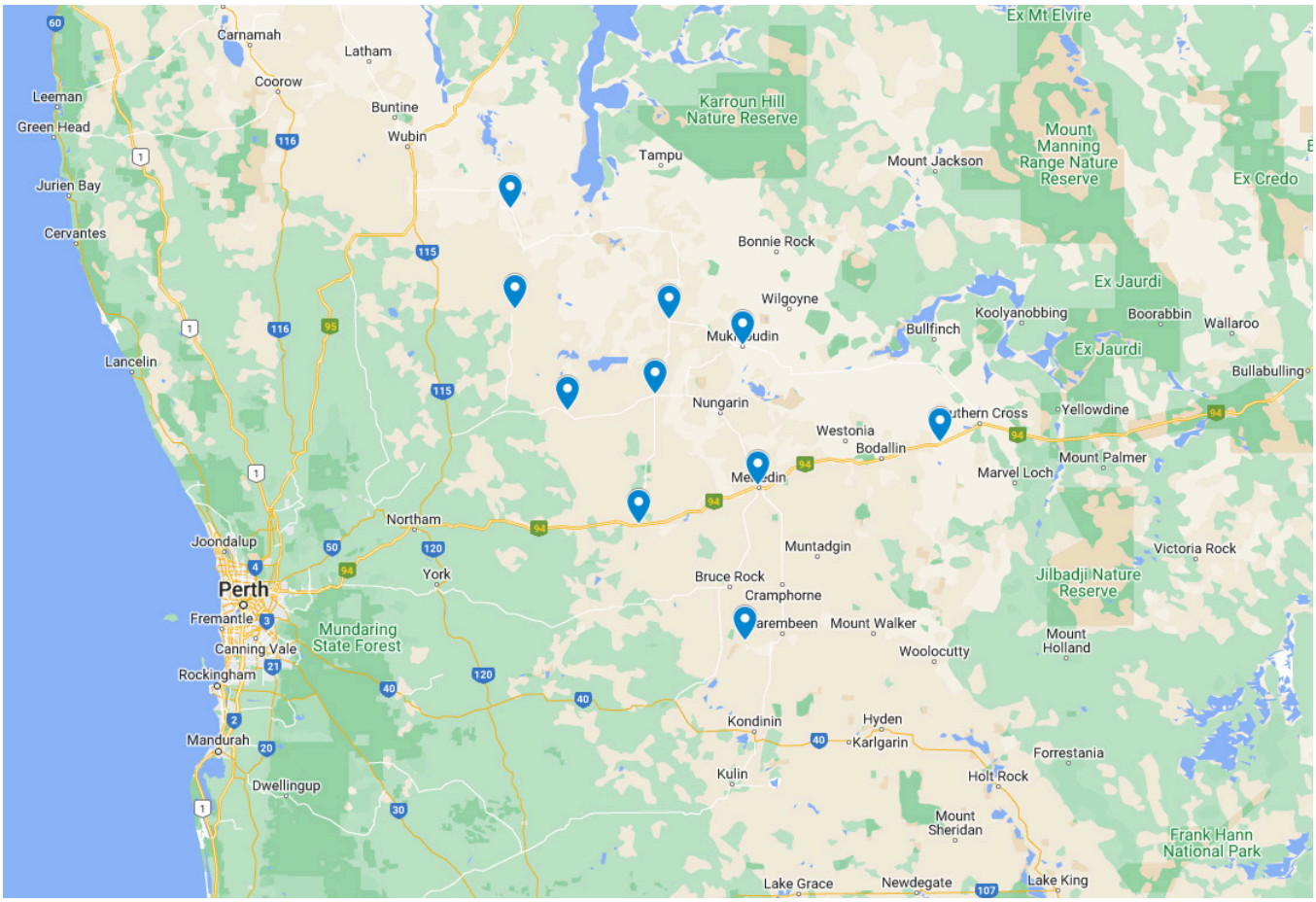
Trials listed as compromised are not suitable for making variety decisions. Results can be found in the Quarantined trial reports.

Refer to the latest ***Crop Sowing Guide*** for further information at **grdc.com.au/nvt-crop-sowing-guides**

# NVT SITE LOCATIONS – Kwinana East

**Figure 1: Locality of NVT trial sites in Kwinana East from 2018 to 2022.**

SOURCE: NVT Online




See all NVT trial locations and view trial results at nvt.grdc.com.au/trial-results.

# WHEAT

## New wheat varieties

The following information is for wheat varieties released in the 12 months to the date when the MET analysis was published on NVT online.

| Variety | Variety owner | Grain classification | End Point Royalty* ($) | Comments supplied by variety owner |
|---|---|---|---|---|
| Brumby(Ф) | InterGrain | Milling | 3.50 | Mid-maturing, with a slightly later time of flowering than Scepter(Ф), although earlier than RockStar(Ф). Well-suited to May sowing. |
| LRPB Anvil(Ф) | LongReach Plant Breeders Pty Ltd | Milling | 4.25 | Clearfield® Plus wheat with two-gene tolerance to label rates of Intervix® herbicide with quick maturity and bold early growth. Fast grain fill with large grain, suited to low to medium-rainfall areas. Bred by Grains Innovation Australia, developed by LongReach Plant Breeders and marketed by Pacific Seeds. |
| Mowhawk(Ф) | LongReach Plant Breeders Pty Ltd | Milling | 4.00 | A quick winter variety with similar growth habit and maturity to Longsword(Ф). Mowhawk(Ф) has broad general adaption and is ideally suited to higher-production areas and early break scenarios. Mowhawk(Ф) is quicker to heading and higher-yielding than the current benchmark winter variety, Illabo(Ф). |
| Stockade(Ф) | LongReach Plant Breeders Pty Ltd | Milling | None provided. | Very slow spring maturity similar to RGT Accroc(Ф). Suitable for high-rainfall zones of south-west Victoria, south-east South Australia and Tasmania as main target area but will have relevance to north-east Victoria and south-east slopes. Growth habit with high production canopy with steady biomass accumulation over season based on its slower maturity. Potential variety replacement for RGT Accroc(Ф) and LRPB Beaufort(Ф) feed wheats. |

* EPR amount is ex-GST, (Ф) denotes Plant Breeder's Rights apply.

Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Wheat variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

**Table 1: Bencubbin main season wheat.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 3.11 | 0.87 | 2.19 | | 4.29 |
| Calibre(Ф) | | | 111 | Compromised trial | 110 |
| Vixen(Ф) | 119 | 134 | 117 | | 98 |
| Sting(Ф) | | 127 | 113 | | 102 |
| Ballista(Ф) | | 114 | | | 112 |
| Devil(Ф) | 110 | 113 | 108 | | 110 |
| Scepter(Ф) | 110 | 115 | 110 | | 106 |
| RockStar(Ф) | 104 | 102 | 105 | | 114 |
| Brumby(Ф) | | | | | 112 |
| LRPB Avenger(Ф) | | 131 | 113 | | 89 |
| Ninja(Ф) | 101 | 99 | 103 | | 111 |
| **IMI-TOLERANT** | | | | | |
| Hammer CL Plus(Ф) | | | 105 | | 98 |
| Razor CL Plus(Ф) | 108 | 118 | 109 | | 94 |
| LRPB Anvil(Ф) | | | 111 | | 82 |
| **Sowing date** | **13 Jun** | **7 Jun** | **14 May** | **14 May** | **6 May** |
| **Rainfall J–M (mm)** | **69** | **24** | **96** | **146** | **97** |
| **Rainfall A–O (mm)** | **191** | **153** | **149** | **225** | **268** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

**Table 2: Cadoux main season wheat.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 4.25 | 2.34 | 4.14 | 2.95 | 3.91 |
| Vixen(Ф) | 108 | 112 | 106 | 112 | 113 |
| Calibre(Ф) | | | 108 | 109 | 109 |
| Devil(Ф) | 109 | 109 | 108 | 109 | 107 |
| Sting(Ф) | | 111 | 106 | 109 | 110 |
| RockStar(Ф) | 109 | 108 | 109 | 109 | 105 |
| Scepter(Ф) | 107 | 109 | 107 | 109 | 108 |
| Ballista(Ф) | | 111 | | 107 | 106 |
| Brumby(Ф) | | | | 108 | 105 |
| LRPB Havoc(Ф) | 103 | 104 | 102 | 107 | 109 |
| Ninja(Ф) | 105 | 105 | 106 | 105 | 103 |
| **IMI-TOLERANT** | | | | | |
| Razor CL Plus(Ф) | 101 | 105 | 101 | 104 | 106 |
| LRPB Anvil(Ф) | | | 97 | 103 | 107 |
| Hammer CL Plus(Ф) | | | 100 | 102 | 103 |
| **Sowing date** | **25 May** | **7 Jun** | **11 May** | **24 May** | **26 May** |
| **Rainfall J–M (mm)** | **55** | **28** | **130** | **109** | **50** |
| **Rainfall A–O (mm)** | **341** | **187** | **153** | **237** | **289** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

**Table 3: Kalannie main season wheat.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 4.25 | | 3.11 | 3.61 | 4.17 |
| RockStar(Ф) | 113 | No trial | 103 | 113 | 108 |
| Calibre(Ф) | | | 106 | 115 | 108 |
| Devil(Ф) | 111 | | 105 | 114 | 107 |
| Scepter(Ф) | 108 | | 106 | 112 | 105 |
| Vixen(Ф) | 105 | | 109 | 114 | 103 |
| Brumby(Ф) | | | | 110 | 107 |
| Ballista(Ф) | | | | 110 | 109 |
| Sting(Ф) | | | 107 | 111 | 104 |
| Ninja(Ф) | 105 | | 103 | 106 | 106 |
| Kinsei(Ф) | 108 | | 100 | 105 | 106 |
| **IMI-TOLERANT** | | | | | |
| Valiant(Ф) CL Plus | | | | 101 | 100 |
| Hammer CL Plus(Ф) | | | 102 | 102 | 101 |
| Razor CL Plus(Ф) | 97 | | 104 | 103 | 99 |
| **Sowing date** | **4 Jun** | | **26 May** | **25 May** | **17 May** |
| **Rainfall J–M (mm)** | **95** | | **108** | **131** | **51** |
| **Rainfall A–O (mm)** | **226** | | **163** | **271** | **269** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

**Table 4: Kellerberrin main season wheat.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 3.98 | 1.51 | 1.93 | 4.05 | 5.14 |
| Vixen(Ф) | 105 | 119 | 124 | 116 | 100 |
| Devil(Ф) | 111 | 108 | 111 | 108 | 108 |
| RockStar(Ф) | 113 | 102 | 106 | 106 | 111 |
| Calibre(Ф) | | | 113 | 106 | 105 |
| Scepter(Ф) | 108 | 109 | 113 | 109 | 105 |
| Brumby(Ф) | | | | 105 | 109 |
| Sting(Ф) | | 116 | 117 | 110 | 100 |
| LRPB Havoc(Ф) | 101 | 110 | 117 | 114 | 97 |
| Ballista(Ф) | | 108 | | 102 | 106 |
| LRPB Avenger(Ф) | | 117 | 118 | | 95 |
| **IMI-TOLERANT** | | | | | |
| LRPB Anvil(Ф) | | | 118 | 113 | 90 |
| Razor CL Plus(Ф) | 98 | 110 | 111 | 107 | 96 |
| Chief CL Plus(Ф) | 101 | 99 | 105 | 107 | 99 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **19 May** | **18 May** |
| **Rainfall J–M (mm)** | **39** | **7** | **64** | **76** | **41** |
| **Rainfall A–O (mm)** | **245** | **216** | **125** | **298** | **338** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 5: Merredin main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 2.00 | 1.24 | 1.92 | | 4.65 |
| Calibre(Ф) | | | 111 | Compromised trial | 109 |
| Vixen(Ф) | 105 | 116 | 129 | | 100 |
| Devil(Ф) | 109 | 115 | 107 | | 107 |
| Ballista(Ф) | | 104 | | | 111 |
| Scepter(Ф) | 107 | 112 | 112 | | 105 |
| RockStar(Ф) | 110 | 113 | 98 | | 109 |
| Sting(Ф) | | 111 | 121 | | 103 |
| Brumby(Ф) | | | | | 109 |
| Ninja(Ф) | 104 | 103 | 101 | | 108 |
| Kinsei(Ф) | 107 | 104 | 91 | | 107 |
| **IMI-TOLERANT** | | | | | |
| Razor CL Plus(Ф) | 98 | 103 | 119 | | 97 |
| Hammer CL Plus(Ф) | | | 110 | | 100 |
| LRPB Anvil(Ф) | | | 121 | | 87 |
| **Sowing date** | **25 May** | **7 Jun** | **13 May** | **12 May** | **12 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **100** | **68** | **81** |
| **Rainfall A–O (mm)** | **230** | **208** | **170** | **188** | **319** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 6: Moorine Rock main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | | 1.64 | 2.22 | | 4.07 |
| Calibre(Ф) | Compromised trial | | 115 | Compromised trial | 108 |
| RockStar(Ф) | | 112 | 108 | | 115 |
| Devil(Ф) | | 117 | 113 | | 110 |
| Scepter(Ф) | | 115 | 114 | | 106 |
| Vixen(Ф) | | 123 | 125 | | 96 |
| Ballista(Ф) | | 114 | | | 108 |
| Brumby(Ф) | | | | | 111 |
| Sting(Ф) | | 119 | 118 | | 99 |
| Catapult(Ф) | | 109 | 100 | | 110 |
| Kinsei(Ф) | | 100 | 99 | | 113 |
| **IMI-TOLERANT** | | | | | |
| Valiant(Ф) CL Plus | | | | | 111 |
| LRPB Anvil(Ф) | | | 119 | | 85 |
| Hammer CL Plus(Ф) | | | 106 | | 96 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **13 May** | **6 May** |
| **Rainfall J–M (mm)** | **90** | **61** | **79** | **63** | **63** |
| **Rainfall A–O (mm)** | **219** | **234** | **161** | **253** | **296** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 7: Mukinbudin main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 1.58 | 0.49 | 0.99 | | 3.23 |
| Vixen(Ф) | 124 | 151 | 126 | Compromised trial | 114 |
| Sting(Ф) | | 146 | 123 | | 111 |
| Calibre(Ф) | | | 121 | | 109 |
| LRPB Avenger(Ф) | | 149 | 122 | | 107 |
| Ballista(Ф) | | 129 | | | 109 |
| Scepter(Ф) | 110 | 122 | 111 | | 109 |
| LRPB Havoc(Ф) | 111 | 118 | 112 | | 108 |
| Devil(Ф) | 108 | 121 | 109 | | 108 |
| Mace(Ф) | 107 | 120 | 109 | | 102 |
| Emu Rock(Ф) | 110 | 117 | 110 | | 100 |
| **IMI-TOLERANT** | | | | | |
| LRPB Anvil(Ф) | | | 122 | | 105 |
| Razor CL Plus(Ф) | 115 | 126 | 115 | | 107 |
| Hammer CL Plus(Ф) | | | 113 | | 104 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **14 May** | **26 May** |
| **Rainfall J–M (mm)** | **63** | **18** | **87** | **131** | **75** |
| **Rainfall A–O (mm)** | **160** | **161** | **118** | **227** | **242** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 8: Narembeen main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 2.69 | 0.98 | 1.66 | 3.08 | 3.47 |
| Vixen(Ф) | 113 | 132 | 125 | 113 | 108 |
| Calibre(Ф) | | | 118 | 107 | 110 |
| Sting(Ф) | | 124 | 119 | 109 | 107 |
| LRPB Avenger(Ф) | | 130 | 120 | | 103 |
| Devil(Ф) | 108 | 112 | 111 | 110 | 109 |
| Scepter(Ф) | 108 | 114 | 112 | 110 | 107 |
| LRPB Havoc(Ф) | 107 | 121 | 114 | 110 | 102 |
| Ballista(Ф) | | 109 | | 105 | 108 |
| RockStar(Ф) | 106 | 102 | 104 | 110 | 109 |
| Brumby(Ф) | | | | 109 | 107 |
| **IMI-TOLERANT** | | | | | |
| LRPB Anvil(Ф) | | | 120 | 105 | 100 |
| Razor CL Plus(Ф) | 105 | 117 | 113 | 104 | 101 |
| Hammer CL Plus(Ф) | | | 109 | 100 | 102 |
| **Sowing date** | **27 May** | **7 Jun** | **25 May** | **13 May** | **27 May** |
| **Rainfall J–M (mm)** | **75** | **26** | **63** | **92** | **76** |
| **Rainfall A–O (mm)** | **265** | **227** | **172** | **293** | **296** |

Special thanks to 2022 trial cooperator, Jake & Trevor Cole and The Colestan Trust.
Learn more via the NVT Long Term Yield Reporter

## Table 9: Trayning main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | | | **2.30** | | **5.04** |
| Vixen(Ф) | No trial | No trial | 123 | Compromised trial | 106 |
| Calibre(Ф) | | | 116 | | 106 |
| Devil(Ф) | | | 113 | | 107 |
| Scepter(Ф) | | | 113 | | 107 |
| Sting(Ф) | | | 117 | | 105 |
| Ballista(Ф) | | | | | 108 |
| Brumby(Ф) | | | | | 109 |
| RockStar(Ф) | | | 108 | | 108 |
| LRPB Havoc(Ф) | | | 115 | | 102 |
| Ninja(Ф) | | | 103 | | 107 |
| **IMI-TOLERANT** | | | | | |
| Razor CL Plus(Ф) | | | 110 | | 102 |
| LRPB Anvil(Ф) | | | 117 | | 95 |
| Hammer CL Plus(Ф) | | | 106 | | 100 |
| **Sowing date** | | | **25 May** | **15 May** | **7 May** |
| **Rainfall J–M (mm)** | | | **64** | **103** | **71** |
| **Rainfall A–O (mm)** | | | **157** | **229** | **273** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 10: Wyalkatchem main season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **4.02** | **1.09** | **1.63** | **3.21** | **3.83** |
| Calibre(Ф) | | | 118 | 112 | 110 |
| Vixen(Ф) | 106 | 132 | 115 | 115 | 109 |
| Devil(Ф) | 109 | 114 | 111 | 110 | 109 |
| Sting(Ф) | | 130 | 114 | 111 | 107 |
| Scepter(Ф) | 107 | 114 | 110 | 109 | 108 |
| RockStar(Ф) | 111 | 102 | 108 | 107 | 109 |
| LRPB Avenger(Ф) | | 131 | 111 | | 104 |
| Ballista(Ф) | | 120 | | 107 | 107 |
| Brumby(Ф) | | | | 105 | 107 |
| LRPB Havoc(Ф) | 102 | 108 | 105 | 108 | 104 |
| **IMI-TOLERANT** | | | | | |
| LRPB Anvil(Ф) | | | 110 | 110 | 102 |
| Razor CL Plus(Ф) | 99 | 115 | 105 | 105 | 102 |
| Hammer CL Plus(Ф) | | | 106 | 104 | 101 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **25 May** | **20 May** |
| **Rainfall J–M (mm)** | **43** | **10** | **98** | **87** | **39** |
| **Rainfall A–O (mm)** | **272** | **250** | **137** | **246** | **277** |

Special thanks to 2022 trial cooperator, T. Reilly & Sons.
Learn more via the NVT Long Term Yield Reporter

## Table 11: Bencubbin early season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **2.98** | | **2.19** | | **3.56** |
| Denison(Ф) | | No trial | 115 | Compromised trial | 107 |
| Cutlass(Ф) | 108 | | 109 | | 109 |
| Stockade(Ф) | | | | | 122 |
| Mowhawk(Ф) | | | | | 114 |
| RockStar(Ф) | | | 117 | | 72 |
| Catapult(Ф) | 115 | | 111 | | 78 |
| Coota(Ф) | | | 109 | | 78 |
| Magenta(Ф) | 107 | | 102 | | 87 |
| Yitpi(Ф) | 105 | | 101 | | 89 |
| Kinsei(Ф) | 114 | | 111 | | 75 |
| **IMI-TOLERANT** | | | | | |
| Valiant(Ф) CL Plus | | | | | 101 |
| Sheriff CL Plus(Ф) | | | 103 | | 59 |
| **Sowing date** | **30 Apr** | | **21 Apr** | **22 Apr** | **20 Apr** |
| **Rainfall J–M (mm)** | **69** | | **96** | **146** | **97** |
| **Rainfall A–O (mm)** | **191** | | **149** | **225** | **268** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 12: Kalannie early season wheat.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | | | **2.71** | **4.14** | **3.81** |
| Stockade(Ф) | Compromised trial | No trial | | | 130 |
| Cutlass(Ф) | | | 109 | 108 | 106 |
| Denison(Ф) | | | 111 | 110 | 99 |
| Illabo(Ф) | | | 98 | 98 | 116 |
| Longsword(Ф) | | | 91 | 105 | 113 |
| LRPB Nighthawk(Ф) | | | 98 | 97 | 110 |
| RockStar(Ф) | | | 112 | 99 | 92 |
| Kinsei(Ф) | | | 102 | 100 | 91 |
| Catapult(Ф) | | | 101 | 101 | 89 |
| Magenta(Ф) | | | 98 | 96 | 89 |
| **IMI-TOLERANT** | | | | | |
| Valiant(Ф) CL Plus | | | | 106 | 103 |
| Sheriff CL Plus(Ф) | | | 91 | 90 | 72 |
| **Sowing date** | **25 May** | | **21 Apr** | **22 Apr** | **14 Apr** |
| **Rainfall J–M (mm)** | **95** | | **108** | **131** | **51** |
| **Rainfall A–O (mm)** | **226** | | **163** | **271** | **269** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

# Wheat variety quality – Kwinana East

Grain quality for individual varieties varies from site to site and from year to year. However, long-term and across-site trends highlight varieties that can consistently achieve high protein percentage, high test weight or low grain screenings under a wider range of environments.

The following figures show the grain quality trends as histograms from 2021 and 2022 NVT averaged for trials in the Kwinana East region. Only the varieties evaluated at every site are included. These are plotted in order of performance, up to a maximum of 20.

## Protein and yield comparisons

**Figure 1: Protein (%) and yield (t/ha) comparisons for main season wheat varieties from five NVT sites in Kwinana East in 2021.**

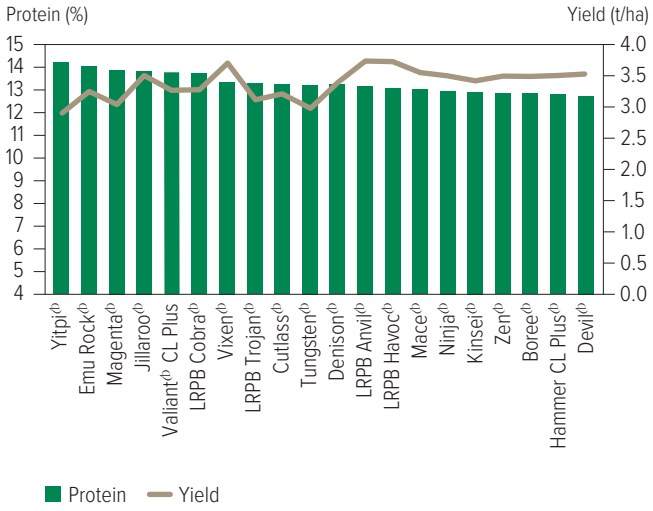



**Figure 2: Protein (%) and yield (t/ha) comparisons for main season wheat varieties from 10 NVT sites in Kwinana East in 2022.**

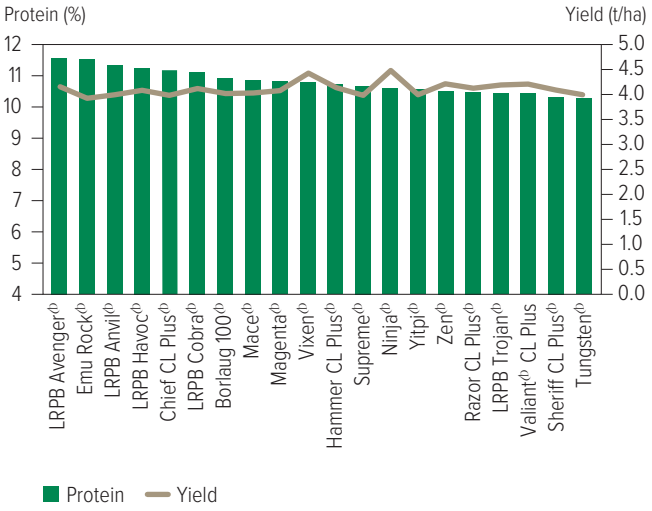



**Figure 3: Protein (%) and yield (t/ha) comparisons for early season wheat varieties from one NVT site in Kwinana East in 2021.**

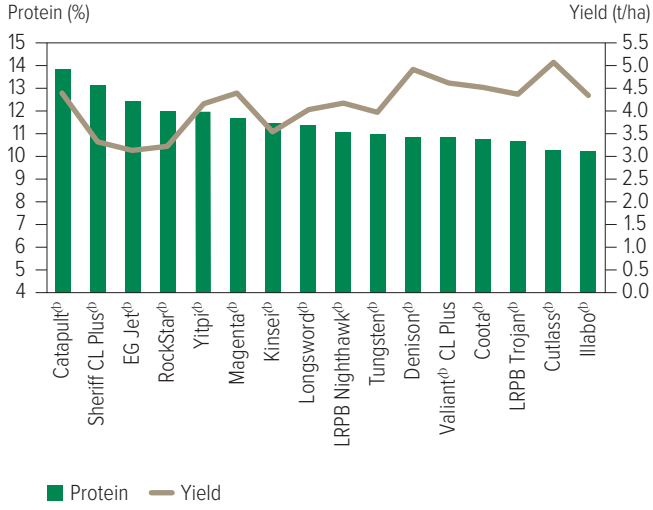
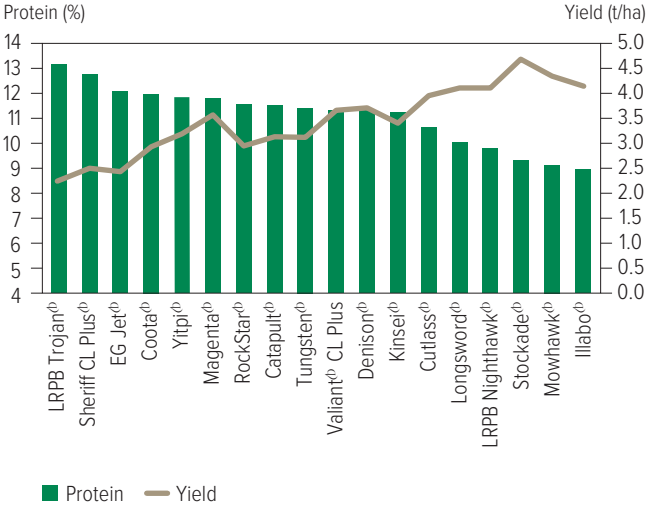



**Figure 4: Protein (%) and yield (t/ha) comparisons for early season wheat varieties from two NVT sites in Kwinana East in 2022.**



## Test weight comparisons

**Figure 5: Test weight (kg/hL) comparisons for main season wheat varieties from five NVT sites in Kwinana East in 2021.**

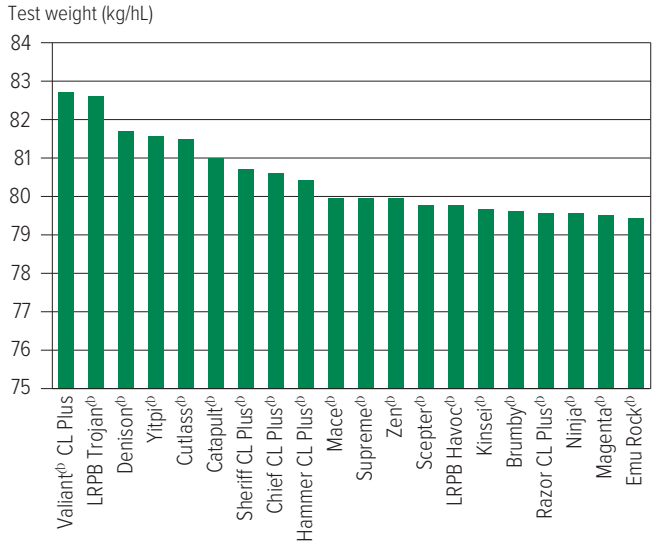



**Figure 6: Test weight (kg/hL) comparisons for main season wheat varieties from 10 NVT sites in Kwinana East in 2022.**

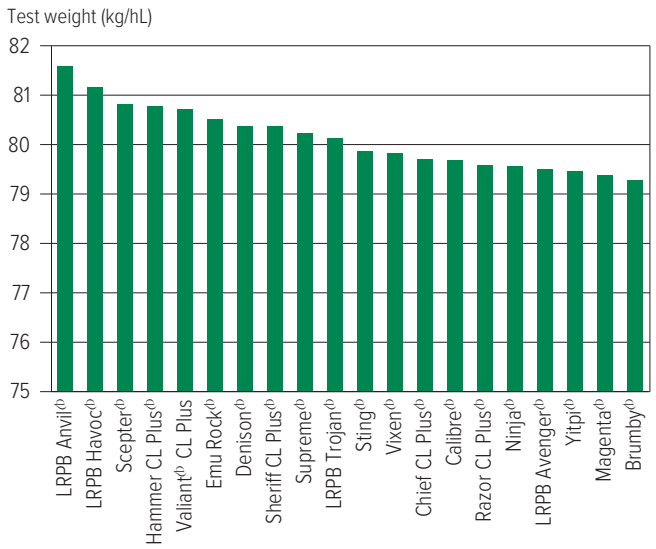



**Figure 7: Test weight (kg/hL) comparisons for early season wheat varieties from one NVT site in Kwinana East in 2021.**

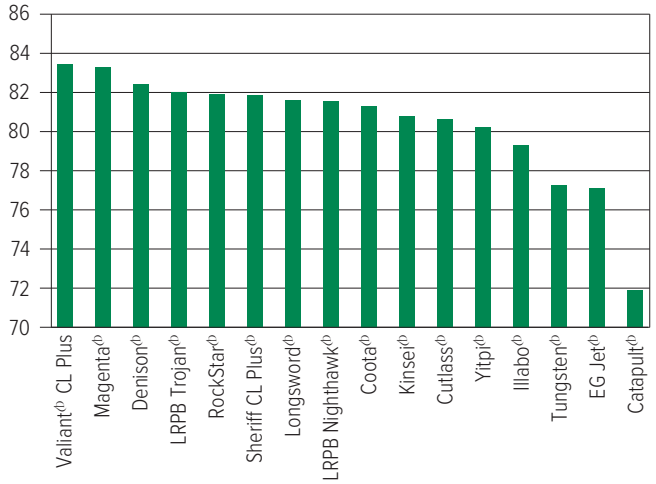
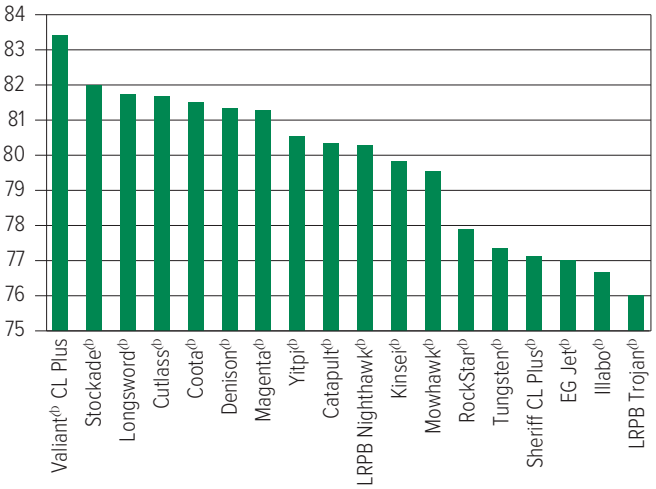



**Figure 8: Test weight (kg/hL) comparisons for early season wheat varieties from two NVT sites in Kwinana East in 2022.**



## Screenings comparisons

**Figure 9: Screenings (<2.0mm) comparisons for main season wheat varieties from five NVT sites in Kwinana East in 2021.**

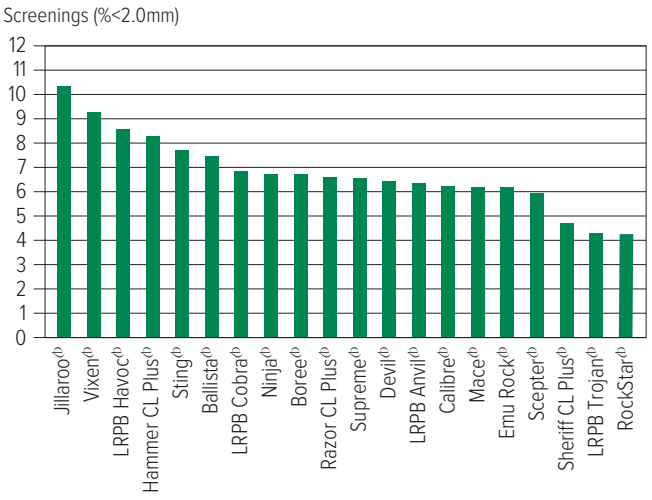



**Figure 10: Screenings (<2.0mm) comparisons for main season wheat varieties from 10 NVT sites in Kwinana East in 2022.**

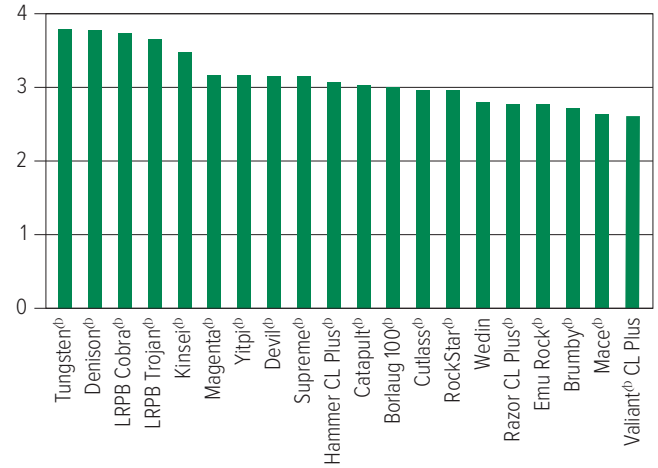



**Figure 11: Screenings (<2.0mm) comparisons for early season wheat varieties from one NVT site in Kwinana East in 2021.**

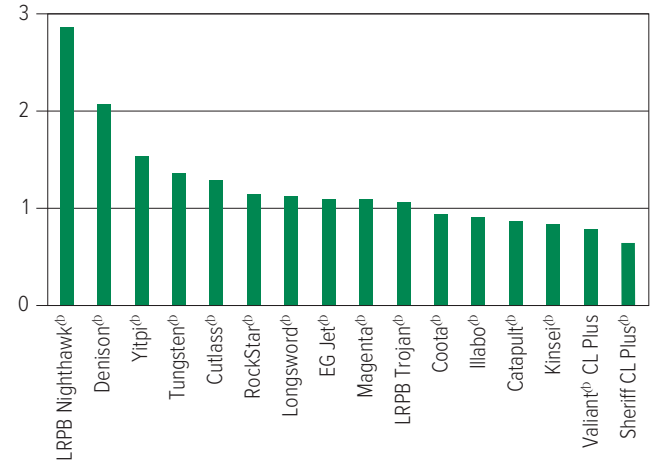
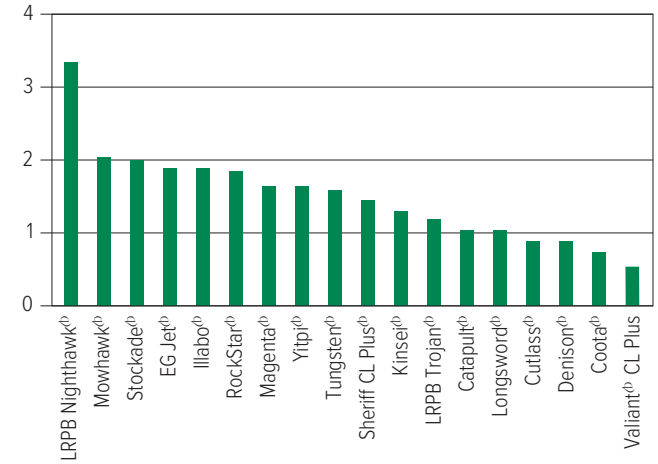



**Figure 12: Screenings (<2.0mm) comparisons for early season wheat varieties from two NVT sites in Kwinana East in 2022.**



# Wheat variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of wheat in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table 18: Wheat disease guide for Western Australia.**

| Variety | Yellow spot | Nodorum blotch (leaf) | Nodorum blotch (glume) | Stem rust | Stripe rust (west coast resistance) | Leaf rust | Powdery mildew | Septoria tritici blotch | RLN resistance (*Pratylenchus neglectus*) | RLN resistance (*Pratylenchus quasitereoides*) | CCN | Crown rot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ballista(b) | MS | MRMS | MS | MR | RMR | S | S | SVS | S | | MRMS | S |
| Borlaug 100(b) | MRMS | MRMS | MRMS | MR | RMR | MR | S | MS | S | | MS | MSS |
| Brumby(b) | MRMS | MS | MRMS | MR | RMR | SVS | R | MSS (P) | MRMS | | MRMS | S |
| Calibre(b) | MRMS | MSS | MSS | MR | RMR | S | MSS | SVS | S | MR (P) | MRMS | S |
| Catapult(b) | MRMS | MRMS | MRMS | MR | RMR | S | S | S | S | MRMS | R | MSS |
| Chief CL Plus(b) | MRMS | MRMS | MS | MR | S | MR | S | MSS | MRMS | MRMS | MS | MSS |
| Coota(b) | MSS | MS | MRMS | RMR | MR | MR | S | MSS | MR | | MR | MSS |
| Cutlass(b) | MSS | MRMS | MRMS | R | RMR | RMR | S | MSS | MSS | MS (P) | MR | S |
| Denison(b) | MRMS | MRMS | MR | MS | MR | S | S | MS | S | MR (P) | MS | MSS |
| Devil(b) | MRMS | MRMS | MS | S | MR | SVS | S | SVS | MSS | MRMS | MSS | MSS |
| DS Bennett(b) | MRMS | MR | MR | MS | RMR | SVS | RMR (SVS) | MR | S | | S | VS |
| DS Pascal(b) | MS | MRMS | MRMS | MSS | RMR | MS | RMR | MS | S | | S | S |
| EG Jet(b) | MRMS | | MSS | S | RMR | S | MS | MSS | S | | MRMS | S |
| EG Titanium | MSS | | MRMS | MS | RMR | MS | MSS | MSS | MSS | | R | MSS |
| EGA Wedgetail(b) | MSS | MRMS | MRMS | MRMS | MS | MSS | MRMS | MRMS | S | | S | S |
| Emu Rock(b) | MS | MRMS | S | MS | MRMS | SVS | MSS | S | MSS | MS (P) | S | MSS |
| Hammer CL Plus(b) | MRMS | MRMS | MRMS | MR | RMR | S | SVS | MSS | MSS | MR (P) | MRMS | MSS |
| Illabo(b) | MS | MR | MR | MRMS | RMR | S | RMR | MR | MSS | RMR | MRMS | S |
| Kinsei(b) | MS | MRMS | MRMS | MSS | MRMS | MSS | S | MSS | S | S | MSS | MSS |
| Longsword(b) | MRMS | MRMS | MRMS | MR | RMR | MR# | MRMS | MRMS | MRMS | | MRMS | MSS |
| LRPB Anvil(b) | MSS | MSS | MSS | MR | RMR | SVS | S | S | MSS | | MRMS | MSS |
| LRPB Avenger(b) | MS | MS | S | MS | MRMS | S | S | MSS | MSS | | MRMS | SVS |
| LRPB Cobra(b) | MRMS | MS | MRMS | MR | MSS | MR# | MSS | S | MSS | MSS (P) | MS | S |
| LRPB Havoc(b) | MRMS | MRMS | MS | S | MR | S | MSS | MRMS | S | MRMS | S | MSS |
| LRPB Nighthawk(b) | MS | MR | MRMS | RMR | RMR | MSS | MSS | MRMS | MSS | MRMS (P) | MS | MSS |
| LRPB Nyala(b) | MS | MR | MSS | SVS | RMR | S | R | SVS | S | | MSS | MSS |
| LRPB Oryx(b) | MSS | MSS | S | MR | RMR | RMR# | RMR | SVS | MSS | MSS (P) | S | MSS |
| LRPB Trojan(b) | MSS | MS | MS | MRMS | MR | MR# | S | S | MSS | MS (P) | MS | MS |
| Mace(b) | MRMS | MS | MS | MRMS | RMR | S | MSS | S | MS | MRMS | MRMS | S |
| Mowhawk(b) | MRMS (P) | | | RMR (P) | RMR (P) | MR (P) | | | | | | |
| Razor CL Plus(b) | MSS | MS | MS | MRMS | RMR | S | MSS | SVS | S | | MR | S |
| RockStar(b) | MRMS | MRMS | MRMS | MRMS | RMR | S | MS | S | MRMS | MS | MSS | S |
| Scepter(b) | MRMS | MSS | MRMS | MRMS | RMR | MSS | S | S | S | MS | MRMS | MSS |
| Severn(b) | MRMS | MR (P) | MR | MS | RMR | MRMS | R | MS (P) | S | | MSS (P) | S |
| Sheriff CL Plus(b) | MRMS | MRMS | MRMS | MS | MS | SVS | SVS | S | MRMS | MRMS (P) | MS | S |
| Sting(b) | MRMS | MS | MS | MRMS | MR | SVS | S | S | MRMS | MS (P) | MS | MSS |
| Stockade(b) | MRMS | MR | MRMS | MS | RMR | MR (P) | S | MS (P) | S | | MRMS | S |
| Valiant(b) CL Plus | MRMS | MRMS | MR | MR | RMR | S | S | MRMS | S | MS (P) | MSS (P) | S |
| Vixen(b) | MRMS | MSS | MSS | MRMS | MRMS | SVS | SVS | MSS | MRMS | MSS | MSS | S |
| Yitpi(b) | SVS | MRMS | MS | S | MRMS | S | MS | MS | MSS | MS | MR | S |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible, (P) = provisional rating, # warning, may be more susceptible to alternate pathotypes, ( ) show outlier.

# BARLEY

## New barley varieties

The following information is for barley varieties released in the 12 months to the date when the MET analysis was published on NVT online.

| Variety | Variety owner | Grain classification# | End point royalty* ($) | Comments supplied by variety owner |
|---|---|---|---|---|
| Combat(Φ) | InterGrain | Feed | 3.50 | Mid-maturity suited to all regions. Semi-prostrate growth habit that will provide more weed competition than Rosalind(Φ). A potential variety replacement for Rosalind(Φ) with a more competitive plant type. |
| Titan AX(Φ) | Australian Grain Technologies | Under malt evaluation | 4.55 | The world's first CoAXium® barley variety. Mid-season maturity, slightly later than Compass(Φ), similar to RGT Planet(Φ). Agronomically similar to Compass(Φ). |
| Zena(Φ) CL | InterGrain | Under malt evaluation | 4.25 | Zena(Φ) CL is an imidazolinone-tolerant barley variety best-suited to medium-high rainfall environments. |

* EPR amount is ex-GST, (Φ) denotes Plant Breeder's Rights apply, # barley malting quality accreditation correct at time of download (10 March 2023).



Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Barley variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

## Table 1: Bencubbin main season barley.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | | | 2.32 | | 5.31 |
| Cyclops(Ф) | No trial | No trial | 105 | Compromised trial | 107 |
| Combat(Ф) | | | | | 106 |
| Leabrook(Ф) | | | 106 | | 104 |
| Laperouse(Ф) | | | 105 | | 104 |
| Beast(Ф) | | | 114 | | 100 |
| Minotaur(Ф) | | | 105 | | 103 |
| Rosalind(Ф) | | | 115 | | 97 |
| Compass(Ф) | | | 109 | | 99 |
| RGT Planet(Ф) | | | 97 | | 104 |
| Fathom(Ф) | | | 104 | | 99 |
| **HERBICIDE TOLERANT (GROUP 1 AND IMIDAZOLINONE)** | | | | | |
| Titan AX(Ф) | | | | | 104 |
| Maximus(Ф) CL | | | 112 | | 98 |
| Zena(Ф) CL | | | | | 102 |
| Spartacus CL(Ф) | | | 109 | | 97 |
| **Sowing date** | | | **14 May** | **14 May** | **6 May** |
| **Rainfall J–M (mm)** | | | **96** | **146** | **97** |
| **Rainfall A–O (mm)** | | | **149** | **225** | **268** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 2: Kalannie main season barley.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 4.58 | | 2.71 | 2.98 | 5.69 |
| Buff(Ф) | 124 | No trial | 116 | 112 | 101 |
| Litmus(Ф) | | | 123 | 105 | 106 |
| Combat(Ф) | | | | 112 | 107 |
| Rosalind(Ф) | 104 | | 108 | 108 | 107 |
| Leabrook(Ф) | 102 | | 100 | 119 | 104 |
| Fathom(Ф) | | | 104 | 111 | 101 |
| Cyclops(Ф) | | | 98 | 112 | 102 |
| Compass(Ф) | 99 | | 101 | 117 | 103 |
| Beast(Ф) | | | 99 | 116 | 104 |
| RGT Planet(Ф) | 99 | | 101 | 102 | 104 |
| **HERBICIDE TOLERANT (GROUP 1 AND IMIDAZOLINONE)** | | | | | |
| Titan AX(Ф) | | | | | 103 |
| Zena(Ф) CL | | | | 101 | 105 |
| Scope CL(Ф) | 104 | | 106 | 98 | 98 |
| Commodus(Ф) CL | | | 98 | 109 | 101 |
| **Sowing date** | **25 May** | | **26 May** | **25 May** | **17 May** |
| **Rainfall J–M (mm)** | **95** | | **108** | **131** | **51** |
| **Rainfall A–O (mm)** | **226** | | **163** | **271** | **269** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 3: Kellerberrin main season barley.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | | | 1.80 | 4.58 | 5.03 |
| Cyclops(Ф) | No trial | No trial | 111 | 116 | 110 |
| Combat(Ф) | | | | 110 | 114 |
| Beast(Ф) | | | 128 | 113 | 104 |
| Laperouse(Ф) | | | 110 | 113 | 105 |
| Leabrook(Ф) | | | 114 | 105 | 109 |
| Rosalind(Ф) | | | 127 | 106 | 103 |
| Minotaur(Ф) | | | 105 | 108 | 104 |
| Compass(Ф) | | | 122 | 102 | 103 |
| Fathom(Ф) | | | 113 | 101 | 102 |
| La Trobe(Ф) | | | 116 | 106 | 96 |
| **HERBICIDE TOLERANT (GROUP 1 AND IMIDAZOLINONE)** | | | | | |
| Maximus(Ф) CL | | | 121 | 117 | 96 |
| Titan AX(Ф) | | | | | 110 |
| Spartacus CL(Ф) | | | 116 | 112 | 93 |
| Commodus(Ф) CL | | | 115 | 102 | 99 |
| **Sowing date** | | | **25 May** | **19 May** | **18 May** |
| **Rainfall J–M (mm)** | | | **64** | **76** | **41** |
| **Rainfall A–O (mm)** | | | **125** | **298** | **338** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 4: Merredin main season barley.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 2.14 | 0.79 | 2.22 | | 5.98 |
| Rosalind(Ф) | 114 | 118 | 122 | Compromised trial | 105 |
| Buff(Ф) | 121 | 149 | 100 | | 104 |
| Combat(Ф) | | | | | 111 |
| Litmus(Ф) | | 148 | 101 | | 96 |
| Beast(Ф) | | 105 | 120 | | 103 |
| Cyclops(Ф) | | | 108 | | 107 |
| Fathom(Ф) | 102 | 119 | 107 | | 100 |
| Laperouse(Ф) | 97 | 99 | 108 | | 104 |
| La Trobe(Ф) | 101 | 107 | 114 | | 99 |
| Minotaur(Ф) | | | 106 | | 105 |
| **HERBICIDE TOLERANT (GROUP 1 AND IMIDAZOLINONE)** | | | | | |
| Maximus(Ф) CL | 105 | 108 | 123 | | 102 |
| Spartacus CL(Ф) | 100 | 102 | 118 | | 98 |
| Titan AX(Ф) | | | | | 104 |
| Zena(Ф) CL | | | | | 104 |
| **Sowing date** | **25 May** | **7 Jun** | **13 May** | **12 May** | **12 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **100** | **68** | **81** |
| **Rainfall A–O (mm)** | **230** | **208** | **170** | **188** | **319** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

# Barley variety quality – Kwinana East

Grain quality for individual varieties varies from site to site and from year to year. However, long-term and across-site trends highlight varieties that can consistently achieve high protein percentage, high test weight or low grain screenings under a wider range of environments.

The following figures show the grain quality trends as histograms from 2021 and 2022 NVT averaged for trials in the Kwinana East region. Only the varieties evaluated at every site are included. These are plotted in order of performance, up to a maximum of 20.

## Protein and yield comparisons

**Figure 1: Protein (%) and yield (t/ha) comparisons for main season barley varieties from two NVT sites in Kwinana East in 2021.**

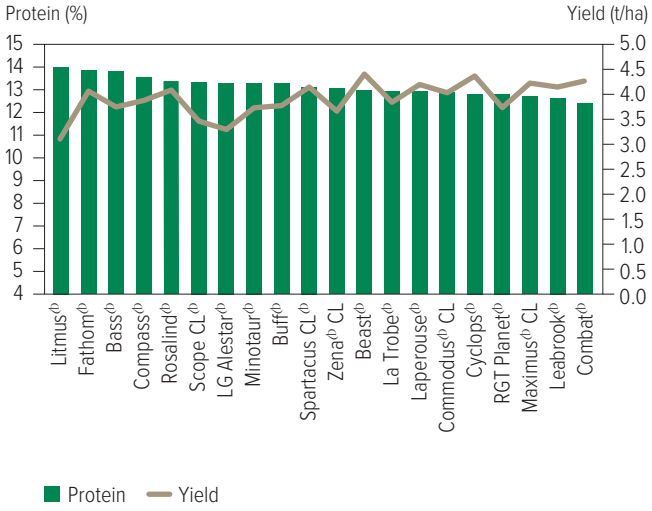
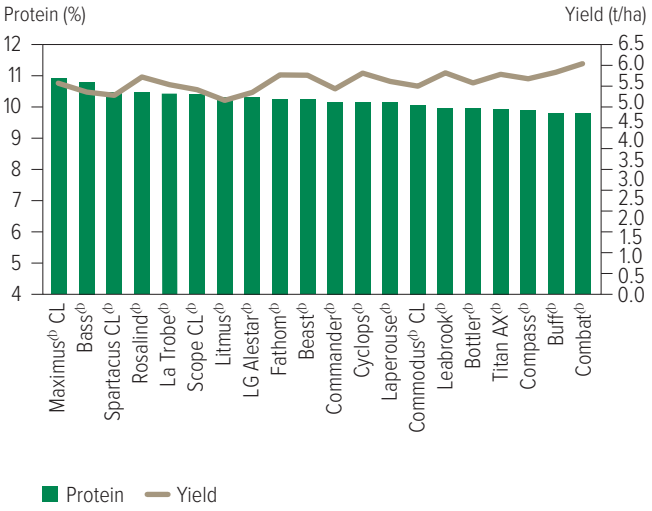



**Figure 2: Protein (%) and yield (t/ha) comparisons for main season barley varieties from four NVT sites in Kwinana East in 2022.**




## Test weight comparisons

**Figure 3: Test weight (kg/hL) comparisons for main season barley varieties from two NVT sites in Kwinana East in 2021.**

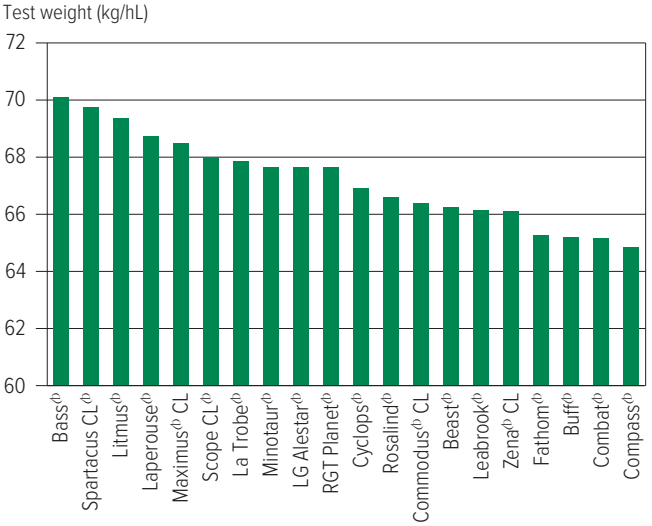
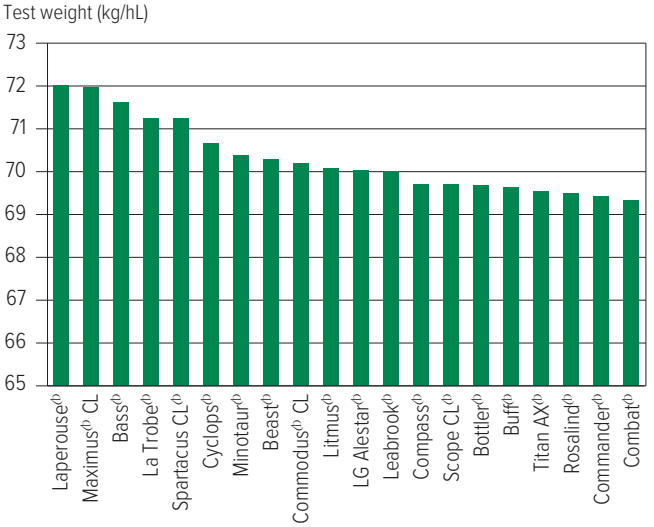



**Figure 4: Test weight (kg/hL) comparisons for main season barley varieties from four NVT sites in Kwinana East in 2022.**



## Screenings comparisons

**Figure 5: Screenings (<2.5mm) comparisons for main season barley varieties from two NVT sites in Kwinana East in 2021.**

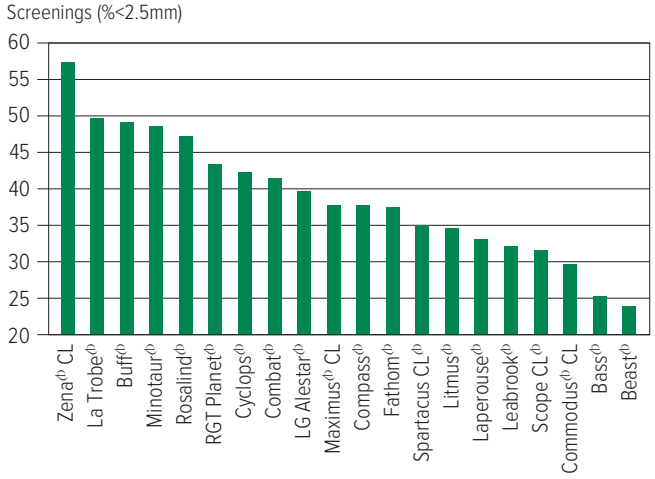
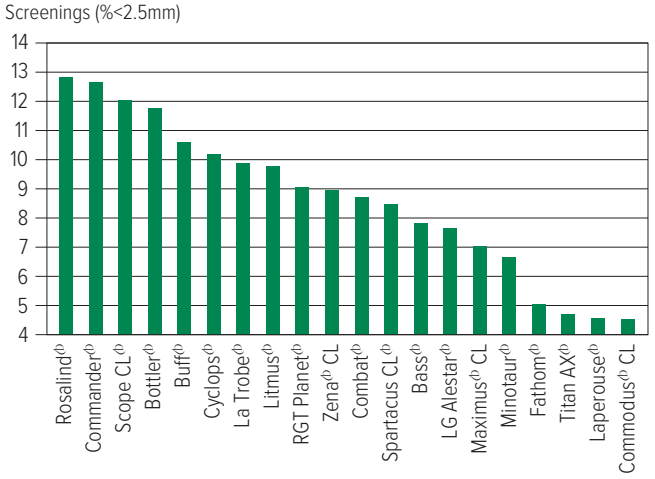



**Figure 6: Screenings (<2.5mm) comparisons for main season barley varieties from four NVT sites in Kwinana East in 2022.**




## Retention comparisons

**Figure 7: Retention (>2.5mm) comparisons for main season barley varieties from two NVT sites in Kwinana East in 2021.**

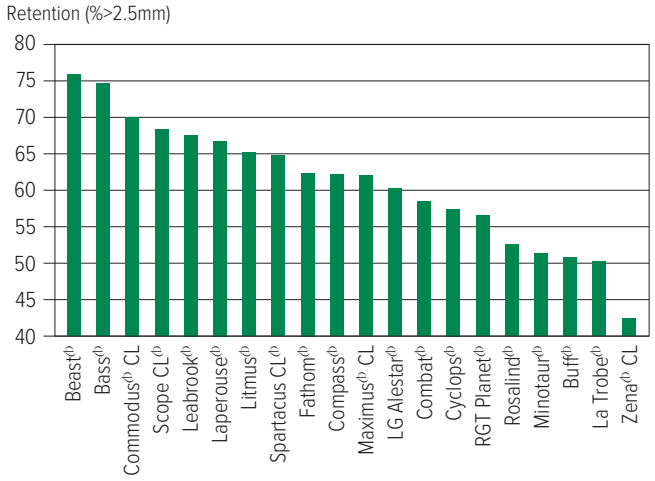
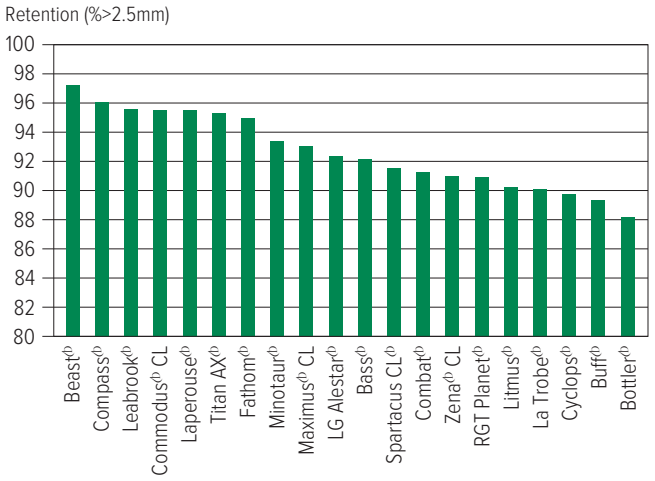



**Figure 8: Retention (>2.5mm) comparisons for main season barley varieties from four NVT sites in Kwinana East in 2022.**



# Barley variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of barley in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table 10: Barley disease guide for Western Australia.**

| Variety | Scald | Net form net blotch | Spot form net blotch | Powdery mildew | Leaf rust | Crown rot | Barley yellow dwarf virus | RLN resistance (*Pratylenchus neglectus*) | RLN resistance (*Pratylenchus quasitereoides*) | CCN | Ramularia |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bass(ф) | MRMS-MS | MRMS-SVS | MSS | MSS | SVS | MSS | MRMS | MS | MSS | S | VS (P) |
| Beast(ф) | S | MRMS-S | MSS | MR | MSS | S | MS | MRMS | MS (P) | MR | SVS (P) |
| Bottler(ф) | S | MR-MS | MSS | RMR | MS | SVS | MRMS | MS | | | SVS (P) |
| Buff(ф) | MRMS-MS | MR-MSS | MSS | S | S | S | MRMS-MS | MRMS | S | | SVS (P) |
| Combat(ф) | S | MRMS-S | MRMS | R | MS | S (P) | MRMS | MR | | MRMS | SVS (P) |
| Commander(ф) | MS-S | MRMS-S | MSS | MR | MSS | S | MRMS-MS | MRMS | | R | SVS (P) |
| Commodus(ф) CL | MS | MRMS-S | MSS | R-MRMS | S | S (P) | MRMS | MRMS | MS (P) | R | SVS (P) |
| Compass(ф) | MS | MR-S | MSS | R-MRMS | S | S | MS | MRMS | S | R | SVS (P) |
| Cyclops(ф) | MRMS | MR-S | S | MR | S | S (P) | S | MRMS | MSS (P) | S | SVS (P) |
| Fairview(ф) | S | MRMS-VS | MSS | R | S | MSS | MRMS | MR | | | SVS (P) |
| Fandaga(ф) | VS | R-MSS | S | RMR | MSS | MSS (P) | MS | MR | | R | VS (P) |
| Fathom(ф) | MR | MS-SVS | MR | MR-MRMS | MS | SVS | MRMS | MRMS | MSS | R | SVS (P) |
| Flinders(ф) | S | MRMS-S | MSS | RMR | MS | MSS | MRMS | MRMS | MSS (P) | S | SVS (P) |
| La Trobe(ф) | RMR | MRMS-S | MSS | S | S | S | MS-S | MRMS | S | R | SVS (P) |
| Laperouse(ф) | S | MR-S | MS | R-MR | MSS | S | MRMS-MS | MR | MS (P) | S | VS (P) |
| Leabrook(ф) | MS | MRMS-S | MSS | R-MR | MSS | S | MS-MSS | MRMS | MS | RMR | VS (P) |
| LG Alestar(ф) | S | MRMS-S | S | R | MS | S | MRMS-MS | MR | | R^ (P) | SVS (P) |
| Litmus(ф) | S | MS-SVS | MSS | MR | S | S | S | MS | MSS (P) | MS | VS (P) |
| Maximus(ф) CL | R | MR-S | MSS | MR | MSS | S | MRMS | MRMS | S | R | VS (P) |
| Minotaur(ф) | VS | MRMS-MS | S | S | S | MS | MSS | MRMS | MS (P) | R | SVS (P) |
| RGT Planet(ф) | RMR | MRMS-SVS | S | R | MRMS-MS | MSS | MRMS-MS | MRMS | MS | R (P) | VS (P) |
| Rosalind(ф) | MSS | MR-S | MSS | MSS | MR | MSS | MRMS-MS | MRMS | MSS | R | VS (P) |
| Scope CL(ф) | MS | MR-MSS | MSS | MR | MSS | S | MRMS | MRMS | MRMS | S | SVS (P) |
| Spartacus CL(ф) | RMR | MRMS-S | SVS | MSS | MSS | S | MSS | MRMS | MSS | R | VS (P) |
| Titan AX(ф) | S | MR-MSS | MS | RMR | S | MSS (P) | MS | R | | MR (P) | VS (P) |
| Zena(ф) CL | MR | MRMS-SVS | SVS | R | MS | MSS (P) | MRMS-MS | MRMS | | R | VS (P) |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible, (P) = provisional rating, - hyphen indicates a range, ^ line contains a few susceptible off types.

# OAT

## New oat varieties

The following information is for oat varieties released in the 12 months to the date when the MET analysis was published on NVT online.

| Variety | Variety owner | Grain classification | End point royalty* ($) | Comments supplied by variety owner |
|---|---|---|---|---|
| Koala$^{\Phi}$ | National Oat Breeding Program | Grain | None provided. | High-yielding, tall dwarf variety with similar height to Bannister$^{\Phi}$ and taller than Mitika$^{\Phi}$, Bilby$^{\Phi}$ or Kowari$^{\Phi}$. Koala$^{\Phi}$ has a mid-season maturity that can be seven days later to head compared with Bannister$^{\Phi}$ and Williams$^{\Phi}$. Early vigour is similar to Bannister$^{\Phi}$and slightly slower than Bilby$^{\Phi}$ and Yallara$^{\Phi}$. Commercialised by Seednet. |

* EPR amount is ex-GST, $^{\Phi}$ denotes Plant Breeder's Rights apply.

Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Oat variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

**Table 1: Merredin oat.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **2.11** | **1.11** | **1.30** | **3.63** | **4.62** |
| Wandering | 111 | 113 | 101 | 98 | 107 |
| Bannister(Φ) | 105 | 106 | 83 | 107 | 109 |
| Bilby(Φ) | 105 | 102 | 123 | 97 | 105 |
| Koala(Φ) | 95 | 96 | 35 | 114 | 110 |
| Kowari(Φ) | 99 | 97 | 123 | 94 | 98 |
| Williams(Φ) | 109 | 117 | 80 | 97 | 97 |
| Kojonup(Φ) | 83 | 73 | 56 | 91 | 103 |
| Durack(Φ) | 90 | 96 | 105 | 87 | 75 |
| Yallara(Φ) | 89 | 104 | 62 | 94 | 66 |
| Carrolup | 90 | 96 | 69 | 82 | 74 |
| **Sowing date** | **25 May** | **7 Jun** | **13 May** | **12 May** | **12 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **100** | **68** | **81** |
| **Rainfall A–O (mm)** | **230** | **208** | **170** | **188** | **319** |

Special thanks to 2022 trial cooperator – permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

# Oat variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of oat in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table : Oat disease guide for Western Australia.**

| Variety | Septoria blotch | Leaf rust (crown rust) | Stem rust | Barley yellow dwarf virus (BYDV) | RLN resistance (*Pratylenchus neglectus*) | CCN |
|---|---|---|---|---|---|---|
| Bannister(b) | MSS | MR/MRMS | MS | MS | MS | MR |
| Bilby(b) | S | MRMS | SVS | S | S | S |
| Carrolup | MSS | VS | S | SVS | MRMS | VS |
| Durack(b) | S | MRMS | SVS | S | MS | MRMS |
| Echidna | SVS | SVS | S | MSS | MSS | MS |
| Koala(b) | MSS | MR | MRMS | MSS | MS | R |
| Kojonup(b) | MSS | SVS | MSS | MS | MSS | VS |
| Koorabup(b) | MRMS# | MRMS | MSS | MSS | MSS | MRMS |
| Kowari(b) | S | MR/MRMS | S | S | MSS | S |
| Mitika(b) | SVS | MRMS | S | SVS | S | VS |
| Mulgara(b) | S/MRMS | MR | MR | MS | | R |
| Possum | S | MR/MS | S | S | MS | MSS |
| Tungoo(b) | MRMS# | RMR | MS | MSS | MSS | MR |
| Wandering | MSS | VS | SVS | S | MSS | VS |
| Williams(b) | MSS | MR | MSS | MSS | MRMS | S |
| Wintaroo(b) | MSS | S | MS | MS | MSS | R |
| Yallara(b) | MSS | MR | MSS | MSS | MR | R |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible,
/ indicates pathotype differences, # warning, may be more susceptible to alternate pathotypes.

# CANOLA

## New canola varieties

The following information is for canola varieties released in the 12 months to the date when the MET analysis was published on NVT online.

| Variety | Variety owner | End point royalty* ($) | Comments supplied by variety owner |
|---|---|---|---|
| Bandit TT$^{\phi}$ | Australian Grain Technologies | 10.00 | Triazine-tolerant, open-pollinated variety suitable to low rainfall environments. Very quick to flower. |
| HyTTec® Velocity | Nuseed Pty Ltd | 5.00 | An early maturing variety that exhibits impressive early vigour, with a compact plant height and improved pod shatter tolerance built in to improve harvesting. |
| InVigor® T 4511 | BASF Australia | - | InVigor® T 4511 is an early-mid triazine-tolerant hybrid of medium height. With excellent early vigour InVigor® T 4511 is ideally suited to early and mid-season growing regions. With higher seedling vigour, higher oil and better blackleg tolerance InVigor® T 4511 is a replacement for InVigor® T 3510 and InVigor® T 4510. |
| Nuseed® Hunter TF | Nuseed Pty Ltd | - | An early-mid maturity TruFlex® hybrid canola with adaptability from low to high-rainfall regions. It has improved pod shatter tolerance with a compact plant height, reducing head loss, and is suitable for medium to quick-growing regions. |
| Renegade TT$^{\phi}$ | Australian Grain Technologies | 10.00 | Triazine-tolerant, open-pollinated variety. Quick to flower with best performance under medium yield potential conditions. |

* EPR amount is ex-GST, $^{\phi}$ denotes Plant Breeder's Rights apply.



Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Canola variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

## Table 1: Bencubbin low-med rainfall GLY.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | | | **1.78** | **2.19** | **3.05** |
| Nuseed® Emu TF | No trial | No trial | 116 | 119 | 108 |
| Nuseed® Hunter TF | | | | 112 | 111 |
| Pioneer® 44Y27 RR | | | 109 | 109 | 108 |
| InVigor® R 4022P | | | 97 | 104 | 103 |
| Pioneer® 44Y30 RR | | | | 101 | 102 |
| Hyola® Battalion XC | | | 100 | 104 | 99 |
| InVigor® R 4520P | | | 92 | 99 | 104 |
| Hyola® Garrison XC | | | 94 | | 95 |
| DG Lofty TF | | | | 101 | 95 |
| Hyola® 410XX | | | 97 | 93 | 93 |
| **Sowing date** | | | **8 May** | **4 May** | **20 Apr** |
| **Rainfall J–M (mm)** | | | **96** | **140** | **102** |
| **Rainfall A–O (mm)** | | | **149** | **230** | **284** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 2: Kellerberrin low-med rainfall GLY.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.66** | | **1.45** | **2.47** | **2.39** |
| Nuseed® Emu TF | | Compromised trial | 128 | 111 | 115 |
| Nuseed® Hunter TF | | | | 111 | 116 |
| Pioneer® 44Y27 RR | 109 | | 117 | 108 | 110 |
| Hyola® Battalion XC | | | 92 | 100 | 102 |
| InVigor® R 4022P | | | 92 | 101 | 106 |
| Pioneer® 44Y30 RR | | | | 102 | 104 |
| InVigor® R 4520P | | | 89 | 100 | 104 |
| Hyola® 410XX | | | 92 | 94 | 90 |
| Hyola® Garrison XC | | | 80 | | 95 |
| DG Lofty TF | | | | 95 | 100 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **10 May** | **12 May** |
| **Rainfall J–M (mm)** | **39** | **7** | **64** | **79** | **41** |
| **Rainfall A–O (mm)** | **245** | **216** | **157** | **311** | **338** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 3: Merredin low-med rainfall GLY.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.92** | **0.63** | **1.03** | **1.34** | **2.47** |
| Nuseed® Emu TF | | | 134 | 117 | 117 |
| Nuseed® Hunter TF | | | | | 112 |
| Pioneer® 44Y27 RR | 104 | 105 | 112 | 109 | 108 |
| InVigor® R 4022P | | 102 | 94 | 110 | 105 |
| Hyola® Battalion XC | | | 101 | 101 | 104 |
| Pioneer® 44Y30 RR | | | | 96 | 103 |
| InVigor® R 4520P | | 98 | 83 | 110 | 101 |
| DG Lofty TF | | | | 103 | 103 |
| Hyola® Garrison XC | | 98 | 88 | | 97 |
| Hyola® 410XX | | 96 | 97 | 88 | 93 |
| **Sowing date** | **25 May** | **7 Jun** | **6 May** | **8 May** | **4 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **79** | **82** | **84** |
| **Rainfall A–O (mm)** | **230** | **208** | **153** | **245** | **320** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 4: Merredin low-med rainfall IMI.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.90** | **0.62** | **1.11** | **1.34** | **2.78** |
| Pioneer® 44Y90 CL | 103 | 101 | 95 | | |
| Pioneer® 44Y94 CL | | | | 101 | 100 |
| Hyola® Equinox CL | | | | | 101 |
| VICTORY® V7002CL | 97 | 102 | | | |
| Pioneer® 43Y92 CL | 101 | 98 | 92 | 94 | 98 |
| Hyola® Solstice CL | | | | 86 | |
| Hyola® 575CL | 97 | 92 | | | |
| **Sowing date** | **25 May** | **7 Jun** | **6 May** | **8 May** | **4 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **79** | **82** | **84** |
| **Rainfall A–O (mm)** | **230** | **208** | **153** | **245** | **320** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 5: Bencubbin low-med rainfall TT.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | | | **1.67** | **1.96** | **2.68** |
| HyTTec® Trident | No trial | No trial | 119 | 123 | 118 |
| HyTTec® Velocity | | | | | 116 |
| InVigor® T 4510 | | | 107 | 113 | 111 |
| HyTTec® Trophy | | | | | 109 |
| InVigor® T 4511 | | | | 109 | 106 |
| SF Spark TT | | | 104 | 107 | 104 |
| InVigor® LT 4530P | | | 99 | 106 | 107 |
| Bandit TT(ϕ) | | | | 107 | 102 |
| Hyola® Blazer TT | | | 100 | | 105 |
| Hyola® Enforcer CT | | | 97 | | 99 |
| **Sowing date** | | | **8 May** | **4 May** | **20 Apr** |
| **Rainfall J–M (mm)** | | | **96** | **140** | **102** |
| **Rainfall A–O (mm)** | | | **149** | **230** | **284** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 6: Kellerberrin low-med rainfall TT.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.45** | | **1.06** | **2.01** | **1.97** |
| HyTTec® Trident | 124 | Trial failed | 127 | 122 | 131 |
| HyTTec® Velocity | | | | | 126 |
| InVigor® T 4510 | 108 | | 109 | 112 | 118 |
| HyTTec® Trophy | 107 | | | | 115 |
| SF Spark TT | | | 109 | 105 | 107 |
| InVigor® T 4511 | | | | 107 | 113 |
| Bandit TT(ϕ) | | | | 103 | 106 |
| InVigor® LT 4530P | | | 95 | 105 | 111 |
| Hyola® Blazer TT | | | 97 | | 104 |
| Renegade TT(ϕ) | | | | | 91 |
| **Sowing date** | **25 May** | **7 Jun** | **25 May** | **10 May** | **12 May** |
| **Rainfall J–M (mm)** | **39** | **7** | **64** | **79** | **41** |
| **Rainfall A–O (mm)** | **245** | **216** | **157** | **311** | **338** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

## Table 7: Merredin low-med rainfall TT.

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.81** | **0.63** | **1.05** | **1.52** | **2.41** |
| HyTTec® Trident | 119 | 113 | 116 | 112 | 122 |
| HyTTec® Velocity | | | 123 | | 119 |
| InVigor® T 4510 | 109 | 107 | 104 | 111 | 113 |
| HyTTec® Trophy | 111 | 104 | | | 109 |
| InVigor® T 4511 | | | | 104 | 110 |
| SF Spark TT | | 104 | 108 | 106 | 106 |
| InVigor® LT 4530P | | | 93 | 109 | 107 |
| Bandit TT(ϕ) | | | | 105 | 106 |
| Hyola® Enforcer CT | | 100 | 88 | | 102 |
| Hyola® Blazer TT | | | 87 | | 99 |
| **Sowing date** | **25 May** | **7 Jun** | **6 May** | **8 May** | **4 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **79** | **82** | **84** |
| **Rainfall A–O (mm)** | **230** | **208** | **153** | **245** | **320** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

# Australian canola variety disease ratings

The following table contains varietal ratings for blackleg disease of canola.
**These ratings are updated twice a year by crop pathologists and were released in autumn 2023.**
Varieties are listed in alphabetical order and disease ratings are colour-coded to match resistance and susceptibility ratings.

**Table 8: Canola disease guide – autumn 2023 ratings.**

| Variety | 2023 autumn blackleg rating | | | Type |
|---|---|---|---|---|
| | Bare | Fluopyram (e.g. ILeVO®) | Pydiflumetofen (e.g. Saltro®) | |
| CONVENTIONAL VARIETIES | | | | |
| Nuseed® Quartz | R | | | Hybrid |
| Nuseed® Diamond | RMR | R | R | Hybrid |
| Outlaw(Φ) | RMR | R | R | Open pollinated |
| TRIAZINE-TOLERANT VARIETIES | | | | |
| HyTTec® Trident | R | | | Hybrid |
| HyTTec® Trifecta | R | | | Hybrid |
| HyTTec® Trophy | R | R | R | Hybrid |
| Hyola® Blazer TT | R | | | Hybrid |
| DG BIDGEE TT(Φ) | R | R | R | Open pollinated |
| InVigor® T 4511 | R | R | | Hybrid |
| DG MURRAY TT(Φ) | R | | | Open pollinated |
| DG Torrens TT(Φ) | R | | R | Open pollinated |
| *Monola*® H421TT | RMR | | | High stability oil, hybrid |
| *Monola*® 420TT | RMR | | | High stability oil, open pollinated |
| ATR-Bluefin(Φ) | RMR | | | Open pollinated |
| InVigor® T 4510 | MR | R | R | Hybrid |
| SF Spark TT | MR | R | R | Hybrid |
| HyTTec® Velocity | MR | | | Hybrid |
| Renegade TT(Φ) | MR | R | R | Open pollinated |
| *Monola*® 422TT | MR | | | High stability oil, open pollinated |
| ATR-Stingray(Φ) | MRMS | R | R | Open pollinated |
| RGT Baseline™ TT | MRMS | R | R | Hybrid |
| ATR-Swordfish(Φ) | MRMS | | | Open pollinated |
| SF Dynatron™ TT | MRMS | R | R | Hybrid |
| InVigor® T 6010 | MRMS | R | R | Hybrid |
| RGT Capacity™ TT | MRMS | R | R | Hybrid |
| Bandit TT(Φ) | MRMS | R | R | Open pollinated |
| AFP Cutubury(Φ) | MS | RMR | RMR | Open pollinated |
| ATR-Bonito(Φ) | MS | RMR | R | Open pollinated |
| IMIDAZOLINONE-TOLERANT VARIETIES | | | | |
| Hyola® Feast CL | R | | | Winter, hybrid, Clearfield® |
| RGT Nizza CL | R | | | Winter, hybrid, Clearfield® |
| Hyola® Solstice CL | R | | | Hybrid, Clearfield® |
| Captain CL | R | | | Winter, hybrid, Clearfield® |
| Hyola® Equinox CL | R | | | Hybrid, Clearfield® |
| Pioneer® 45Y93 CL | R | | R | Hybrid, Clearfield® |
| RGT Clavier™ CL | R | | | Winter, hybrid, Clearfield® |
| Hyola® 970CL | R | | | Winter, hybrid, Clearfield® |
| Phoenix CL | R | | | Winter, hybrid, Clearfield® |
| Nuseed® Ceres IMI | R | | | Hybrid |
| VICTORY® V7002CL | R | | | High stability oil, hybrid, Clearfield® |

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible.
Please check updated ratings using the Blackleg Management Guide or the NVT Disease Ratings.

## Table 8: Canola disease guide – autumn 2023 ratings (continued).

| Variety | 2023 autumn blackleg rating | | | Type |
|---|---|---|---|---|
| | Bare | Fluopyram (e.g. ILeVO®) | Pydiflumetofen (e.g. Saltro®) | |
| Pioneer® 43Y92 CL | R | | R | Hybrid, Clearfield® |
| Pioneer® 45Y95 CL | R | | R | Hybrid, Clearfield® |
| Pioneer® 44Y94 CL | R | | R | Hybrid, Clearfield® |
| VICTORY® V75-03CL | RMR | R | | High stability oil, hybrid, Clearfield® |
| IMIDAZOLINONE AND TRIAZINE-TOLERANT VARIETIES | | | | |
| Hyola® Enforcer CT | R | | | Hybrid, Clearfield®, Triazine |
| Pioneer® PY520 TC | RMR | R | R | Hybrid, Clearfield®, Triazine |
| GLYPHOSATE-TOLERANT VARIETIES | | | | |
| Nuseed® Raptor TF | R | | | Hybrid, TruFlex® |
| Nuseed® Eagle TF | R | | R | Hybrid, TruFlex® |
| DG Hotham TF | R | | R | Hybrid, TruFlex® |
| VICTORY® V55-04TF | R | R | | High stability oil, hybrid, TruFlex® |
| VICTORY® V5003RR | R | R | | High stability oil, hybrid, Roundup Ready® |
| DG Lofty TF | R | | R | Hybrid, TruFlex® |
| Pioneer® 45Y28RR | RMR | | R | Hybrid, Roundup Ready® |
| Nuseed® Hunter TF | RMR | | R | Hybrid, TruFlex® |
| Pioneer® 44Y27 RR | RMR | R | R | Hybrid, Roundup Ready® |
| InVigor® LR 4540P | RMR | R | | Hybrid, LibertyLink®, TruFlex® |
| Pioneer® 44Y30 RR | RMR | | R | Hybrid, Roundup Ready® |
| Nuseed® Emu TF | MR | | R | Hybrid, TruFlex® |
| Hyola® 410XX | MR | | | Hybrid, TruFlex® |
| DG Bindo TF | MR | | | Hybrid, TruFlex® |
| InVigor® R 4022P | MR | R | | Hybrid, TruFlex® |
| InVigor® R 4520P | MRMS | R | | Hybrid, TruFlex® |
| GLYPHOSATE AND IMIDAZOLINONE-TOLERANT VARIETIES | | | | |
| Hyola® Regiment XC | R | | | Hybrid, TruFlex®, Clearfield® |
| Hyola® Battalion XC | R | | | Hybrid, TruFlex®, Clearfield® |
| Hyola® Garrison XC | R | | | Hybrid, TruFlex®, Clearfield® |
| GLUFOSINATE AND TRIAZINE-TOLERANT VARIETIES | | | | |
| InVigor® LT 4530P | RMR | R | | Hybrid, LibertyLink®, Triazine |

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible.
Please check updated ratings using the Blackleg Management Guide or the NVT Disease Ratings.

# CHICKPEA

## Chickpea variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

**Table 1: Merredin desi chickpea.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Mean yield (t/ha) | 1.80 | 0.91 | 1.30 | 0.67 | 0.65 |
| CBA Captain[Φ] | 102 | 107 | 118 | 107 | 110 |
| Ambar[Φ] | 97 | | | | |
| PBA Striker[Φ] | 105 | 107 | 103 | 99 | 103 |
| PBA Slasher[Φ] | 102 | 107 | 103 | 101 | 100 |
| Neelam[Φ] | 102 | 98 | 103 | 102 | 106 |
| Genesis™ 079 | 102 | | | | |
| PBA Maiden[Φ] | 108 | 108 | 90 | 84 | 95 |
| Genesis™ 836 | 97 | 91 | 99 | 103 | 102 |
| PBA Seamer[Φ] | | | | | 98 |
| Genesis™ 090 | 95 | 55 | 68 | 97 | 103 |
| **Sowing date** | **25 May** | **7 Jun** | **18 May** | **31 May** | **25 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **90** | **65** | **65** |
| **Rainfall A–O (mm)** | **230** | **208** | **193** | **251** | **304** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Chickpea variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of chickpea in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table 2: Chickpea disease guide for Western Australia.**

| Variety | Ascochyta blight (pathogen group 2 – north) | Phytophthora root rot | RLN resistance (*Pratylenchus neglectus*) | RLN tolerance (*Pratylenchus neglectus*) |
|---|---|---|---|---|
| **DESI** | | | | |
| CBA Captain(ϕ) | MS | S | MR | MT |
| Genesis™ 836 | S | | MR | MII |
| Neelam(ϕ) | S | | MRMS | MI |
| PBA Maiden(ϕ) | S | | MRMS | MI |
| PBA Seamer(ϕ) | MS | S | MRMS | MI |
| PBA Slasher(ϕ) | S | | MRMS | MI |
| PBA Striker(ϕ) | S | | MRMS | MI |
| **KABULI** | | | | |
| Genesis™ 090 | MS | | MRMS | IVI |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible, T = tolerant, MT = moderately tolerant, MI = moderately intolerant, I = intolerant, VI = very intolerant.

# FIELD PEA

## Field pea variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

**Table 1: Merredin field pea.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.90** | **0.60** | **1.54** | **1.00** | **2.37** |
| PBA Taylor(Ф) | 113 | 139 | 118 | 104 | 99 |
| PBA Butler(Ф) | 105 | 120 | 104 | 105 | 106 |
| PBA Pearl | 93 | 89 | 98 | | |
| PBA Wharton(Ф) | 106 | 116 | 111 | 101 | 96 |
| PBA Gunyah(Ф) | 96 | 106 | 101 | 105 | 105 |
| Kaspa(Ф) | 100 | 112 | 96 | 92 | 103 |
| PBA Twilight(Ф) | 97 | 104 | 99 | 97 | 101 |
| PBA Oura(Ф) | 95 | 83 | 96 | 103 | 100 |
| GIA Kastar(Ф)* | | | 92 | 69 | 81 |
| GIA Ourstar(Ф)* | | | 81 | 90 | 94 |
| **Sowing date** | **25 May** | **7 Jun** | **18 May** | **31 May** | **25 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **90** | **65** | **65** |
| **Rainfall A–O (mm)** | **230** | **208** | **193** | **251** | **304** |

Special thanks to 2022 trial cooperator - permission to publish was not received.
* herbicide-tolerant variety. Learn more via the NVT Long Term Yield Reporter

Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Field pea variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of field pea in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table 2: Field pea disease guide for Western Australia.**

| Variety | Bacterial blight | Downy mildew | Powdery mildew | RLN resistance (*Pratylenchus neglectus*) | RLN resistance (*Pratylenchus thornei*) |
|---|---|---|---|---|---|
| GIA Kastar(Þ) | S | S | RMR | MR | MS |
| GIA Ourstar(Þ) | S (P) | S | S | MRMS | MSS |
| Kaspa(Þ) | S | S | S | RMR | MRMS |
| PBA Butler(Þ) | MS | S | S | RMR | MRMS |
| PBA Gunyah(Þ) | S | S | S | RMR | MRMS |
| PBA Oura(Þ) | MS | S | S | MR | MRMS |
| PBA Pearl | MS | S | S | MR | MRMS |
| PBA Percy | MRMS | S | S | RMR | RMR |
| PBA Taylor(Þ) | S | S | S | RMR | MRMS |
| PBA Twilight(Þ) | S | S | S | MR | MRMS |
| PBA Wharton(Þ) | S | S | RMR | MR | MRMS |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible, (P) = provisional rating.

# LUPIN

## New lupin varieties

The following information is for lupin varieties released in the 12 months to the date when the MET analysis was published on NVT online.

| Variety | Variety owner | End point royalty* ($) | Comments supplied by variety owner |
|---|---|---|---|
| Lawler[ф] | Australian Grain Technologies | 4.00 | A widely adapted variety, offering growers high and stable yields across all NSW, Victorian and South Australian lupin growing regions. |

* EPR amount is ex-GST, [ф] denotes Plant Breeder's Rights apply.



Refer to the latest *Crop Sowing Guide* for further information at grdc.com.au/nvt-crop-sowing-guides

# Lupin variety yield performance – Kwinana East

Yield results are presented from the top-performing varieties within each NVT location in the region for the past five seasons. Results are presented (as a percentage) for each variety relative to the mean trial yield for the location within each year. Varieties are listed in descending order of average yield over the period.

The Long Term Yield Reporter provides additional information on varieties not listed and can be viewed as a table or chart with error bars. Rainfall is provided for January to March (J–M) and April to October (A–O) and, where relevant, irrigation from April to October.

**Table 1: Bencubbin narrow-leaf lupin.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | | | **1.40** | **1.89** | **2.40** |
| Coyote[Φ] | No trial | No trial | 106 | 112 | 107 |
| PBA Jurien[Φ] | | | 104 | | 106 |
| Lawler[Φ] | | | 103 | 112 | 106 |
| PBA Bateman[Φ] | | | 104 | 104 | 104 |
| Mandelup[Φ] | | | 100 | 107 | 102 |
| PBA Barlock[Φ] | | | 98 | 105 | 100 |
| PBA Gunyidi[Φ] | | | 102 | 94 | 99 |
| Coromup[Φ] | | | 95 | 99 | 97 |
| PBA Leeman[Φ] | | | 92 | 100 | 96 |
| Wonga | | | 84 | 88 | 87 |
| **Sowing date** | | | **8 May** | **4 May** | **7 May** |
| **Rainfall J–M (mm)** | | | **96** | **140** | **102** |
| **Rainfall A–O (mm)** | | | **149** | **230** | **284** |

PBA Jurien[Φ] was not included in 2021 due to a seed quality issue.
Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

**Table 2: Kalannie narrow-leaf lupin.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **2.94** | | **2.02** | **2.12** | **3.05** |
| PBA Jurien[Φ] | | No trial | 108 | | 103 |
| Lawler[Φ] | | | 107 | 109 | 104 |
| Coyote[Φ] | 111 | | 111 | 107 | 105 |
| Mandelup[Φ] | | | 101 | 109 | 101 |
| PBA Barlock[Φ] | | | 97 | 112 | 98 |
| PBA Bateman[Φ] | 101 | | 107 | 104 | 102 |
| PBA Leeman[Φ] | 111 | | 88 | 93 | 99 |
| Coromup[Φ] | 107 | | 91 | 93 | 99 |
| PBA Gunyidi[Φ] | | | 102 | 95 | 100 |
| Wonga | | | 72 | 102 | 89 |
| **Sowing date** | **25 May** | | **8 May** | **4 May** | **1 May** |
| **Rainfall J–M (mm)** | **95** | | **108** | **131** | **51** |
| **Rainfall A–O (mm)** | **226** | | **163** | **271** | **269** |

PBA Jurien[Φ] was not included in 2021 due to a seed quality issue.
Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

**Table 3: Merredin narrow-leaf lupin.**

| Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Mean yield (t/ha)** | **1.84** | **0.28** | **0.86** | **0.96** | **2.37** |
| PBA Jurien[Φ] | | 105 | 106 | | 111 |
| Coyote[Φ] | 112 | 112 | 107 | 109 | 119 |
| Lawler[Φ] | | | 103 | 107 | 116 |
| Mandelup[Φ] | | 100 | 99 | 103 | 105 |
| PBA Barlock[Φ] | | 95 | 97 | 102 | 97 |
| PBA Bateman[Φ] | 105 | 106 | 107 | 107 | 106 |
| PBA Gunyidi[Φ] | | 101 | 106 | 102 | 95 |
| Coromup[Φ] | 93 | 97 | 86 | 87 | 104 |
| PBA Leeman[Φ] | 96 | 95 | 81 | 83 | 105 |
| Wonga | | 71 | 74 | 78 | 67 |
| **Sowing date** | **25 May** | **7 Jun** | **8 May** | **8 May** | **4 May** |
| **Rainfall J–M (mm)** | **58** | **14** | **79** | **82** | **84** |
| **Rainfall A–O (mm)** | **230** | **208** | **153** | **245** | **320** |

PBA Jurien[Φ] was not included in 2021 due to a seed quality issue.
Special thanks to 2022 trial cooperator - permission to publish was not received.
Learn more via the NVT Long Term Yield Reporter

# Lupin variety disease ratings – Western Australia

The following table contains varietal ratings for the predominant diseases of lupin in Western Australia. These ratings are updated annually by crop pathologists and were released in March 2023.

Selected varieties of most relevance to Western Australian growers are listed in alphabetical order and disease ratings are colour-coded to match resistance and tolerance ratings.

**Table 4: Lupin disease guide for Western Australia.**

| Variety | Anthracnose resistance | Cucumber mosaic virus (CMV) | Phomopsis pod infection | Phomopsis stem infection |
|---|---|---|---|---|
| Coromup[Φ] | MR | MR | MS | MR |
| Coyote[Φ] | MRMS | MRMS | MRMS | S |
| Jenabillup[Φ] | MS | MRMS | MR | MS |
| Lawler[Φ] | MR | MRMS | MS | MR |
| Mandelup[Φ] | MRMS | MRMS | S | RMR |
| PBA Barlock[Φ] | RMR | MR | MR | MR |
| PBA Bateman[Φ] | MRMS | MR | MS | RMR |
| PBA Gunyidi[Φ] | MRMS | MRMS | MRMS | RMR |
| PBA Jurien[Φ] | RMR | MS | MR | RMR |
| PBA Leeman[Φ] | MRMS | MRMS | MRMS | MR |
| Wonga | RMR | MR | MR | MR |

Learn more via the NVT Disease Ratings.

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible.

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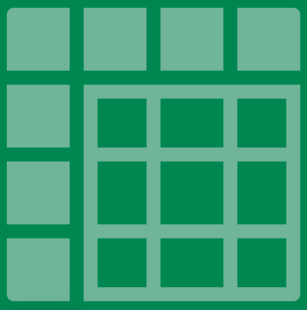

### NVT Disease Ratings

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