

# 2022 VICTORIAN CROP SOWING GUIDE



**GRDC**

GRAINS RESEARCH  
& DEVELOPMENT  
CORPORATION

**VICTORIA**  
OCTOBER 2021



**ARE YOU GROWING THE BEST  
VARIETY FOR YOUR SITUATION?**

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**Title:** *2022 Victorian Crop Sowing Guide*

This publication summarises information on current varieties of the major winter crops grown in Victoria. Local advisers are also a key resource for information relevant to individual localities. This publication aims to prompt growers to ask themselves, 'Am I growing the best variety for my situation?' Use it as a guide for discussion with consultants, advisers and marketing agents.

**Author:** Sarah Brown (Agriculture Victoria)

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**GRDC contact details:**

Ms Maureen Cribb

Integrated Publications Manager

PO Box 5367

KINGSTON ACT 2604

**Email:** [maureen.cribb@grdc.com.au](mailto:maureen.cribb@grdc.com.au)

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<https://grdc.com.au/victorian-crop-sowing-guide>.  
Remember to update it each October.

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## THE VICTORIAN CROP SOWING GUIDE

The *Victorian Crop Sowing Guide* outlines information on current varieties of the major winter crops grown in Victoria. The publication aims to prompt growers to ask themselves, 'Am I growing the best variety for my situation?'

The *Victorian Crop Sowing Guide* is compiled by Agriculture Victoria, with sources of additional information listed in each chapter. Local advisers are also a key resource for information relevant to individual localities. Growers are encouraged to use this publication as a guide for discussion with consultants, advisers and marketing agents.

The sowing guide is published every spring, a timely release to assist growers in making variety choices for the next season. It will be important for growers and advisers to review disease resistance ratings in March 2022 in the cereal and pulse disease guides to ensure they know the current resistance ratings of varieties. The latest 2021 National Variety Trials (NVT) data will also be available early in 2022 via the NVT website, the Long-term Yield Reporter and in the NVT Harvest reports.

The *Victorian Crop Sowing Guide* is a joint investment between the Grains Research and Development Corporation (GRDC) and Agriculture Victoria. Thank you to GRDC and all contributors for making this publication available to Victoria.

## INTERPRETING CEREAL RESISTANCE CLASSIFICATIONS

Below is an explanation of the resistance ratings used in this guide for foliar diseases, and how they should be interpreted.

- R** Resistant: the disease will not multiply or cause any damage on this variety.
- MR** Moderately resistant: the disease may be visible and will multiply slightly, but will not cause significant loss.
- MS** Moderately susceptible: the disease may cause losses up to 15 per cent or more in very severe cases.
- S** Susceptible: the disease can be severe on this variety and losses of 15 to 50 per cent can occur.
- VS** Very susceptible: this variety should not be grown in areas where a disease is likely to be a problem. Losses greater than 50 per cent are possible, and the build-up of inoculum will create problems for other growers.

## INTERPRETING PULSE RESISTANCE CLASSIFICATIONS

Below is an explanation of the resistance ratings used in this guide for foliar diseases, and how they should be interpreted.

- R** Resistant: no symptoms visible. No fungicides are required.
- RMR** Resistant to moderately resistant: the disease may be visible but will not cause significant plant damage or loss. However, under extreme disease pressure or highly favourable environmental conditions, fungicide applications may be required, for example to prevent seed staining.
- MR** Moderately resistant: the disease may be visible but will not cause significant plant damage or loss. However, under high disease pressure or highly favourable environmental conditions, fungicide applications may be required, for example to prevent seed staining.
- MRMS** Moderately resistant to moderately susceptible: the disease symptoms are moderate and may cause some yield and/or seed quality losses in conducive conditions. Fungicide applications, if applicable, may be required to prevent yield loss and seed staining.
- MS** Moderately susceptible: disease symptoms are moderate to severe and will cause significant yield and seed quality loss in the absence of fungicides in conducive seasons, but not complete crop loss.
- S** Susceptible: the disease is severe and will cause significant yield and seed quality loss, including complete crop loss in the absence of fungicides, in conducive conditions.
- VS** Very susceptible: growing this variety in areas where a disease is likely to be present is very high risk. Significant yield and seed quality losses, including complete crop loss, can be expected without control and the increase in inoculum may create problems for other growers.

## INTERPRETING RESISTANCE CLASSIFICATIONS FOR NEMATODES

Below is an explanation of the resistance ratings used in this guide for nematodes for both cereals and pulses, and how they should be interpreted.

- R** Resistant: nematode numbers will decrease when this variety is grown.
- MR** Moderately resistant: nematode numbers will slightly decrease when this variety is grown.
- MS** Moderately susceptible: nematode numbers will slightly increase when this variety is grown.
- S** Susceptible: nematode numbers will increase greatly in the presence of this variety.
- VS** Very susceptible: a large increase in nematode numbers can occur when this variety is grown, and this will cause problems to a following intolerant crop.

These classifications are only a guide, and yield losses will depend on the environment and seasonal conditions. Disease ratings can change throughout the year. Refer to NVT disease ratings for the most up-to-date ratings.

## DISEASE RATING COLOUR RANGE

<b>R</b>	<b>RMR</b>	<b>MR</b>	<b>MRMS</b>	<b>MS</b>	<b>MSS</b>	<b>S</b>	<b>VS</b>
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Resistance order from best to worst: R > RMR > MR > MRMS > MS > MSS > S > SVS > VS.

R = Resistant; RMR = Resistant to moderately resistant; MR = Moderately resistant; MRMS = Moderately resistant to moderately susceptible; MS = Moderately susceptible; MSS = Moderately susceptible to susceptible; S = Susceptible; SVS = Susceptible to very susceptible; VS = Very susceptible.



# INTRODUCTION

## NATIONAL VARIETY TRIALS (NVT)

The variety trials presented in this book are sourced from the NVT program. In Victoria, NVTs are fully funded by GRDC and, in 2021, field trial management was contracted to three service providers: Kalyx, Birchip Cropping Group and Southern Farming Systems.

NVTs provide independent information on varieties for growers. The aim of each NVT is to document a ranking of new and widely adopted varieties in terms of grain yield and to provide grain quality information relevant to delivery standards. GRDC also invests the NVT Pathology Program, which determines disease resistance ratings used in the sowing guide.

Conducted to a set of predetermined protocols, NVTs are sown and managed as close as possible to local best practice such as sowing time, fertiliser application, weed management and pest and disease control, including fungicide application.

An ongoing project of this type would not be possible without the cooperation of farmers prepared to contribute sites, and who often assist with the management of trials on their property.

For more information on the NVT program please visit the NVT website at <https://nvt.grdc.com.au>.

## NVT HARVEST REPORTS

The NVT Harvest Reports are a valuable extension to the Victorian Crop Sowing Guide and will include the latest 2021 yield reports and disease reactions. The NVT Harvest Reports will be released soon after results are released in early 2022 and will be available on the NVT website (<https://nvt.grdc.com.au/harvest-reports>).

## PLANT BREEDER'S RIGHTS (PBR)

Varieties subject to Plant Breeder's Rights at the time of printing are annotated with the symbol (b). It should be noted that 'Unauthorised commercial

propagation or any sale, conditioning, export, import or stocking of propagation material of these varieties is an infringement under the *Plant Breeder's Rights Act 1994* and that any breaching of PBR law is punishable by a maximum \$50,000 fine for each offence'.

## END POINT ROYALTIES (EPRS)

EPRs payable for 2021-22 are quoted from [www.varietycentral.com.au](http://www.varietycentral.com.au) and are quoted ex-GST. Compliance with EPR systems is vital to ensure the future of the Australian grains industry through the funding of new varieties and long-term productivity gains. EPRs for 2022-23 harvest will become available early in 2022 on the Variety Central website.

## SELECTION CRITERIA

When selecting a variety, farmers need to make their selection based on the available information, including yield, crop quality attributes, disease and pest resistance, individual farm and paddock situation, the access and availability of target markets, and storage and handling facilities.

## COMPROMISED TRIALS

It is important to note, trials in the NVT are sometimes subject to seasonal or management issues. Trials that do not meet the quality requirement for publication through the NVT reporting tools are published within the *NVT Quarantine Trial Report*. Quarantine reports include trials which have been compromised and should not be used to make variety selection decisions. These trials may have been affected by frost, drought, animals or spray drift. The purpose of the NVT is to allow growers to make informed variety selections and compromised trials can be misleading and result in poor variety selection. Long-term yield tables in each chapter will clearly state whether there is data missing as a result of compromised trials.

## INTERPRETING LONG-TERM YIELD DATA

The long-term yield data presented in this sowing guide is an output of NVT Multi Environment Trial (MET) analysis. NVT run trials in all cropping regions of Victoria and other states across Australia, and use a five-year rolling dataset in the MET analysis.

A mixed model approach is used in the MET analysis using expertise from the GRDC-supported Statistics for the Australian Grains Industry (SAGI) program. This approach generates long-term MET predictions for varieties at an individual trial level. A prediction is generated for every variety in every trial in the entire dataset, regardless of whether the variety was actually tested at every location. Using a factor analytic (FA) model, NVT can provide a yield prediction for every situation. For instance, if the yield of five varieties were ranked in a similar order at multiple trials (sites A, B, C and D), but variety X was not grown at site D, the relative ranking of X against the other varieties can be used to predict the yield of variety X at site D.

The output used in this sowing guide presents the MET data on a region-by-year basis across the five years used in the MET dataset. The analysis, and subsequent reporting systems, have allowed NVT to bring together very large datasets and make

more refined, relevant and robust predictions about the relative performance of each variety across different locations and seasons. Readers can now use this more detailed data to better understand a variety's performance over several years – rather than just a single averaged value.

Readers can further interrogate the data online to better understand the performance of varieties under a range of situations using the NVT Long-Term Yield Reporter. The FA method is a very powerful and accurate predictor of performance, and the yield predictions are best viewed at the individual trial/environment level. However, these detailed datasets are too large for printed sowing guides or quick reference summaries, such as the *Victorian Crop Sowing Guide*. NVT have developed a system for viewing the complex dataset based on individual user preferences. Users can choose to view data in year or yield-based groupings and can tailor site or region selections to their own needs, for instance by viewing METs only for sites where varieties were present in the trials (default option). In this sowing guide, we present results in year groupings and only for varieties present in trials. The NVT Long-term Yield Reporter is designed to run on all web-browsing platforms on computers, tablets and phones, and is available online at <https://app.nvt.grdc.com.au/>.

## COLOUR GRADIENT LEGEND: MEAN VARIETY YIELD PERFORMANCE



LOW

HIGH

Long-term mean yield illustrated by colour gradient from lowest (red) to highest (green), comparable on an annual basis.

# WHEAT

Wheat variety selection is based on a number of considerations, including grain yield and quality, disease resistance, maturity, adaptation to the rainfall, elevation, temperature, soil type and in some cases, grazing suitability. This chapter aims to provide information regarding these attributes to assist with variety selection.

## NEW VARIETIES

The new wheat varieties added this year are bread wheats Boree<sup>®</sup>, Calibre<sup>®</sup>, LRPB Bale<sup>®</sup>, LRPB Dual<sup>®</sup>, Sunmaster<sup>®</sup> and Valiant<sup>®</sup> CL Plus, durum wheats DBA Artemis<sup>®</sup> and DBA Mataroi<sup>®</sup>, and feed wheats RGT Cesario and Severn.

## QUALITY CHANGES

Grain Trade Australia (GTA) made no major changes to the quality standards regarding wheat for the 2021-22 season.

## INDUSTRY UPDATE

Australian Crop Breeders Ltd (ACB) developed new guidelines for wheat maturity classifications in 2020. Cereal maturity classifications and terminology in this guide have been assigned using the [industry guidelines](#) provided by ACB and will be different to previous editions.

## DISEASE UPDATE

Variety selection plays a critical part in the effective management of disease. Where possible, using the disease ratings provided in Table 5, efforts can be made to avoid varieties that are highly susceptible to locally important diseases. If it is not possible to avoid highly susceptible cultivars, then the ratings can be used to inform paddock selection and chemical disease control. Table 1 provides some minimum disease targets for varieties in the low, medium and high-rainfall zones.

In 2020 an old stripe rust strain (64E0A-) reappeared in NSW. Although not reported in Victoria, rust disease ratings have been provided as a split rating for some cultivars. A slash (/) is used to show the reaction of both the dominant strain (present in Victoria) on the left and the minor strain (present in NSW in 2020) on the right.

## MORE INFORMATION

### [nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

### [grdc.com.au](http://grdc.com.au)

- [Wheat Southern region – GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

### [agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Agriculture Victoria Cereal Disease Guide](#)
- [Growing wheat in Victoria](#)

### [extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

### [StripeRustWM app](#)

- App to support decision making for management of stripe rust in wheat. Available for iPad and Android tablet users.



## VARIETY DESCRIPTIONS

Varieties have been listed according to quality type and in alphabetical order and not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies. Wheat quality is for the Southern Zone.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

### Abbreviations used are:

( <sup>1</sup> )	denotes Plant Breeder's Rights apply
<b>CCN</b>	Cereal cyst nematode
<b>BYDV</b>	Barley yellow dwarf virus
<b>RLN</b>	Root lesion nematode
<b>APH</b>	Australian Prime Hard (min protein 13%)
<b>AH</b>	Australian Hard (min protein 11.5%)
<b>APW</b>	Australian Premium White (min protein 10%)
<b>ASW</b>	Australian Standard White
<b>ADR</b>	Australian Premium Durum
<b>ANW</b>	Australian Standard Noodle (protein 9.5–11.5%)
<b>ASFT</b>	Australian Soft (protein 9.5%)
<b>FEED</b>	Australian Feed
<b>SADGA</b>	Southern Australia Durum Growers Association
<b>NYC</b>	Not yet classified
*	denotes default classification
End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.	

## BREAD WHEAT

### ASCOT<sup>(1)</sup>

APW quality. Mid-slow maturing. Ascot is the first wheat variety to be launched by BASF. Suited to medium to high-rainfall zones for Victoria. Released 2020 (tested as BSWDH10-215). Bred by BASF, seed available and marketed by Seednet. EPR \$3.50.

### BALLISTA<sup>(1)</sup>

AH quality. Quick-mid maturity variety, slightly quicker than Mace<sup>(1)</sup>. High and stable yield across a range of environmental conditions, with CCN resistance suited to tight rotations. Released 2020 (tested as RAC2598). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

### BECKOM<sup>(1)</sup>

AH quality. Mid maturity suited to sowing in early May. Beckom<sup>(1)</sup> has a short stature and moderate straw strength and performs well across all rainfall zones. Released 2015. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.25.

### NEW – BOREE<sup>(1)</sup>

Quality NYC. Mid season maturing variety. Good yellow leaf spot resistance, moderate plant height, slightly taller than Scepter<sup>(1)</sup> with good lodging tolerance. Released 2021 (tested as V09063-47-16). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.60.

### NEW – CALIBRE<sup>(1)</sup>

AH quality. Quick-mid maturity variety derived from Scepter<sup>(1)</sup>. Moderately long coleoptile length with slightly improved powdery mildew resistance over Scepter<sup>(1)</sup>. Released 2021 (tested as RAC2721). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

### CATAPULT<sup>(1)</sup>

AH quality. Mid-slow maturity, suitable for late April to mid-May sowing. Suitable across a range of conditions and environments. Closely related to Scepter with similar grain quality, high test weight and low screenings. Suitable for tight cereal rotations with CCN and yellow leaf spot resistance. Released 2019. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.25.

### CHIEF CL PLUS<sup>(1)</sup>

APW quality. A mid maturing variety with good pre-anthesis vigour. Clearfield® Plus wheat registered for label rates of Intervix® herbicide. Released 2016. Marketed by InterGrain and available through InterGrain Seedclub Members. Not eligible for farmer-to-farmer trade. EPR \$4.25.

### COOLAH<sup>(1)</sup>

AH quality. Mid-slow maturity suited to end of April to early May sowing. Medium height, producing high test weight and low screenings with a strong rust resistance package. Released 2016. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

### COOTA<sup>(1)</sup>

AH quality. Mid-slow maturity suited to end of April to beginning of May sowing. Broad adaption across low to high-rainfall zones producing low screenings and high test weights. Good lodging resistance coupled with short plant height lead to strong performance in high-rainfall zones or under

irrigation. Released 2020 (tested as V10100-064). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.60.

#### **CORACK<sup>Ⓛ</sup>**

APW quality. Quick maturity, short stature variety with good CCN and yellow spot resistance. This coupled with low screenings and high test weights makes it a good option for tight cereal rotations. Released 2011. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.00.

#### **COSMICK<sup>Ⓛ</sup>**

AH quality. Fully awned, mid maturing. Released 2015. Marketed by InterGrain and available through InterGrain Seedclub Members. Free to trade. EPR \$3.85.

#### **CUTLASS<sup>Ⓛ</sup>**

APW quality. Mid-slow maturity variety with a flexible sowing window like Yitpi<sup>Ⓛ</sup>. Released 2015. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.00.

#### **DENISON<sup>Ⓛ</sup>**

APW quality. Slow maturity variety suited to mid-late April sowing. Short stature, good lodging resistance, low screenings and high test weights. Released 2020 (tested as WAGT734). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.40.

#### **DS BENNETT<sup>Ⓛ</sup>**

ASW quality. Tall awnless, mid maturing winter wheat suited to medium to high-rainfall zones. Released 2018. Bred by Dow Seeds, seed available from Seednet. EPR \$4.25.

#### **DS DARWIN<sup>Ⓛ</sup>**

AH quality. Mid maturing and suited to low to medium-rainfall zones. Released 2015. Bred by Dow Seeds and marketed by Seednet. EPR \$4.25.

#### **DS PASCAL<sup>Ⓛ</sup>**

APW quality. Slow maturing suited to medium to high-rainfall zones and irrigation. Released 2015. Bred by Dow Seeds and marketed by Seednet. EPR \$4.25.

#### **EGA GREGORY<sup>Ⓛ</sup>**

APW\* quality. Mid-slow maturing variety suited to north-eastern Victoria. Susceptible to yellow spot and CCN. Released 2004. Marketed by Pacific Seeds. Free to trade. EPR \$2.10.

#### **EGA WEDGETAIL<sup>Ⓛ</sup>**

APW\* quality. A mid maturing, dual-purpose winter wheat. Developed for early sowing, suited to medium to high-rainfall areas. Tolerant of acid soils and suitable for early winter grazing. Registered 2002. Marketed by Seednet. EPR \$1.45.

#### **EG TITANIUM**

AH quality. A mid-slow maturing variety targeted for early planting in medium to high-rainfall zones. Good disease package including good foliar disease resistance. Released 2018. Marketed by Elders and Elders-approved commercial partners. EPR \$3.00.

#### **ELMORE CL PLUS<sup>Ⓛ</sup>**

AH quality. Two-gene tolerance to label rates of Intervix® herbicide. Mid maturity variety best suited to moderate to high-yielding areas. Released 2011. Bred and marketed by AGT; not eligible for AGT Seed Sharing™. EPR \$3.55.

#### **EMU ROCK<sup>Ⓛ</sup>**

AH quality. An awned, semi-dwarf, very quick-maturing variety, best suited to low to medium-rainfall environments. Released 2011. Bred and marketed by InterGrain. Free to trade. EPR \$3.50.

#### **GRENADE CL PLUS<sup>Ⓛ</sup>**

AH quality. Two-gene tolerance to label rates of Intervix® herbicide. Quick-mid season variety. Released 2012. Bred and marketed by AGT; not eligible for AGT Seed Sharing™. EPR \$3.80.

#### **HAMMER CL PLUS<sup>Ⓛ</sup>**

AH quality. Two-gene tolerance to label rates of Intervix® herbicide. Closely related to Mace<sup>Ⓛ</sup> with similar maturity and adaptability. Suitable for tight cereal rotations with CCN and yellow leaf spot resistance. Released 2020 (tested as OAGT0016). Bred and marketed by AGT; not eligible for AGT Seed Sharing™. EPR \$4.25.

#### **ILLABO<sup>Ⓛ</sup>**

AH quality. A quick maturity, dual-purpose winter wheat, two to three days quicker to heading than EGA Wedgetail<sup>Ⓛ</sup>. Developed for early sowing and winter grazing. Good lodging and black point resistance. Released 2018. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

**KORD CL PLUS<sup>Ⓛ</sup>**

AH quality. Two-gene tolerance to label rates of Intervix® herbicide. Mid maturity. Released 2011. Bred and marketed by AGT; not eligible for AGT Seed Sharing™. EPR \$3.55.

**NEW – LRPB BALE<sup>Ⓛ</sup>**

APW quality. A slow maturing spring wheat with a long coleoptile length. Delayed flowering and awnless qualities allow it to be delivered as grain or cut for hay, making it a good option for areas prone to frost. Limited NVT evaluation data available for Victoria. Released 2021 (tested as LPB18-7946). Bred by CSIRO and marketed by LongReach. EPR TBC.

**LRPB COBRA<sup>Ⓛ</sup>**

AH quality. Short semi-dwarf quick-mid spring variety suited to medium to high yield potential environments. Suitable on both acid and alkaline soils. Released 2011. Marketed by Pacific Seeds. Free to trade. EPR \$3.50.

**NEW – LRPB DUAL<sup>Ⓛ</sup>**

AH quality. Mid-slow maturing, awnless spring wheat with a long coleoptile length, making it a good option for areas prone to frost. Limited evaluation data available for Victoria. Released 2021 (tested as LPB18-7982). Bred by CSIRO and marketed by LongReach. EPR TBC.

**LRPB KITTYHAWK<sup>Ⓛ</sup>**

AH quality. Mid maturing winter wheat, similar to EGA Wedgetail. Developed for early sowing, suited to medium to high-rainfall areas. Susceptible to CCN. Dual-purpose wheat suitable for early winter grazing. Released 2017. Marketed by Pacific Seeds. Free to trade. EPR \$4.25.

**LRPB LANCER<sup>Ⓛ</sup>**

AH quality. Mid-slow spring variety for early planting. Short semi-dwarf with awns, suited to medium to high-rainfall areas. Susceptible to CCN. Released 2013. Marketed by Pacific Seeds. Free to trade. EPR \$4.25.

**LRPB NIGHTHAWK<sup>Ⓛ</sup>**

APW quality. Very slow spring wheat with unique characteristics, allowing it to be planted earlier in systems which don't traditionally suit winter wheat types. Demonstrated good yields throughout the April sowing window. Released 2019. Bred by LRPB and marketed by Pacific Seeds. EPR \$4.25.

**LRPB SCOUT<sup>Ⓛ</sup>**

AH quality. Mid spring variety with wide adaptation. Resistant to CCN. Adapted to alkaline soils. Released 2009. Marketed by Pacific Seeds. Free to trade. EPR \$2.80.

**LRPB TROJAN<sup>Ⓛ</sup>**

APW quality. Mid-slow spring variety suited to medium to high-rainfall areas. Released 2013. Marketed by Pacific Seeds. Free to trade. EPR \$4.00.

**MACE<sup>Ⓛ</sup>**

AH quality. Quick-mid maturity, of medium height. A comprehensive fungicide strategy is required to control stripe rust. Released 2008. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.00.

**RAZOR CL PLUS<sup>Ⓛ</sup>**

ASW quality. Two-gene tolerance to label rates of Intervix® herbicide. Quick-mid maturing variety derived from Mace<sup>Ⓛ</sup>. Released 2018. Bred and marketed by AGT; not eligible for AGT Seed Sharing™. EPR \$3.30.

**ROCKSTAR<sup>Ⓛ</sup>**

AH quality. Mid-slow maturing variety. Good grain size, moderate plant height, similar to Mace<sup>Ⓛ</sup>. Released 2019. Bred and marketed by InterGrain and available through InterGrain Seedclub Members. Free to trade. EPR \$3.50.

**SCEPTER<sup>Ⓛ</sup>**

AH quality. Mid maturing variety of medium height. Intended to replace Mace<sup>Ⓛ</sup>, flowering two days later. Released 2015. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.25.

**SHERIFF CL PLUS<sup>Ⓛ</sup>**

APW quality. Clearfield® Plus wheat with good yield stability. Mid-slow maturing variety registered for label rates of Intervix® herbicide. Released 2018. Bred and marketed by InterGrain and available through InterGrain Seedclub members. Not eligible for farmer-to-farmer trade. EPR \$4.25.

**SUNBLADE CL PLUS<sup>Ⓛ</sup>**

AH quality. Two-gene tolerance to label rates of Intervix® herbicide. Mid maturing variety suited to mid-May sowing across all environments. Medium plant height. Released 2020 (tested as SUN968G). Bred and marketed by AGT and not eligible for AGT Seed Sharing™. EPR \$4.35.



**SUNFLEX<sup>Ⓢ</sup>**

AH quality. Slow maturing variety suited to sowing from mid to late April in medium to high-rainfall zones. Short plant height with low screenings and high test weights. Released 2020 (tested as SUN862I). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.60.

**SUNLAMB<sup>Ⓢ</sup>**

ASW quality. Awnless, white grained, very slow maturing spring variety suited for grain and fodder applications. It is best sown early to mid-April. Released 2015. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$2.75.

**NEW – SUNMASTER<sup>Ⓢ</sup>**

Quality NYC. Mid maturing variety of medium height intended to replace Suntop. Improved stripe rust resistance and physical grain quality package compared to Suntop. Useful resistance to crown rot and RLN. Released 2020 (tested as SUN972P). Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.60.

**SUNTOP<sup>Ⓢ</sup>**

AH quality. Mid maturing, moderate to tall height, suited to North Central and North East Victoria. High test weight, moderate susceptibility to screenings. Released 2012. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.25.

**NEW – VALIANT<sup>Ⓢ</sup> CL PLUS**

AH quality. Slow season Clearfield® Plus spring wheat. Ideally suited to early sowing and useful where there are residue concerns from previous crops. Good yellow leaf spot resistance. Released 2021 (tested as IGW4502). Bred and marketed by InterGrain. EPR \$4.35.

**VIXEN<sup>Ⓢ</sup>**

AH quality. Quick maturing wheat suited to mid-May onwards sowing with moderate plant height. Good yellow leaf spot resistance. Released 2018. Bred and marketed by InterGrain. Free to trade. EPR \$3.50.

**WALLUP<sup>Ⓢ</sup>**

AH quality. Quick-mid maturing, short stature with good lodging tolerance suited to medium-rainfall areas. Released 2011. Bred by AGT and eligible for AGT Seed Sharing™. EPR \$3.00.

**YITPI<sup>Ⓢ</sup>**

AH quality. Mid-slow maturing, white, fully awned, semi-dwarf suited to low to medium-rainfall areas. Boron tolerant. Released 2000. Marketed by Seednet. EPR \$1.00.

**SPECIALTY WHEAT****LRPB ORYX<sup>Ⓢ</sup>**

ASFT quality. Mid spring soft wheat variety suited to medium-rainfall zones in Victoria. Moderately susceptible to yellow spot, and susceptible to septoria and CCN. Released 2020 (tested as LPB12-0152). Marketed by Pacific Seeds. EPR \$3.75.

**LRPB PARAKEET<sup>Ⓢ</sup>**

ANW quality. Mid spring noodle wheat variety suited to medium-rainfall zones in Victoria. Moderately susceptible to yellow leaf spot and CCN, and susceptible to septoria. Released 2020 (tested as LPB12-0168). Marketed by Pacific Seeds. EPR \$3.75.

**DURUM WHEAT****BITALLI<sup>Ⓢ</sup>**

ADR quality. A quick-mid maturing variety. Produces low screenings and high test weight. Released 2019. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

**NEW – DBA ARTEMIS<sup>Ⓢ</sup>**

ADR quality. Well-adapted for production in the southern wheat growing areas, DBA Artemis<sup>Ⓢ</sup> is mid maturing and comparable in yield to DBA Aurora<sup>Ⓢ</sup>. Released 2019. Bred by Durum Breeding Australia and marketed by SADGA. EPR \$3.00.

**DBA AURORA<sup>Ⓢ</sup>**

ADR quality. A mid maturing variety with good early vigour and weed competitiveness. Released 2014. Bred by Durum Breeding Australia and marketed by SADGA. EPR \$3.00.

**NEW – DBA MATARO<sup>Ⓢ</sup>**

ADR quality (northern zone). Quick maturity durum wheat variety, comparable to Westcourt<sup>Ⓢ</sup>. Erect plant growth and medium stature. Initially released from Tamworth Agricultural Institute for use in NSW, currently being trialled in Victoria. Released 2021 (tested as TD1602). Bred by Durum Breeding Australia and marketed by Seednet. EPR \$3.50.

**DBA SPES<sup>Ⓢ</sup>**

ADR quality. A mid maturing variety. Comparable or slightly better screenings to DBA Aurora<sup>Ⓢ</sup> with good grain size. Released 2018. Bred by Durum Breeding Australia and marketed by SADGA. EPR \$3.00.

**WESTCOURT<sup>Ⓢ</sup>**

ADR quality. A mid maturing variety with a robust grain package of low screenings and high test weight. Released 2019. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.50.

## FEED

### LRPB BEAUFORT<sup>Ⓛ</sup>

FEED quality. An awnless, red-grained, slow-very slow spring variety suited to high-rainfall zones and certain medium-rainfall zones. Good stripe rust and yellow leaf spot resistance. Moderately susceptible to leaf rust, but highly susceptible to stem rust. Released 2008. Marketed by GrainSearch. EPR \$3.00.

### LONGSWORD<sup>Ⓛ</sup>

FEED quality. A quick maturing, dual-purpose winter wheat suited to low to medium-rainfall areas. Suits April sowing and offers grazing potential. Released 2017. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$2.75.

## FEED/DUAL PURPOSE

### ANAPURNA

FEED quality. An awned, red-grained winter wheat. Mid-slow maturing, similar to RGT Accroc. Dual-purpose variety suitable for graze and grain production when sown early in high-rainfall zones or under irrigation. Released 2020. Bred and marketed by AGT and eligible for AGT Seed Sharing™. EPR \$3.20.

### MANNING<sup>Ⓛ</sup>

FEED quality. Slow maturing, dual-purpose, white-grained winter wheat suited to longer growing season zones and irrigation. Released 2014. Bred by CSIRO and GRDC and marketed by GrainSearch. EPR \$3.50.

### RGT ACCROC

FEED quality. An awned, red-grained winter wheat. Mid-slow maturing variety for medium to high-rainfall zones and irrigation. Suitable for dual-purpose applications when early sowing is possible. Released 2017. Bred by RAGT Semences and marketed by Seed Force. EPR \$4.00.

### RGT CALABRO

FEED quality. An awned, slow maturing, red-grained winter wheat suited to the high-rainfall zone. Released 2017. Bred by RAGT Semences and marketed by Seed Force. EPR \$4.00.

### NEW – RGT CESARIO

FEED quality. Mid-slow maturing, awnless winter wheat. Suitable for medium to high-rainfall areas of Victoria. A multi-purpose variety that is suited to grazing, silage, and grain production. Released 2021 (tested as SFR86-090). Bred by RAGT Semences and marketed by Seed Force. EPR \$4.00.

### RGT ZANZIBAR

FEED quality. Fully awned, very slow maturing spring variety suited to North Central, North East and South West. A comprehensive fungicide strategy is required to control stem rust. Released 2017. Bred by RAGT Semences and marketed by Seed Force. EPR \$4.00.

### NEW – SEVERN

FEED quality. Quick-mid maturing, awnless winter wheat suitable for spring and winter grazing, hay and silage production. Dense tillering habit with excellent straw strength for standability. Suitable for medium and high-rainfall areas in Victoria. Bred in Australia for Australian conditions. Released 2021. Marketed by S&W Seed Company. EPR \$3.00.

### SF ADAGIO

FEED quality. An awned, red-grained winter wheat. Slow maturity variety for higher-rainfall zones and irrigation, suitable for dual-purpose applications when early sowing is possible. Released 2014. Bred by RAGT Semences and marketed by AGF Seeds. EPR \$3.60.

### SQP REVENUE

FEED quality. A red-grained, slow maturing awnless winter wheat suited to longer growing season zones and irrigation. Released 2010. Bred by AusGrainz and CSIRO and marketed by GrainSearch. EPR \$3.50.

**Table 1: Suggested minimum levels of wheat disease resistance for the southern region.**

Annual rainfall	Rust			Yellow leaf spot	<i>Septoria tritici</i>
	Stem	Stripe	Leaf		
Low <350mm	MSS	MS	MS	MSS	S
Medium 350 to 500mm	MS	MRMS	MS	MSS	MS
High >500mm*	MRMS	MRMS	MRMS	MSS	MRMS

\*unless a suitable program of disease control by fungicide applications can be planned and carried out.

Reviewed by Mark McLean, Agriculture Victoria (2021).

**Table 2: Wheat time of sowing guide based on phenology speed.**

This table is a guide only and has been compiled from research from the National Phenology Initiative (ULA1806-003) and the following GRDC projects: CSP00111, CSP00178 and ULA1703-004.

These projects undertook time of sowing x cultivar experiments across Victoria to determine optimal sowing times for different cultivars in different environments.

They also simulated optimal flowering periods in different environments and quantified cultivar development speed relative to each other.

MALLEE			March			April			May			June		
Type	Speed	Example cultivar												
Winter	Mid	DS Bennett <sup>db</sup>												
Winter	Quick	Illabo <sup>db</sup>												
Spring	Mid-slow	LRPB Trojan <sup>db</sup>												
Spring	Mid	Scepter <sup>db</sup>												
Spring	Quick-mid	Mace <sup>db</sup>												
Spring	Quick	Vixen <sup>db</sup>												
Spring	Very quick	Hatchet CL Plus <sup>db</sup>												
WIMMERA			March			April			May			June		
Winter	Mid	DS Bennett <sup>db</sup>												
Winter	Quick	Illabo <sup>db</sup>												
Spring	Slow-very slow	LRPB Beaufort <sup>db</sup>												
Spring	Mid-slow	LRPB Trojan <sup>db</sup>												
Spring	Mid	Scepter <sup>db</sup>												
Spring	Quick-mid	Mace <sup>db</sup>												
Spring	Quick	Vixen <sup>db</sup>												
Spring	Very quick	Hatchet CL Plus <sup>db</sup>												
NORTH CENTRAL			March			April			May			June		
Winter	Mid	DS Bennett <sup>db</sup>												
Winter	Quick	Illabo <sup>db</sup>												
Spring	Slow-very slow	LRPB Beaufort <sup>db</sup>												
Spring	Mid-slow	LRPB Trojan <sup>db</sup>												
Spring	Mid	Scepter <sup>db</sup>												
Spring	Quick-mid	Mace <sup>db</sup>												
Spring	Quick	Vixen <sup>db</sup>												
Spring	Very quick	Hatchet CL Plus <sup>db</sup>												
NORTH EAST			March			April			May			June		
Winter	Mid	DS Bennett <sup>db</sup>												
Winter	Quick	Illabo <sup>db</sup>												
Spring	Slow-very slow	LRPB Beaufort <sup>db</sup>												
Spring	Mid-slow	LRPB Trojan <sup>db</sup>												
Spring	Mid	Scepter <sup>db</sup>												
Spring	Quick-mid	Grenade CL Plus <sup>db</sup>												
Spring	Quick	Vixen <sup>db</sup>												
Spring	Very quick	Hatchet CL Plus <sup>db</sup>												
SOUTH WEST			March			April			May			June		
Winter	Slow	RGT Accroc												
Winter	Mid	DS Bennett <sup>db</sup>												
Spring	Slow-very slow	LRPB Beaufort <sup>db</sup>												
Spring	Mid-slow	LRPB Trojan <sup>db</sup>												
Spring	Mid	Beckom <sup>db</sup>												

Yellow = earlier than optimum.

Green = optimum sowing time.

Red = later than optimum.

Blue = dual purpose.



**Table 3: Agronomic characteristics of wheat varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeders, National Variety Trials, GRDC research projects and seed companies. Maximum quality for the Southern Zone has been sourced from Grain Trade Australia, Wheat Trading Standards (2021).

	Maximum quality southern zone	Rainfall			Screenings	Maturity	Height	Coleoptile length	Lodging	Sprouting	Head type		Soil tolerance	
		Low <350mm	Med 350 to 500mm	High >500mm							Colour	Awn	Boron	Acid
BREAD WHEAT														
Ascot <sup>db</sup>	APW		✓	✓	MR	M-S	M	ML	RMR	-	W	A	-	-
Ballista <sup>db</sup>	AH	✓	✓		MR	Q-M	S	M	MR	-	W	A	-	-
Beckom <sup>db</sup>	AH	✓	✓	✓	MRMS	M	S	M	MRMS	MSS	W	A	MT	MT-T
Boree <sup>db</sup>	NYC	✓	✓		MR	M	M	M	MR <sub>p</sub>	MSS <sub>p</sub>	W	A	-	-
Calibre <sup>db</sup>	AH	✓	✓		MR	Q-M	M	ML	MRMS <sub>p</sub>	MSS <sub>p</sub>	W	A	-	-
Catapult <sup>db</sup>	AH	✓	✓	✓	MR	M-S	M	M	MRMS	MSS	W	A	MT	MT-T
Chief CL Plus <sup>db</sup>	APW	✓	✓	✓	MR	M	M	M	MR	S	W	A	-	-
Coolah <sup>db</sup>	AH		✓	✓	MR	M-S	M	M	MRMS	S	W	A	I	MT
Coota <sup>db</sup>	AH	✓	✓	✓	R	M-S	S	M	MR	-	W	A	-	-
Corack <sup>db</sup>	APW	✓	✓		R	Q	S	M	MR	S	W	A	I	MT-T
Cosmick <sup>db</sup>	AH	✓	✓		MS	M	M	L	MRMS	S-SVSp	W	A	-	-
Cutlass <sup>db</sup>	APW	✓	✓		MRMS	M-S	MT	ML	MRMS	S	W	A	MT	MT-T
Denison <sup>db</sup>	APW		✓	✓	MR	S	S	M	MR	-	W	A	-	-
DS Bennett <sup>db</sup>	ASW		✓	✓	-	M (+W)	T	-	-	-	W	AL	-	-
DS Darwin <sup>db</sup>	AH	✓	✓		MR	M	M	S	MR	SVSp	W	A	-	-
DS Pascal <sup>db</sup>	APW		✓	✓	MR	S	M	S	MR	MR <sub>p</sub>	W	A	-	-
EGA Gregory <sup>db</sup>	APW*		✓	✓	MR	M-S	T	M	MS	S	W	A	-	MT
EGA Wedgetail <sup>db</sup>	APW*		✓	✓	MR	M (+W)	M	MS	MR	S	W	A	I	MT-T
EG Titanium	AH		✓	✓	R	M-S	S	M	R	MR	W	A	-	MT-T
Elmore CL Plus <sup>db</sup>	AH		✓		MS	M	M	M	MRMS	S	W	A	I	I
Emu Rock <sup>db</sup>	AH	✓	✓		R	VQ-Q	S	M	R	S	W	A	-	-
Grenade CL Plus <sup>db</sup>	AH		✓		MR	Q-M	M	ML	MR	S	W	A	MT	MT-T
Hammer CL Plus <sup>db</sup>	AH	✓	✓		MR	Q-M	S	M	MRMS	-	W	A	-	-
Illabo <sup>db</sup>	AH	✓	✓	✓	MR <sub>p</sub>	Q (+W)	S	S	MR <sub>p</sub>	Sp	W	A	lp	MT <sub>p</sub>
Kord CL Plus <sup>db</sup>	AH	✓	✓		MR	M	M	S	-	SVS	W	A	MT	MT
LRPB Bale <sup>db</sup>	APW		✓		MR	S	T	L	MRMS	-	W	AL	MT	MT
LRPB Cobra <sup>db</sup>	AH	✓	✓	✓	MRMS	Q-M	S	M	MR	SVS	W	A	I	MT
LRPB Dual <sup>db</sup>	AH	✓	✓		MR	M-S	MT	ML	MR	-	W	AL	MT	MT
LRPB Kittyhawk <sup>db</sup>	AH		✓	✓	MR	M (+W)	M	MS	MR	S	W	A	I	MT-MI
LRPB Lancer <sup>db</sup>	AH		✓	✓	MR	M-S	S	M	MR	S	W	A	I	MI-I
LRPB Nighthawk <sup>db</sup>	APW		✓		MRMS	VS	M	M	MR	S	W	A	I	MI
LRPB Scout <sup>db</sup>	AH	✓	✓	✓	MR	M	M	ML	MRMS	MS	W	A	MI	MT-T
LRPB Trojan <sup>db</sup>	APW		✓	✓	MR	M-S	M	M	MR	MSS	W	A	MI	MT-MI
Mace <sup>db</sup>	AH	✓	✓		MR	Q-M	M	M	MR	MSS	W	A	MT	MT-T
Razor CL Plus <sup>db</sup>	ASW	✓	✓		MR	Q-M	M	M	MR	MSS <sub>p</sub>	W	A	MT	MT-T
RockStar <sup>db</sup>	AH	✓	✓	✓	MR	M-S	M	M	MR	-	W	A	-	-
Scepter <sup>db</sup>	AH	✓	✓		MR	M	M	MS	MR	MSS	W	A	MT	MT-T
Sheriff CL Plus <sup>db</sup>	APW		✓	✓	MR	M-S	M	M	MR	-	W	A	-	-
Sunblade CL Plus <sup>db</sup>	AH	✓	✓	✓	MS	M	M	MS	MR	-	W	A	-	-
Sunflex <sup>db</sup>	AH		✓	✓	MR	S	S	MS	MR	-	W	A	-	-
Sunlamb <sup>db</sup>	ASW		✓	✓	MR	VS	M	M	MR	MS <sub>p</sub>	W	AL	I	MI
Sunmaster <sup>db</sup>	NYC	✓	✓	✓	MRMS	M	M	M	MR	SVSp	W	A	-	-
Suntop <sup>db</sup>	AH	✓	✓	✓	MS	M	MT	M	MR	SVS	W	A	I	MT
Valiant <sup>db</sup> CL Plus	AH	✓	✓	✓	MR	S	M	L	MRMS	-	W	A	-	-
Vixen <sup>db</sup>	AH	✓	✓	✓	MR	Q	M	M	MR	-	W	A	-	-
Wallup <sup>db</sup>	AH		✓		MR	Q-M	S	MS	MR	S	W	A	I	I
Yitpi <sup>db</sup>	AH	✓	✓		MR	M-S	T	ML	MS	MS	W	A	MT	MT-T

Table 3, cont. next page

Table 3: Agronomic characteristics of wheat varieties (continued).

	Maximum quality southern zone	Rainfall			Screenings	Maturity	Height	Coleoptile length	Lodging	Sprouting	Head type		Soil tolerance	
		Low <350mm	Med 350 to 500mm	High >500mm							Colour	Awn	Boron	Acid
SPECIALTY WHEAT														
LRPB Oryx <sup>Ⓛ</sup>	ASFT		✓		MR	M	M	MS	MR	MSS	W	A	I	MI-I
LRPB Parakeet <sup>Ⓛ</sup>	ANW		✓		MR	M	MT	M	MRMS	MSS	W	A	I	MT-MI
DURUM WHEAT														
Bitallij <sup>Ⓛ</sup>	ADR	✓	✓	✓	MR	Q-M	M	M	-	-	W	A	-	-
DBA Artemis <sup>Ⓛ</sup>	ADR		✓	✓	R	M	-	-	-	-	W	A	-	-
DBA Aurora <sup>Ⓛ</sup>	ADR		✓	✓	R	M	M	ML	MR	MR	W	A	MT	-
DBA Mataroi <sup>Ⓛ</sup>	ADR		✓		MR	Q	M	-	-	-	W	A	-	-
DBA Spes <sup>Ⓛ</sup>	ADR		✓	✓	R	M	-	-	-	-	W	A	-	-
Westcourt <sup>Ⓛ</sup>	ADR	✓	✓	✓	MR	M	T	ML	-	-	W	A	-	-
FEED WHEAT														
Anapurna	Feed			✓	-	M-S (+W)	S	M	R	R	R	A	-	-
LRPB Beaufort <sup>Ⓛ</sup>	Feed		✓	✓	-	S-VS	M	-	MRMS	MR	R	AL	-	MT
Longsword <sup>Ⓛ</sup>	Feed*	✓	✓	✓	MR	Q (+W)	M	M	MR	-	W	A	MT <sub>p</sub>	MT <sub>p</sub>
Manning <sup>Ⓛ</sup>	Feed			✓	-	S (+W)	-	-	-	MSS <sub>p</sub>	W	AL	-	-
RGT Accroc	Feed		✓	✓	-	M-S (+W)	M	-	R	R	R	A	-	-
RGT Calabro	Feed			✓	-	S (+W)	M	-	R	R	R	A	-	-
RGT Cesario	Feed		✓	✓	-	M-S (+W)	M	-	R	R	R	AL	-	-
RGT Zanzibar	Feed	✓	✓	✓	-	VS	MT	-	-	R	R	A	-	-
Severn	Feed		✓	✓	-	Q-M (+W)	MT	-	-	-	W	AL	-	-
SF Adagio	Feed		✓	✓	-	S (+W)	-	-	-	R <sub>p</sub>	R	A	-	-
SQP Revenue <sup>Ⓛ</sup>	Feed			✓	-	S (+W)	S	-	-	R <sub>p</sub>	R	AL	-	-

NOTE: New maturity classifications have been assigned based on the [Industry Guide for Wheat Variety Maturity Description](#) by Australian Crop Breeders Ltd to achieve consistent maturity descriptions across all cereals.

Maturity: VQ = very quick, Q = quick, M = mid, S = slow, VS = very slow, (+W) = winter wheat. Height: S = short, M = medium, T = tall.

Coleoptile length: S = short, M = medium, L = long. Soil tolerance: I = intolerant, T = tolerant.

Head colour: W = white, R = red. Head type: A = awned, AL = awnless.

Screening, lodging and sprouting resistance = see key used in Table 5.

Maximum quality abbreviations listed on page 8.

\* denotes default classification

- denotes no rating available

<sub>p</sub> = provisional ratings – treat with caution.

**Table 4: Domestic flour millers' assessment – Southern Zone wheat varieties.**

HARD WHEAT	Max class grade	End product category		Comment	
		Plant bakery	Artisan breads		
Ascot <sup>db</sup>	APW	2	1	Acceptable APW. Good milling extraction. Acceptable/variable bake performance.	
Ballista <sup>db</sup>	AH	2	2	Acceptable domestic AH. High dough resistance and good stability. May suit specialist application.	
Beckom <sup>db</sup>	AH	2	2	Some interest. Marginal long mix time and tough dough.	
Boree <sup>db</sup>	AH	1	3	Some domestic interest. Marginal water absorption, acceptable bake performance. Suit specialist bakery application.	
Calibre <sup>db</sup>	AH	2	2	Some domestic interest. Good water absorption, strong dough, long mix time. Acceptable bake performance.	
Catapult <sup>db</sup>	AH	2	2	Suit domestic mills. Good balanced dough. Acceptable bakery water absorption and performance.	
Chief CL Plus <sup>db</sup>	APW	2	1	Acceptable APW. Low water absorption, short mix time. Acceptable rapid bake performance.	
Coolah <sup>db</sup>	AH	2	2	Acceptable for domestic mills. Acceptable water absorption, marginal long mix requirement and strong dough resistance, acceptable bake performance.	
Coota <sup>db</sup>	AH	3	2	Acceptable domestic AH. Reduced mix time and acceptable bake results.	
Corack <sup>db</sup>	APW	2	1	Acceptable APW quality. Suit domestic mills.	
Cosmick <sup>db</sup>	AH	3	2	Acceptable AH for domestic market.	
Cutlass <sup>db</sup>	APW	3	1	Suit domestic application. Good water absorption and acceptable bake.	
Denison <sup>db</sup>	APW	3	1	Acceptable domestic APW. Good milling extraction.	
DS Bennett <sup>db</sup>	ASW	2	1	Acceptable ASW. Low water absorption and dough strength, acceptable mix time and marginal bake performance.	
DS Darwin <sup>db</sup>	AH	2	1	Limited data available. High water absorption may suit domestic mills as blend.	
DS Pascal <sup>db</sup>	APW	2	1	Limited data available. Potentially limited domestic interest.	
EGA Gregory <sup>db</sup>	APW*	2	1	Limited data but indicate suitable for domestic APW.	
EGA Wedgetail <sup>db</sup>	APW*	1	2	Over-strong APW. Long mix requirement. Appears to suit specialist segregation.	
EG Titanium	AH	2	2	Suit domestic mills. Marginal long mix requirement. Acceptable water absorption.	
Elmore CL Plus <sup>db</sup>	AH	3	1	Good water absorption and acceptable bake performance. Acceptable AH quality.	
Emu Rock <sup>db</sup>	AH	3	2	Acceptable AH. Marginal long mix requirement.	
Forrest <sup>db</sup>	APW	2	1	Acceptable APW quality for domestic market.	
Grenade CL Plus <sup>db</sup>	AH	2	2	Marginal strong. Limited domestic interest.	
Hammer CL Plus <sup>db</sup>	AH	2	2	Acceptable domestic AH. Good bake results.	
Illabo <sup>db</sup>	AH	1	2	Strong dough characteristics. Long mix requirement in bakery. Suit specialist bakery application only.	
Kord CL Plus <sup>db</sup>	AH	3	1	Appears suitable for domestic mills.	
LRPB Cobra <sup>db</sup>	AH	3	1	Appears acceptable. Some concerns over low viscosity and high yellow pigment.	
LRPB Kittyhawk <sup>db</sup>	AH	2	2	Acceptable for domestic mills. Good water absorption and strong doughs. Acceptable bake performance.	
LRPB Lancer <sup>db</sup>	AH	2	1	Acceptable APW. Good water absorption and bake volume, but marginal long mix time.	
LRPB Nighthawk <sup>db</sup>	APW	3	1	Suit Domestic Mills. Good water absorption, short mix requirement. Acceptable bake performance.	
LRPB Scout <sup>db</sup>	AH	2	1	Suitable AH, marginal long mix time.	
LRPB Trojan <sup>db</sup>	APW	2	1	Some interest from domestic mills. Marginal water absorption, long mix time but good bake volume.	
Mace <sup>db</sup>	AH	3	1	Suitable as domestic AH.	
Razor CL Plus <sup>db</sup>	ASW	2	1	Acceptable ASW. Good water absorption, short mix time, short dough extensibility and low dough strength.	
RockStar <sup>db</sup>	AH	2	2	Suit domestic mills. Marginal bakery water absorption but acceptable bakery performance.	
Scepter <sup>db</sup>	AH	2	1	Suit domestic application. Acceptable AH quality.	
Sheriff CL Plus <sup>db</sup>	APW	1	1	Suit domestic mills. Acceptable APW. Marginal water absorption and extraction. Short mix time, marginal extensibility and acceptable bake performance.	
Sunblade CL Plus <sup>db</sup>	AH	3	1	Acceptable domestic AH. Good milling extraction and rapid bake performance.	
Sunflex <sup>db</sup>	AH	2	1	Acceptable domestic AH. Good water absorption and balanced dough. Acceptable bake performance.	
Sunlamb <sup>db</sup>	ASW	2	1	Limited interest. Poor extraction but acceptable rapid bake.	
Sunmaster <sup>db</sup>	AH	1	2	Some domestic interest. Good water absorption, long mix time, strong dough. Suit specialist bakery application.	
Suntop <sup>db</sup>	AH	2	2	Strong AH. Good water absorption, but marginally long mix time.	
Valiant <sup>db</sup> CL Plus	AH	3	1	Suitable as domestic AH. Balanced dough properties.	
Vixen <sup>db</sup>	AH	3	2	Suit domestic mills. Acceptable AH. Good extraction, good water absorption and balanced dough. Acceptable bake performance.	
Wallup <sup>db</sup>	AH	1	2	Long mix requirement. Suit specialist segregation. Limited interest from domestic millers.	
Yitpi <sup>db</sup>	AH	3	2	Acceptable AH quality.	
SOFT OR NOODLE WHEAT	Max class grade	End product category			
		Biscuit	Cake	Hot plate goods	
LRPB Oryx <sup>db</sup>	SF1	3	2	1	Acceptable biscuit quality.
LRPB Parakeet <sup>db</sup>	ANW	2	2	3	Acceptable domestic noodle applications.

Data Source: Interpretation provided by David Hogan, Quality Manager for Laucke Flour Mills (2021).

On the quality scale, a rating of 3 is preferred for a particular varietal end-use, 3 preferred, 2 suitable, 1 not suitable.

\* denotes default classification. - denotes no rating available.

Maximum class grade abbreviations listed on page 8.



Table 5: Disease resistance ratings of wheat varieties.

	Rust			Yellow leaf spot	Septoria tritici	Powdery mildew	CCN res	Root lesion nematode		Crown rot	Common root rot	Black tip (Black point)	Flag smut
	Stem	Stripe	Leaf					P. neglectus	P. thornei				
BREAD WHEAT													
Ascot <sup>db</sup>	MRMS	MS	RMR	MRMS	S	SVS	MRMS	S	S	MSS	MS	MSS	MS
Ballista <sup>db</sup>	RMR	MSS	S	MSS	SVS	SVS	MRMS	S	MS	SVSp	MS	MRMSp	SVS
Beckom <sup>db</sup>	MRMS	MRMS	MSS	MSS	S	S	R	S	MSS	S	MSS	MRMS	MRMS
Boree <sup>db</sup>	MRp	MRMS/Sp	Sp	MRMSp	-	VS	-	-	-	-	-	-	-
Calibre <sup>db</sup>	RMRp	MSp	Sp	MSp	-	S	-	-	-	-	-	-	-
Catapult <sup>db</sup>	MR	MRMS/ SVSp	S	MRMS	MSS	S	R	S	MS	MSSp	MS	MSS	MS
Chief CL Plus <sup>db</sup>	MR	S	MR	MRMS	MSS	SVS	MS	MRMS	MSS	MSS	MS	MS	SVS
Coolah <sup>db</sup>	MR	RMR	RMR/MS	MSS	MSS	-	S	S	MS	MSS	S	S	R
Coota <sup>db</sup>	RMR	MR/MSp	MS	MSS	MSS	S	MR	MR	MS	MSSp	MS	MRp	VS
Corack <sup>db</sup>	MR	MS/SVSp	SVS	MRMS	S	VS	RMR	MSS	MSS	S	MS	S	S
Cosmick <sup>db</sup>	MS	MSS	SVS	MRMS	S	MS	S	S	MSS	S	MSS	MRMS	SVS
Cutlass <sup>db</sup>	R	MS	RMR	MSS	MSS	S	MR	MSS	MSS	S	MS	MS	MSS
Denison <sup>db</sup>	MS	MS/Sp	S	MRMS	MSS	SVS	MSS	S	S	SVSp	MS	MSp	MS
DS Bennett <sup>db</sup>	MRMS	S	SVS	MRMS	MSS	R	S	S	S	VS	S	MSS	SVS
DS Darwin <sup>db</sup>	MRMS	MS/Sp	MRMS/ SVS	S	S	-	MSS	S	S	S	MSS	MS	MR
DS Pascal <sup>db</sup>	MSS	RMR	MS	MS	MSS	RMR	S	S	S	S	MS	MS	S
EGA Gregory <sup>db</sup>	MR	MR	RMR/MS	S	MSS	-	S	S	MSS	S	MSS	MSS	MSS
EGA Wedgetail <sup>db</sup>	MRMS	MS	MSS	MSS	MSS	-	S	S	VS	S	-	MS	-
EG Titanium	MS	MR	MSS	MSS	MSS	S	R	S	S	MSS	MSS	MSS	MR
Elmore CL Plus <sup>db</sup>	MR	MR	RMR	S	MSS	-	S	S	S	S	S	MS	MSS
Emu Rock <sup>db</sup>	MS	S	SVS	MRMS	SVS	MSS	S	MSS	S	MSS	MS	MSS	MS
Grenade CL Plus <sup>db</sup>	MR	MRMS	S	S	S	MS	R	MSS	S	S	MS	MSS	MR
Hammer CL Plus <sup>db</sup>	MR	MS	S	MRMS	MSS	MSS	MRMS	MS	S	MSSp	MSS	MRMSp	RMR
Illabo <sup>db</sup>	MRMS	MR	S	MS	MSS	R	MRMS	S	MSS	S	MSS	MRMS	R
Kord CL Plus <sup>db</sup>	-	MR/MSp	S	MSS	S	-	MR	MSS	MSS	S	-	-	-
LRPB Cobra <sup>db</sup>	MR	MSS	MR/S	MRMS	MSS	MSS	MS	MSS	MSS	S	MS	MSS	S
LRPB Kittyhawk <sup>db</sup>	MRMS	RMR	MRMS	MRMS	MRMS	MS	S	S	S	SVS	S	MS	RMR
LRPB Lancer <sup>db</sup>	R	RMR	RMR/ MRMS	MRMS	MS	-	S	S	MS	MSS	S	MRMS	MSS
LRPB Nighthawk <sup>db</sup>	RMR	MR	MSS	MRMS	MSS	SVS	MS	MSS	MS	MSS	MSS	MS	MSS
LRPB Scout <sup>db</sup>	MRMS	MRMS	MSS	SVS	S	MRMS	R	S	MSS	S	S	S	MR
LRPB Trojan <sup>db</sup>	MRMS	SVS	MR/MS	MSS	MS	S	MS	MSS	MSS	MS	MS	MS	SVS
Mace <sup>db</sup>	MRMS	SVS	MSS	MRMS	S	MSS	MRMS	MS	MS	S	MS	MRMS	S
Razor CL Plus <sup>db</sup>	MR	MS	S	MSS	SVS	MSS	MR	S	MS	S	MSS	MS	RMR
RockStar <sup>db</sup>	MR	MRMS/ Sp	S	MRMS	MSS	SVS	MSS	MRMS	MS	S	MSS	MSS	VS
Scepter <sup>db</sup>	MRMS	MSS	MSS	MRMS	S	SVS	MRMS	S	MSS	MSS	MS	MS	MSS
Sheriff CL Plus <sup>db</sup>	MS	MS/SVSp	SVS	MRMS	S	SVS	MS	MRMS	MRMS	S	MS	MS	S
Sunblade CL Plus <sup>db</sup>	MS	MR	MRMS/ MSSp	MSS	S	SVS	MS	MSS	MRMS	Sp	S	MRp	RMR
Sunflex <sup>db</sup>	MR	RMR	RMR/S	MS	MSS	S	MS	S	MSS	MSSp	S	MSS	MRMS
Sunlamb <sup>db</sup>	RMR	MR	MS	MRMS	MR	-	MR	MSS	MSS	S	MS	MS	S
Sunmaster <sup>db</sup>	MS	MR	-	MSS	S	SVS	MSS	MS	MS	Sp	MS	RMRp	MRMS
Suntop <sup>db</sup>	MRMS	MRMS	MR	MSS	MSS	-	S	S	MRMS	MSS	MS	MSS	R
Valiant <sup>db</sup> CL Plus	MRp	MSSp	MRMSp	MRMSp	-	SVS	-	-	-	-	-	-	-
Vixen <sup>db</sup>	MRMS	MRMS/ SVSp	SVS	MRMS	S	S	MSS	MRMS	MS	S	MS	MSS	SVS
Wallup <sup>db</sup>	MRMS	MRMS/ MSSp	SVS	MSS	S	MR	MR	MS	MRMS	S	MS	MSS	SVS
Yitpi <sup>db</sup>	S	MS/Sp	S	SVS	MSS	MS	MR	MSS	S	S	MS	MS	MR
SPECIALTY WHEAT													
LRPB Oryx <sup>db</sup>	MR	MR	RMR/S	MSS	SVS	-	S	MSS	MSS	MSS	MSS	MS	VS
LRPB Parakeet <sup>db</sup>	MR	RMR	R	MSS	S	SVS	MS	MRMS	S	MSS	MRMS	MS	MSS

Table 5, cont. next page

**Table 5: Disease resistance ratings of wheat varieties (continued).**

	Rust			Yellow leaf spot	Septoria tritici	Powdery mildew	CCN res	Root lesion nematode		Crown rot	Common root rot	Black tip (Black point)	Flag smut
	Stem	Stripe	Leaf					P. neglectus	P. thornei				
DURUM WHEAT													
Bitali <sup>db</sup>	RMR	MS	MR	MR	MRMS	S	MSS	MSS	RMR	SVS	MS	MS	R
DBA Artemis <sup>db</sup>	MR	MR/MS <sub>p</sub>	RMR	MRMS	MRMS	S	MS	MS	MR	VS	MS	MS	MR
DBA Aurora <sup>db</sup>	RMR	MR	R	MRMS	MR/S	MSS	MSS	MRMS	RMR	VS	MSS	MS	-
DBA Mataroi <sup>db</sup>	MR	MSS	MR	MRMS	MR/Sp	S	MS	MS	RMR	SVS	MS	MRMS	R
DBA Spes <sup>db</sup>	R	MS	R	MRMS	MRMS/ SVS	MSS	MS	MRMS	RMR	VS	MS	MS	R
Westcourt <sup>db</sup>	RMR	MR	RMR	MRMS	MS	S	MSS	MS	MR	VS	MRMS	MSS	R
FEED WHEAT													
Anapurna	MSS	RMR	MS	MRMS	MRMS	MR	MRMS	MS	MS <sub>p</sub>	SVSp	MSS	Sp	R
LRPB Beaufort <sup>db</sup>	SVS	RMR	S	MRMS	MSS	-	S	MS	MSS	S	MSS	MRMS	R
Longsword <sup>db</sup>	MR	S	MR/S	MRMS	MSS	-	MRMS	MRMS	MRMS	MSS	MS	MS	MRMS
Manning <sup>db</sup>	MR	RMR	MSS	MRMS	MRMS	MS	S	MSS	S	VS	SVS	S	R
RGT Accroc	MS	RMR	SVS	MRMS	MRMS	MSS	S	S	MSS	SVS	S	MRMS	SVS
RGT Calabro	MS	RMR	MSS	MR	MRMS	RMR	S	S	MS <sub>p</sub>	SVS	MSS	MS	RMR
RGT Cesario	R <sub>p</sub>	RMR <sub>p</sub>	RMR <sub>p</sub>	MR <sub>p</sub>	MR <sub>p</sub>	RMR	-	-	-	-	-	-	-
RGT Zanzibar	VS	RMR	SVS	MS	S	MRMS	MSS	S	MS <sub>p</sub>	S	S	MRMS	SVS
Severn	MS	MR <sub>p</sub>	MS	MRMS	MS	-	S	S	MR	MSS <sub>p</sub>	MSS	MR	MSS
SF Adagio	SVS	RMR	S	MR	MRMS	R	S	MS	MSS	SVS	MSS	MRMS	MS
SQP Revenue <sup>db</sup>	RMR	RMR	VS	MRMS	MSS	R	S	S	S	S	SVS	MS	S

Data Source: [Agriculture Victoria Cereal Disease Guide \(2021\)](#), [NVT Disease Ratings \(2021\)](#).# Varieties marked may be more susceptible if more virulent strains are present. *p* = These ratings are provisional – treat with caution

R = Resistant RMR = Resistant to moderately resistant MR = Moderately resistant MRMS = Moderately resistant to moderately susceptible MS = Moderately susceptible

MSS = Moderately susceptible to susceptible S = Susceptible SVS = Susceptible to very susceptible VS = Very susceptible.

/ = used to show the reaction of both the dominant strain (present in Victoria) on the left and the minor strain (present in NSW in 2020) on the right.

- denotes no rating available.

Table 6: Wheat disease guide summary.

Disease	Organism	Symptoms	Occurrence	Inoculum source	Control
FOLIAR					
Leaf rust	<i>Puccinia triticina</i>	Small orange-brown powdery pustules on leaf.	Develops in spring. Favoured by mild (15°C–22°C) moist weather.	Airborne spores from living wheat plants.	Resistant varieties, control volunteer summer-autumn wheat. Seed dressings and foliar fungicides.
Stem rust	<i>Puccinia graminis</i> f. sp. <i>tritici</i>	Red-brown, powdery, oblong pustules with tattered torn edges on leaf and stem.	Can develop from mid-spring into summer. Favoured by warm (15°C–30°C) humid conditions.	Airborne spores from living plants (wheat, barley, durum and triticale).	Resistant varieties, control volunteer summer-autumn wheat and barley. Foliar fungicides.
Stripe rust	<i>Puccinia striiformis</i> f. sp. <i>tritici</i>	Yellow powdery pustules often in stripes on leaves.	Can develop throughout the growing season. Favoured by cool (8°C–15°C), moist weather.	Airborne spores from living wheat and barley grass plants.	Resistant varieties, fungicides (seed, fertiliser and foliar), control volunteer summer- autumn wheat.
Septoria tritici blotch	<i>Zymoseptoria tritici</i>	Leaf lesions with minute black spots, leaf death.	More common in early sown crops and in wet springs.	Initially airborne spores released from stubble, and then spread by rain-splashed spores within crop.	Resistant varieties, foliar fungicides, seed treatments, stubble removal.
Yellow spot	<i>Pyrenophora tritici-repentis</i>	Leaf lesions often with yellow border, leaf death.	More severe in close rotations, when wheat is sown into wheat stubble.	Ascospores from stubble infect plants. Then secondary spread is by airborne spores in spring.	Stubble removal, crop rotation, foliar fungicides, resistant varieties.
BYDV	Barley yellow dwarf virus	Yellowing, dwarfing of infected plants, interveinal chlorosis, reduced seed set.	Most common in perennial grass pastures and in early sown crops.	A virus transmitted by aphids from infected grasses and cereals.	Resistant varieties, seed treatments and/or insecticide treatments to control aphids.
GRAIN					
Bunt	<i>Tilletia laevis</i> , <i>T. tritici</i>	Seed contains a black, foul-smelling mass of spores. Affected grain is not accepted at silos.	Potentially region wide.	Spores on seed coat infect seedling before it emerges.	Seed-applied fungicide.
Flag smut	<i>Urocystis agropyri</i>	Stunted plants with black, powdery streaks in leaves.	Most likely in crops sown early in warm soils.	Soil and seed-borne spores.	Resistant varieties, seed-applied fungicide.
Loose smut	<i>Ustilago tritici</i>	Black powdery heads on diseased plants.	Region wide.	Infected seed is the predominant source.	Seed-applied fungicide.
ROOT/CROWN					
Common root rot	<i>Bipolaris sorokiniana</i>	Browning of the roots, sub-crown internode and the stem base. Brown spots on leaves. White heads and pinched grain.	Scattered through crop.	Soil-borne on grass and cereal residues. Also as spores in the soil.	Crop rotation, one year free from hosts.
Crown rot	<i>Fusarium pseudograminearum</i> , <i>F. culmorum</i>	Browning of stem bases, crown and sometimes roots. White heads and pinched grain.	More severe following a wet winter and dry spring, especially on heavy soils which are poorly drained.	Soil-borne on grass and cereal residues.	Crop rotation. Avoid highly susceptible varieties, especially durum wheat.
Cereal cyst nematode (CCN)	<i>Heterodera avenae</i>	Yellow, stunted plants with knotted roots, often in patches.	Light soils and well-structured clays where cereals are common.	Present in most soils in the southern region of Australia.	Resistant varieties, two-year break from susceptible cereals and grasses, in particular wild oats.
Rhizoctonia bare patch	<i>Rhizoctonia solani</i> (AG 8)	Patches of stunted plants with yellow-red erect leaves. Spear-tipped roots.	Associated with reduced tillage and poor weed control in autumn. Discouraged by soils with high organic matter.	Fungus carries over in organic matter in the soil. Wide host range.	Pre-cropping weed control, chemical fallow, cultivation, modified sowing equipment. Group B herbicides may increase severity on some soil types. Read the label.
Root lesion nematode	<i>Pratylenchus thornei</i> , <i>P. neglectus</i>	Reduced tillering, ill thrift; a lack of root branching and lesions on roots.	Favoured by wheat in rotation with chickpea, medic and vetch.	Survive as dormant nematodes in the soil.	Crop rotation using resistant crops and resistant varieties.
Take-all	<i>Gaeumannomyces graminis</i> var. <i>tritici</i>	Blackening of roots, stem bases and crown. Plant stunting with white heads and pinched grain.	Favoured by a wet spring with a dry finish.	Soil-borne on grass hosts and cereal residues.	Crop rotation, at least one year free of hosts (cereals and grasses, especially barley grass). Fungicide applied to seed or fertiliser.

Data Sources: This table has been developed from information in the publications Wallwork H (2000) (Ed) *Cereal Root and Crown Diseases* (Grains Research and Development Corporation, SARDI) and Wallwork H (2000) (Ed) *Cereal Leaf and Stem Diseases* (Grains Research and Development Corporation, SARDI). Reviewed by Mark McLean, Agriculture Victoria (2021).

**Table 7: Mallee and Wimmera (main season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

			MALLEE					WIMMERA					
Year			2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)			4.03	3.26	1.00	3.22	3.38		6.72	4.86	1.95	4.31	3.83
	Quality	No. trials	6	7	4	5	8	No. trials	5	5	3	4	3
BREAD WHEAT													
Ascot <sup>db</sup>	APW	17	-	-	97	101	102	10	-	-	105	98	104
Axe <sup>db</sup>	AH	17	86	93	103	-	-	13	89	94	100	-	-
Ballista <sup>db</sup>	AH	13	-	-	-	116	110	7	-	-	-	114	116
Beckom <sup>db</sup>	AH	30	107	104	103	109	106	20	105	103	102	103	106
Boree <sup>db</sup>	NYC	8	-	-	-	-	108	3	-	-	-	-	110
Calibre <sup>db</sup>	AH	8	-	-	-	-	110	3	-	-	-	-	114
Catapult <sup>db</sup>	AH	17	-	-	108	109	105	10	-	-	105	107	111
Chief CL Plus <sup>db</sup>	APW	23	91	-	99	100	100	20	91	100	87	99	90
Cobalt <sup>db</sup>	APW	9	-	-	106	97	-	3	-	-	104	-	-
Coolah <sup>db</sup>	AH	0	-	-	-	-	-	6	-	-	101	90	-
Coota <sup>db</sup>	AH	0	-	-	-	-	-	7	-	-	-	98	107
Corack <sup>db</sup>	APW	30	89	105	102	103	103	20	100	107	90	104	84
Cosmick <sup>db</sup>	AH	22	106	100	102	103	-	13	103	100	105	-	-
Cutlass <sup>db</sup>	APW	30	104	102	95	95	100	20	99	99	95	100	104
Denison <sup>db</sup>	APW	0	-	-	-	-	-	3	-	-	-	-	111
Derrimut <sup>db</sup>	AH	6	102	-	-	-	-	17	98	96	101	97	-
DS Darwin <sup>db</sup>	AH	22	94	94	91	90	-	17	97	95	94	94	-
EG Titanium	AH	8	-	-	-	-	97	8	-	90	-	-	98
Elmore CL Plus <sup>db</sup>	AH	30	99	93	91	93	96	20	96	90	98	91	99
Emu Rock <sup>db</sup>	AH	30	98	95	104	106	99	20	98	96	105	96	95
Estoc <sup>db</sup>	APW	17	99	98	97	-	-	13	98	98	99	-	-
Gladius <sup>db</sup>	AH	17	97	96	101	-	-	13	95	95	103	-	-
Grenade CL Plus <sup>db</sup>	AH	30	94	94	99	97	95	20	92	92	101	93	96
Hammer CL Plus <sup>db</sup>	AH	13	-	-	-	102	98	3	-	-	-	-	100
Hatchet CL Plus <sup>db</sup>	AH	13	93	92	-	-	-	10	93	91	-	-	-
Kord CL Plus <sup>db</sup>	AH	30	92	95	98	92	93	20	91	94	97	95	94
LRPB Arrow <sup>db</sup>	AH	22	99	103	100	107	-	17	102	102	96	100	-
LRPB Cobra <sup>db</sup>	AH	17	101	98	89	-	-	17	106	98	93	96	-
LRPB Phantom <sup>db</sup>	AH	22	103	96	95	93	-	17	97	94	101	95	-
LRPB Scout <sup>db</sup>	AH	30	110	97	100	103	101	20	106	97	110	98	108
LRPB Trojan <sup>db</sup>	APW	30	107	105	97	98	104	20	107	106	98	105	107
Mace <sup>db</sup>	AH	30	95	104	107	106	102	20	98	105	99	104	95
Razor CL Plus <sup>db</sup>	ASW	24	-	103	108	110	104	15	-	104	103	103	97
RockStar <sup>db</sup>	AH	13	-	-	-	113	109	7	-	-	-	111	117
Scepter <sup>db</sup>	AH	30	105	111	114	114	107	20	104	112	105	112	107
Sheriff CL Plus <sup>db</sup>	APW	23	103		103	105	104	15	102		100	103	103
Shield <sup>db</sup>	AH	21	102	95	103	104	-	17	95	93	107	95	-
Sunblade CL Plus <sup>db</sup>	AH	13	-	-	-	109	106	7	-	-	-	101	110
Valiant <sup>db</sup> CL Plus	AH	0	-	-	-	-	-	3	-	-	-	-	105
Vixen <sup>db</sup>	AH	30	110	108	114	120	111	20	113	112	111	111	104
Wallup <sup>db</sup>	AH	9	-	-	91	90	-	17	95	95	89	93	-
Yitpi <sup>db</sup>	AH	30	98	95	94	91	94	20	93	93	96	94	100
SPECIALTY WHEAT													
LRPB Impala <sup>db</sup>	ASFT	0	-	-	-	-	-	20	95	93	101	95	103
LRPB Oryx <sup>db</sup>	ASFT	0	-	-	-	-	-	12	-	94	-	94	97
LRPB Parakeet <sup>db</sup>	ANW	0	-	-	-	-	-	12	-	92	-	92	95
FEED WHEAT													
LRPB Beaufort <sup>db</sup>	FEED	0	-	-	-	-	-	3	-	-	-	-	109
RGT Zanzibar	FEED	0	-	-	-	-	-	10	105	94	-	-	-
Tenfour <sup>db</sup>	FEED	9	-	-	98	106	-	17	107	104	96	102	-

- denotes no data available.

Maximum quality abbreviations listed on page 8.

Data Source: National Variety Trials (2016–2020).



**Table 8: North Central and North East (main season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

Year		NORTH CENTRAL					NORTH EAST				
			2016	2017	2019	2020		2016	2017	2019	2020
Mean yield (t/ha)			7.34	3.58	3.04	4.35		6.81	4.97	4.19	5.84
	Quality	No. trials	2	2	3	2	No. trials	4	4	4	3
BREAD WHEAT											
Ascot <sup>db</sup>	APW	5	-	-	106	100	7	-	-	107	104
Axe <sup>db</sup>	AH	4	86	98	-	-	8	83	98	-	-
Ballista <sup>db</sup>	AH	5	-	-	122	110	7	-	-	114	104
Beckom <sup>db</sup>	AH	9	106	109	110	108	15	106	109	110	109
Boree <sup>db</sup>	NYC	2	-	-	-	112	3	-	-	-	108
Calibre <sup>db</sup>	AH	2	-	-	-	115	3	-	-	-	107
Catapult <sup>db</sup>	AH	5	-	-	116	111	7	-	-	111	107
Chief CL Plus <sup>db</sup>	APW	5	-	-	104	99	7	-	-	104	100
Cobalt <sup>db</sup>	APW	6	108	104	104	-	9	109	105	103	-
Condo <sup>db</sup>	AH	6	99	96	97	-	12	98	100	96	-
Coolah <sup>db</sup>	AH	9	100	105	89	97	15	106	100	96	101
Coota <sup>db</sup>	AH	5	-	-	103	101	7	-	-	104	106
Corack <sup>db</sup>	APW	9	98	107	108	104	15	97	107	106	101
Cosmick <sup>db</sup>	AH	8	104	101	102	104	9	104	101	101	-
Cutlass <sup>db</sup>	APW	9	104	104	93	103	15	108	103	98	107
Denison <sup>db</sup>	APW	2	-	-	-	110	3	-	-	-	110
Derrimut <sup>db</sup>	AH	7	100	94	99	-	12	97	96	98	-
DS Bennett <sup>db</sup>	ASW	4	-	95	81	-	12	114	93	89	-
DS Darwin <sup>db</sup>	AH	7	97	95	98	-	12	96	97	99	-
DS Pascal <sup>db</sup>	APW	4	-	99	81	-	12	100	88	90	-
EG Titanium	AH	6	100	85	89	-	7	-	97	94	99
EGA Gregory <sup>db</sup>	APW*	8	94	98	80	94	15	100	94	85	94
Elmore CL Plus <sup>db</sup>	AH	9	98	96	89	95	15	100	94	93	97
Emu Rock <sup>db</sup>	AH	3	99	-	110	-	4	96	-	-	-
Estoc <sup>db</sup>	APW	4	100	101	-	-	8	100	102	-	-
Gladius <sup>db</sup>	AH	4	97	93	-	-	8	94	96	-	-
Grenade CL Plus <sup>db</sup>	AH	9	96	95	103	96	15	94	95	99	93
Hammer CL Plus <sup>db</sup>	AH	2	-	-	-	104	3	-	-	-	96
Hatchet CL Plus <sup>db</sup>	AH	4	93	92	-	-	0	-	-	-	-
Kord CL Plus <sup>db</sup>	AH	9	94	97	101	98	14	92	98	97	94
LRPB Arrow <sup>db</sup>	AH	7	100	101	108	-	12	98	103	106	-
LRPB Cobra <sup>db</sup>	AH	7	105	98	101	-	15	106	100	104	106
LRPB Havoc <sup>db</sup>	AH	7	97	101	113	-	11	93	105	109	-
LRPB Phantom <sup>db</sup>	AH	7	103	102	95	-	10	105	100	98	-
LRPB Scout <sup>db</sup>	AH	9	106	103	107	107	15	105	102	104	104
LRPB Trojan <sup>db</sup>	APW	9	105	104	100	104	15	105	104	103	107
Mace <sup>db</sup>	AH	9	98	103	113	102	15	95	105	110	100
QAL 2000 <sup>db</sup>	AGP*	2	104	-	-	-	9	106	-	95	100
Razor CL Plus <sup>db</sup>	ASW	7	-	104	117	102	11	-	105	110	97
RockStar <sup>db</sup>	AH	5	-	-	120	109	7	-	-	115	107
Scepter <sup>db</sup>	AH	9	107	112	121	112	15	104	112	116	107
Sheriff CL Plus <sup>db</sup>	APW	5	-	-	115	105	7	-	-	111	103
Sunblade CL Plus <sup>db</sup>	AH	5	-	-	106	104	7	-	-	108	109
Sunmaster <sup>db</sup>	NYC	2	-	-	-	105	3	-	-	-	112
Sunprime <sup>db</sup>	AH	2	-	-	101	-	1	-	-	99	-
Suntop <sup>db</sup>	AH	6	95	105	95	-	12	99	101	101	-
Valiant <sup>db</sup> CL Plus	AH	2	-	-	-	98	3	-	-	-	102
Vixen <sup>db</sup>	AH	7	-	109	124	115	11	-	113	116	109
Wallup <sup>db</sup>	AH	7	97	95	98	-	12	95	99	99	-
Yitpi <sup>db</sup>	AH	9	97	96	94	101	15	96	96	92	97
SPECIALTY WHEAT											
LRPB Impala <sup>db</sup>	ASFT	9	102	96	100	100	13	102	95	95	93
LRPB Oryx <sup>db</sup>	ASFT	7	-	94	103	100	10	-	98	98	97
LRPB Parakeet <sup>db</sup>	ANW	7	-	92	101	97	11	-	93	96	92

Table 8, cont. next page

**Table 8: North Central and North East (main season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield (continued).**

		NORTH CENTRAL					NORTH EAST				
Year			2016	2017	2019	2020		2016	2017	2019	2020
Mean yield (t/ha)			7.34	3.58	3.04	4.35		6.81	4.97	4.19	5.84
	Quality	No. trials	2	2	3	2	No. trials	4	4	4	3
FEED WHEAT											
DS Faraday <sup>db</sup>	FEED	4	-	99	81	-	11	98	95	86	-
DS Tull <sup>db</sup>	FEED	4	-	94	99	-	11	101	94	96	-
LRPB Beaufort <sup>db</sup>	FEED	4	-	102	-	101	6	-	100	-	106
RGT Calabro	FEED	0	-	-	-	-	3	102	91	88	-
RGT Zanzibar	FEED	8	109	101	84	99	15	116	99	96	112
Severn	FEED	2	-	92	-	-	4	-	92	-	-
Tenfour <sup>db</sup>	FEED	7	104	101	108	-	4	-	-	107	-

NOTE: 2018 North Central and North East data not published due to compromised trials

\* denotes default classification

- denotes no data available

Maximum quality abbreviations listed on page 8.

Data Source: [National Variety Trials](#) (2016–2020).

**Table 9: North East and South West (early season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

		NORTH EAST						SOUTH WEST					
Year			2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)			5.37	5.78	2.71	5.89	6.85		7.24	5.95	5.14	6.14	6.70
	Quality	No. trials	1	1	1	1	2	No. trials	3	2	3	3	2
BREAD WHEAT													
Ascot <sup>db</sup>	APW	2	-	-	-	-	101	2	-	-	-	-	106
Beckom <sup>db</sup>	AH	6	106	108	119	110	101	13	104	106	103	108	108
Bolac <sup>db</sup>	AH	3	99	97	104	-	-	8	99	99	101	-	-
Catapult <sup>db</sup>	AH	4	-	-	123	116	100	8	-	-	109	110	109
Chara	AH	3	100	101	102	-	-	8	92	98	93	-	-
Coolah <sup>db</sup>	AH	6	102	102	106	102	101	11	100	102	100	103	-
Coota <sup>db</sup>	AH	3	-	-	-	112	100	5	-	-	-	108	107
Cutlass <sup>db</sup>	APW	6	106	110	107	111	100	13	99	104	96	96	99
Denison <sup>db</sup>	APW	3	-	-	-	116	102	5	-	-	-	105	105
DS Bennett <sup>db</sup>	ASW	4	103	105	91	103	-	13	113	105	108	104	102
DS Darwin <sup>db</sup>	AH	4	97	94	107	96	-	0	-	-	-	-	-
DS Pascal <sup>db</sup>	APW	6	100	97	100	97	104	13	105	101	106	109	106
EG Jet <sup>db</sup>	APW	3	-	98	98	98	-	10	-	102	106	110	107
EG Titanium	AH	3	-	99	105	99	-	10	-	98	100	97	97
EGA Gregory <sup>db</sup>	APW*	6	96	98	99	98	87	0	-	-	-	-	-
EGA Wedgetail <sup>db</sup>	APW*	6	96	95	86	93	99	13	95	95	95	92	93
Elmore CL Plus <sup>db</sup>	AH	6	98	99	99	99	95	13	94	97	95	93	95
Forrest <sup>db</sup>	APW	4	95	94	79	91	-	11	96	94	95	91	-
Illabo <sup>db</sup>	AH	6	100	97	97	97	109	13	101	101	101	107	105
Kiora <sup>db</sup>	AH	3	98	96	92	-	-	11	97	97	97	97	-
LRPB Kittyhawk <sup>db</sup>	AH	5	95	93	88	-	100	10	93	94	94	-	95
LRPB Lancer <sup>db</sup>	AH	6	97	92	107	94	97	0	-	-	-	-	-
LRPB Nighthawk <sup>db</sup>	AH	4	-	-	91	96	106	8	-	-	97	100	100
LRPB Scout <sup>db</sup>	AH	0	-	-	-	-	-	5	98	100	-	-	-
LRPB Trojan <sup>db</sup>	APW	6	105	106	118	108	100	13	105	106	105	109	108
RockStar <sup>db</sup>	AH	3	-	-	-	114	108	5	-	-	-	121	117
Scepter <sup>db</sup>	AH	2	-	-	121	116	-	6	-	-	104	106	-
Sheriff CL Plus <sup>db</sup>	APW	3	-	-	-	107	101	5	-	-	-	107	106
Sunflex <sup>db</sup>	AH	4	-	-	105	105	109	8	-	-	107	111	108
Sunlamb <sup>db</sup>	ASW	4	93	90	80	88	-	0	-	-	-	-	-
Suntop <sup>db</sup>	AH	3	99	97	-	99	-	0	-	-	-	-	-
Tungsten <sup>db</sup>	AH	2	-	-	-	-	99	0	-	-	-	-	-
Valiant <sup>db</sup> CL Plus	AH	2	-	-	-	-	109	2	-	-	-	-	109
Yitpi <sup>db</sup>	AH	2	-	-	-	-	84	2	-	-	-	-	92
FEED WHEAT													
DS Faraday <sup>db</sup>	FEED	3	96	97	101	-	-	0	-	-	-	-	-
DS Tull <sup>db</sup>	FEED	3	99	99	107	-	-	0	-	-	-	-	-
Longsword <sup>db</sup>	FEED*	6	103	101	106	103	105	13	95	101	95	102	104
LRPB Beaufort <sup>db</sup>	FEED	5	-	113	110	114	115	13	118	113	113	117	113
Manning <sup>db</sup>	FEED	2	92	88	-	-	-	13	112	97	112	105	99
RGT Accroc	FEED	6	104	104	82	101	120	13	120	108	113	112	107
RGT Calabro	FEED	6	100	97	78	94	118	13	118	104	113	112	106
RGT Cesario	FEED	2	-	-	-	-	121	2	-	-	-	-	104
RGT Zanzibar	FEED	6	109	111	103	112	119	13	112	111	106	112	111
Severn	FEED	2	-	99	89	-	-	5	-	100	100	-	-
SF Adagio	FEED	4	99	96	83	93	-	11	115	103	112	112	-
SQP Revenue <sup>db</sup>	FEED	1	96	-	-	-	-	11	117	101	116	112	-

\* denotes default classification

- denotes no data available

Maximum quality abbreviations listed on page 8.

Data Source: National Variety Trials (2016–2020).

**Table 10: Mallee, North Central and Wimmera (early season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

		MALLEE				NORTH CENTRAL			WIMMERA		
Year			2017	2019	2020		2017	2018		2019	2020
Mean yield (t/ha)			4.00	4.60	5.40		4.80	2.30		5.00	3.50
	Quality	No. trials	1	1	1	No. trials	1	1	No. trials	1	1
BREAD WHEAT											
Ascot <sup>db</sup>	APW	1	-	96	-	0	-	-	1	106	-
Catapult <sup>db</sup>	AH	2	-	96	106	1	-	111	2	108	105
Coolah <sup>db</sup>	AH	2	103	98	-	2	106	101	1	94	-
Coota <sup>db</sup>	AH	1	-	-	106	0	-	-	1	-	103
Cutlass <sup>db</sup>	APW	2	113	-	104	2	106	101	1	-	107
Denison <sup>db</sup>	APW	1	-	-	108	0	-	-	1	-	107
DS Bennett <sup>db</sup>	ASW	2	92	107	-	2	96	98	1	108	-
DS Pascal <sup>db</sup>	APW	3	104	119	100	2	95	94	2	104	102
EG Titanium	AH	2	-	97	98	1	-	102	2	96	100
EGA Wedgetail <sup>db</sup>	APW*	3	91	105	91	2	94	95	2	97	91
Elmore CL Plus <sup>db</sup>	AH	2	-	95	96	0	-	-	2	90	98
Forrest <sup>db</sup>	APW	2	82	111	-	2	63	81	1	93	-
Illabo <sup>db</sup>	AH	3	98	107	99	2	97	99	2	107	96
LRPB Kittyhawk <sup>db</sup>	AH	2	88	-	91	2	81	87	1	-	93
LRPB Nighthawk <sup>db</sup>	APW	2	-	112	97	1	-	88	2	100	97
LRPB Trojan <sup>db</sup>	APW	2	110	-	103	2	114	107	1	-	103
RockStar <sup>db</sup>	AH	2	-	121	109	0	-	-	2	116	113
Sheriff CL Plus <sup>db</sup>	APW	2	-	101	102	1	-	110	2	103	104
Yitpi <sup>db</sup>	AH	2	103	-	99	2	105	100	1	-	101
FEED WHEAT											
Longsword <sup>db</sup>	FEED	3	81	81	101	2	80	98	2	100	93
LRPB Beaufort <sup>db</sup>	FEED	3	110	112	107	2	99	100	2	110	107
Severn	FEED	1	90	-	-	2	86	93	0	-	-

Data Source: [National Variety Trials](#) (2017–2020).

NOTE: 2018 Mallee data not published due to compromised trials. Trials were not sown in North Central in 2019 and 2020 or Wimmera in 2017 and 2018.

\* denotes default classification

- denotes no data available

Maximum quality abbreviations listed on page 8.



**Table 11: South West (long season) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

SOUTH WEST							
Year			2016	2017	2018	2019	2020
Mean yield (t/ha)			7.46	5.05	5.29	5.64	7.75
	Quality	No. trials	2	1	2	2	1
BREAD WHEAT							
Denison <sup>db</sup>	APW	1	-	-	-	-	95
DS Bennett <sup>db</sup>	ASW	8	121	108	107	110	111
DS Pascal <sup>db</sup>	APW	7	103	95	94	105	-
EG Jet <sup>db</sup>	APW	1	-	-	-	-	101
EGA Wedgetail <sup>db</sup>	APW*	7	89	94	95	95	96
Forrest <sup>db</sup>	APW	7	91	88	89	93	-
Illabo <sup>db</sup>	AH	8	97	97	98	106	97
LRPB Kittyhawk <sup>db</sup>	AH	6	92	94	94	-	92
LRPB Nighthawk <sup>db</sup>	APW	5	-	-	98	101	98
LRPB Trojan <sup>db</sup>	APW	8	108	95	96	107	92
Sunlamb <sup>db</sup>	ASW	5	90	100	98	-	-
FEED WHEAT							
Anapurna	FEED	3	-	-	-	107	115
Brennan	FEED	8	94	95	97	89	94
Einstein	FEED	8	106	102	103	98	98
Longsword <sup>db</sup>	FEED*	8	90	90	93	102	87
LRPB Beaufort <sup>db</sup>	FEED	8	123	108	105	123	106
Manning <sup>db</sup>	FEED	8	119	107	108	104	103
Naparoo <sup>db</sup>	FEED	8	63	100	85	51	93
RGT Accroc	FEED	8	128	120	118	118	122
RGT Calabro	FEED	8	121	112	113	116	110
RGT Cesario	FEED	1	-	-	-	-	115
RGT Zanzibar	FEED	8	115	110	105	117	110
Severn	FEED	3	-	99	98	-	-
SF Adagio	FEED	7	114	110	110	107	-
SF Ovalo	FEED	3	108	101	-	-	-
SQP Revenue <sup>db</sup>	FEED	8	121	107	107	116	108
Sunmax <sup>db</sup>	FEED	3	81	97	-	-	-

Data Source: [National Variety Trials](#) (2016–2020).

\* denotes default classification

- denotes no data available

Maximum quality abbreviations listed on page 8.

**Table 12: Wimmera (durum) wheat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

WIMMERA							
Year			2016	2017	2018	2019	2020
Mean yield (t/ha)			6.90	5.73	4.16	4.33	4.48
	Quality	No. trials	1	1	1	1	1
Bitalli <sup>db</sup>	ADR	4	-	108	106	109	115
Caparoi <sup>db</sup>	ADR	5	68	102	98	101	100
DBA Artemis <sup>db</sup>	ADR	5	105	105	104	102	109
DBA Aurora <sup>db</sup>	ADR	5	101	108	105	105	114
DBA Bindaroi <sup>db</sup>	ADR	3	-	-	100	100	101
DBA Spes <sup>db</sup>	ADR	5	100	105	103	103	109
DBA Vittaroi <sup>db</sup>	ADR	3	-	-	102	106	109
EGA Bellaroi <sup>db</sup>	ADR	5	105	92	97	91	89
Hyperno <sup>db</sup>	ADR	5	90	103	101	101	105
Jandaroi <sup>db</sup>	ADR	1	-	-	-	-	75
Saintly <sup>db</sup>	ADR	5	88	104	99	107	102
Tjilkuri	ADR	5	96	103	102	101	105
Westcourt <sup>db</sup>	ADR	3	-	-	103	101	103
WID802	ADR	5	110	106	104	107	110

Data Source: [National Variety Trials](#) (2016–2020).

- denotes no data available

Maximum quality abbreviations listed on page 8.

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David Hogan	Laucke Flour Mills

# BARLEY

Barley growers in Victoria have access to several barley varieties. Identifying the variety that is best suited to a region and will give the greatest return requires consideration of several factors including relative yield, disease resistance, marketing options, and the probability of achieving particular quality grades. The decision to grow either a malting or non-malting variety may depend on one or more factors, including the difference in payments between malting and non-malting grades related to yield differences, the probability of producing a malting grade barley, availability of malting storage segregations in storage facilities, disease resistance and agronomic considerations. It is important that growers contact grain marketers to discuss market demand. Malting barley is grown, stored and sold on a variety-specific basis and it is important to ascertain if the variety chosen can be stored and marketed in your area.

## NEW VARIETIES

Commodus<sup>®</sup> CL is a new barley variety undertaking malt evaluation with Barley Australia. Bred and marketed by InterGrain (tested as IGB1908T), Commodus<sup>®</sup> CL will be available as a non-malting variety in 2022.

Australian Grain Technologies (AGT) had two new barley varieties accepted into Barley Australia malt accreditation in 2021. Cyclops<sup>®</sup> and Minotaur<sup>®</sup> are available as non-malting barley varieties to sow in 2022 while they undertake malting evaluation.

Nitro is a new non-malting variety released in 2020 and will be available for barley growers in the 2022 season. Bred by Sejet and commercialised in Australia by GrainSearch, Nitro can only be grown under a GrainSearch Nitro Barley License Agreement.

## QUALITY CHANGES

Grain Trade Australia (GTA) has made no major changes to the quality standards regarding barley for the 2021–22 season.

## INDUSTRY UPDATE

Australian Crop Breeders Ltd (ACB) developed new guidelines for wheat maturity classifications in 2020. Cereal maturity classifications and terminology in this guide have been assigned using the industry guidelines provided by Australian Crop Breeders Ltd. Barley has been classified into the same maturity groups as wheat, based on data from the GRDC National Phenology Initiative. As maturity descriptions have been applied to wheat, barley and oats using the same system, the maturity descriptions for individual barley varieties will be different to previous editions.

Clearfield<sup>®</sup> barley varieties (Spartacus CL<sup>®</sup> or Scope CL<sup>®</sup>) may incur market access restrictions in some important export destinations. This potential restriction is due to the existing Maximum Residue Limits (MRLs) in those destination markets being below the residues allowed in Australia for IMI chemicals. South Korea and Japan have now adopted an MRL for imazapyr of 0.7mg/kg. All grain exported must meet the importing country regulatory requirements, including MRLs for individual chemicals that may be listed under the IMI category.

Growers are encouraged to speak with their relevant bulk handling companies and grain buyers to keep updated with their plans for handling Clearfield<sup>®</sup> barley treated with herbicides registered for use on these varieties (for example, Intervix<sup>®</sup>, Intercept<sup>®</sup> and Sentry<sup>®</sup>). Growers are also encouraged to speak to their agronomists or advisers. Information will be updated regularly at [barleyaustralia.com.au/ba-industry-updates](http://barleyaustralia.com.au/ba-industry-updates)

## MALT EVALUATION

In 2020 three varieties passed stage two malt evaluation and were granted Barley Australia malt accreditation in February 2021: Leabrook<sup>®</sup>, Alestar<sup>®</sup> and Maximus<sup>®</sup> CL.

Bottler<sup>®</sup> and Kiwi<sup>®</sup> passed stage one evaluation in 2020 and had sufficient grain available to commence stage two evaluation in 2021. The earliest expected accreditation results available for Bottler<sup>®</sup> and Kiwi<sup>®</sup> will be early 2022. New varieties Cyclops<sup>®</sup> and Minotaur<sup>®</sup> were accepted into malt accreditation in 2021.

Laperouse<sup>®</sup> had insufficient grain available to complete stage one evaluation in 2020 and has been carried over to 2021. New varieties Beast<sup>®</sup> and Commodus<sup>®</sup> CL were accepted into malt evaluation in 2020 and 2021 respectively. The outcome of malt evaluation of these varieties will be updated on [barleyaustralia.com.au](http://barleyaustralia.com.au) in March 2022.

Barley Australia lists malting varieties that are preferred by its member companies. These varieties are highlighted in the variety listings as 'Malting barley (preferred variety)'. The level of demand for domestic and export markets in Victoria is shown in Table 2.

## DISEASE UPDATE

Diseases have the potential to cause significant issues during favourable seasons with yield losses of 15 to 20 per cent possible in susceptible varieties. Avoid sowing susceptible varieties into infected stubble, control the green bridge, and apply fungicides and insecticides proactively to maximise production.

Stubble-borne diseases, spot form of net blotch, net form of net blotch, and scald are most common in paddocks where barley residue is present from previous seasons. Ensure good coverage of effective seed treatments to provide effective control of bunt and smut diseases. Some products can also provide suppression of foliar diseases, so please check the label and choose the appropriate product for your situation.

## MORE INFORMATION

[nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

[grdc.com.au](http://grdc.com.au)

- [Barley Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Agriculture Victoria Cereal Disease Guide](#)
- [Growing barley in Victoria](#)

[barleyaustralia.com.au](http://barleyaustralia.com.au)

- [List of preferred malting barley varieties](#)
- [Updated status of malting barley evaluation](#)

[extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

## VARIETY DESCRIPTIONS

Varieties have been listed according to quality classification grade and in alphabetical order and not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

### Abbreviations used are:

- (b) Denotes Plant Breeder's Rights apply
- CCN Cereal cyst nematode
- BYDV Barley yellow dwarf virus
- RLN Root lesion nematode
- NFNB Net form of net blotch
- SFNB Spot form of net blotch
- IMI Imidazolinone

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.



## MALTING BARLEY

### ALESTAR<sup>®</sup>

Alestar<sup>®</sup> is a quick maturing variety, with maturity similar to Commander<sup>®</sup>, suited to the medium to high-rainfall regions. Alestar<sup>®</sup> has good straw strength, excellent head retention and test weight. Consistently produces high quality malt, ideal for domestic and boutique brewing, as well as export brewing. Alestar<sup>®</sup> was granted Barley Australia malt accreditation in 2021. Bred by Elders. Released 2017. Seed available from Elders and Elders-approved commercial partners. EPR \$3.00.

### COMMANDER<sup>®</sup>

A quick-mid maturing variety best suited to 375 to 500mm rainfall districts, particularly the Wimmera and Mallee. It is broadly adapted and is high-yielding under favourable spring conditions. Commander<sup>®</sup> is inherently lower in grain protein content, like Scope CL<sup>®</sup>. It has moderately weak straw and can lodge under either high-yield environments or if unfavourable conditions occur between grain fill and harvest. Grain size is generally excellent compared to other varieties, but it is prone to low test weights in some seasons. Released 2008. Marketed by Seednet. EPR \$3.80.

### COMPASS<sup>®</sup>

Compass<sup>®</sup> is a very quick maturing variety. It is closely related to Commander<sup>®</sup> but is significantly higher yielding and earlier flowering with typical May sowing. Compass<sup>®</sup> has relatively weak straw strength and is prone to lodging in high-yielding environments. Compass<sup>®</sup> has excellent physical grain quality with high retention, low screenings and moderate test weight. Bred by University of Adelaide. Released 2013. Seed available from Seednet. EPR \$3.80.

### FAIRVIEW<sup>®</sup>

A quick-mid maturing variety best suited to 400 to 600mm rainfall districts. Yields are similar to Westminster<sup>®</sup> in these districts. The grain plumpness of Fairview<sup>®</sup> is superior to Gairdner. Fairview<sup>®</sup> was accredited in 2011 and has an export and domestic malt quality profile. Limited seed is available from Malteurop for the open market. Released 2008. EPR \$3.00.

### LA TROBE<sup>®</sup>

Very quick maturing variety for low to medium-rainfall environments. A semi-dwarf plant type providing medium lodging resistance and a medium head loss risk. The variety has a short coleoptile and sowing depth should be considered. Good

sprouting tolerance, excellent test weight and moderately good grain plumpness. It is classed as a 'preferred' malting variety for GrainCorp in the GrainCorp areas of the North East, Central, Swan Hill, southern Mallee and Wimmera in Victoria. Developed by InterGrain. Released 2013. Free to trade. EPR \$4.00.

### LEABROOK<sup>®</sup>

Leabrook<sup>®</sup> is a very quick maturing medium tall barley variety, with similar plant type and disease resistance to Compass<sup>®</sup> with higher plump grain percentage and lower screenings. Leabrook<sup>®</sup> was granted Barley Australia malt accreditation in 2021. Released 2020 (tested as WI4896). Bred by University of Adelaide. Seed available and marketed by Seednet. EPR \$3.80.

### MAXIMUS<sup>®</sup> CL

Maximus<sup>®</sup> CL is a very quick-quick maturing Clearfield<sup>®</sup> barley. It has an improved disease resistance package, including CCN resistance compared to Spartacus CL<sup>®</sup> and has good grain size. It has a short coleoptile length, and it is recommended that sowing depth be considered carefully. Maximus<sup>®</sup> CL was granted Barley Australia malt accreditation in 2021. Released 2020 (tested as IGB1705T). Bred and marketed by InterGrain. Seed available through InterGrain Seedclub members. EPR \$4.25.

### RGT PLANET<sup>®</sup>

RGT Planet<sup>®</sup> is a quick maturing variety. It has elastic maturity making it suited to low to high-rainfall regions. RGT Planet<sup>®</sup> is quick to establish and produces high early biomass for excellent weed competition. Good straw strength and head retention, and generally has good test weight and low screenings. Suitable for both domestic and export markets. Released 2016. Bred by RGT Semences. Seed available from Seed Force Commercial Partners. EPR \$4.00.

### SCOPE CL<sup>®</sup>

A moderately tall, quick maturing barley suitable across a range of medium-rainfall environments. Scope CL<sup>®</sup> can be prone to head loss and lodging under certain environmental conditions. Scope CL<sup>®</sup> has moderate grain size and inherently low grain protein. It is registered for the use of appropriate imidazolinone herbicides. Accredited as malting barley in 2013, growers are advised to consult with their grain marketer about segregation and pricing. Scope CL<sup>®</sup> is accepted into those markets previously accepting Buloke<sup>®</sup>. Released 2010. Marketed by Seednet. EPR \$3.50.

**SPARTACUS CL<sup>®</sup>**

Spartacus CL<sup>®</sup> is a very quick maturing, CCN-resistant, Clearfield<sup>®</sup> barley. It is a semi-dwarf and is ideally suited to the low to medium-rainfall regions. It is agronomically similar to La Trobe<sup>®</sup> but has slightly improved lodging tolerance with a low head loss risk and has short rachilla hair length, reducing itchiness. It is registered for the use of appropriate imidazolinone herbicides. Accredited as a malting barley in 2018, demand for domestic and export markets are high. Growers are advised to consult with their grain marketer about segregation and pricing. Seed available from InterGrain Seedclub Members. EPR \$4.25.

**WESTMINSTER<sup>®</sup>**

A quick-mid maturing variety with medium to tall, stiff straw and good head retention. Westminster<sup>®</sup> continues to have good market demand in Victoria and is best suited to high-rainfall areas in southern Victoria. Accredited as malting barley in 2013, domestic and export demand remains high. Bred by Nickerson's. Released 2009. EPR \$3.00.

**FOOD GRADE BARLEY****HINDMARSH<sup>®</sup>**

A very quick maturing semi-dwarf variety recommended for the 325 to 450mm rainfall regions. Hindmarsh<sup>®</sup> has a relatively short coleoptile and deep sowing should be avoided to maximise crop establishment and yield potential. Hindmarsh<sup>®</sup> is free-threshing with good resistance to head loss and high test weight among non-malting varieties. Released 2006. Marketed by Seednet. EPR \$1.50.

**NON-MALTING BARLEY****FATHOM<sup>®</sup>**

A quick maturing variety with broad adaption. It has low screenings, similar to Maritime<sup>®</sup>. Fathom<sup>®</sup> has a long coleoptile and excellent early vigour, giving weed competitiveness and tolerance to deep planting, especially on sandy soils. Fathom<sup>®</sup> is well suited to wider row spacings and is an alternative to Hindmarsh<sup>®</sup>, particularly where more reliable establishment and improved early vigour are sought. Fathom<sup>®</sup> is moderately tall, possesses good head loss tolerance but is prone to lodging in high-yielding environments. Developed by University of Adelaide. Released 2011. Seed available from Seednet. EPR \$2.00.

**NEW – NITRO**

Nitro is a mid-season maturity feed barley variety with medium straw height. Nitro suits most high and medium-rainfall growing regions and has strong potential in Victoria, comparable to RGT Planet<sup>®</sup> under irrigated conditions. Nitro would ideally suit growers looking to minimise risk in uncertain years. Good early seedling vigour that matures approximately 5 to 7 days faster than Westminster<sup>®</sup>. Released in 2020 (tested as HV8). Bred by Sejet and has been evaluated and commercialised in Australia by GrainSearch and grown under a licence agreement. EPR \$3.60.

**ROSALIND<sup>®</sup>**

A very broadly adapted, very quick maturing semi-dwarf, feed variety with good yield stability. Maturity is typically slightly later than La Trobe<sup>®</sup>, but earlier than Scope CL<sup>®</sup>. It is ideally suited to May sowings. Rosalind<sup>®</sup> has strong lodging tolerance and low head loss risk. Bred by InterGrain. Released 2015. Free to trade and available from InterGrain Seedclub Members. EPR \$3.50.

**VARIETIES CURRENTLY UNDERGOING MALT EVALUATION****BEAST<sup>®</sup>**

Beast<sup>®</sup> is a quick maturing variety suited to medium to low-rainfall environments and performs well in stressed growing conditions. Similar plant type to Compass<sup>®</sup> offering useful levels of early vigour and weed competitiveness, but care should be taken in lodging-susceptible conditions. Beast<sup>®</sup> is currently undergoing stage one malt evaluation, with the earliest possible decision expected in 2023. Released 2020 (tested as AGTB0113) and marketed by AGT. Seed available through AGT Affiliates and is eligible for AGT Seed Sharing™. EPR \$4.00.

**BOTTLER<sup>®</sup>**

A quick maturing variety suited to medium to high-rainfall environments. Bottler<sup>®</sup> is an export malt type grain. Currently undergoing stage two Barley Australia malt accreditation, with earliest accreditation results expected in 2022. Bred by Sejet. Released 2018. Seed available from rural merchant stores via selected GrainSearch Affiliates. EPR \$4.00.

**NEW – COMMODUS<sup>®</sup> CL**

Commodus<sup>®</sup> CL is a quick-mid maturing Clearfield<sup>®</sup> barley, comparable to Compass<sup>®</sup>. Ideally suited to lighter soils and medium to low-rainfall environments. Commodus<sup>®</sup> CL has an effective disease resistance package although possesses poor lodging tolerance and a medium head loss risk. Commodus<sup>®</sup> CL is currently undergoing Barley Australia malt accreditation with a decision expected in 2023. Released 2020 (tested as IGB1908T). Collaboratively bred by Grains Innovation Australia (GIA) and InterGrain. Marketed by InterGrain. EPR \$4.24.

**NEW – CYCLOPS<sup>®</sup>**

Cyclops<sup>®</sup> is a quick-mid maturity variety that is broadly adapted and particularly suited to the low to medium-rainfall environments. Short plant type with lower lodging risk compared to Compass<sup>®</sup> types. Cyclops<sup>®</sup> is currently undergoing Barley Australia malt accreditation with the earliest decision expected in 2023. Released 2021 (tested as AGTB0200) and marketed by AGT. Seed available through AGT Affiliates and eligible for AGT Seed Sharing<sup>™</sup>. EPR \$4.00.

**KIWI<sup>®</sup>**

Kiwi<sup>®</sup> is quick-mid maturing variety best suited to high-rainfall zone districts. Average yields are stronger than Fairview<sup>®</sup> and Westminster<sup>®</sup> in these districts. Grain plumpness is comparable to RGT Planet<sup>®</sup>. Kiwi<sup>®</sup> commenced stage two Barley Australia malt accreditation with the earliest decision expected in 2022. It has an export and domestic malt quality profile. Released 2020 (tested as 02035-160). Limited seed is available from Malteurop for the open market. EPR \$3.00.

**LAPEROUSE<sup>®</sup>**

A quick maturing variety, comparable to Commander<sup>®</sup>, with a medium plant height. Very good straw strength and standability, and good head loss resistance. Currently undergoing stage one Barley Australia malt accreditation with the earliest decision expected in 2023. Released 2020 (tested as WI4952). Bred by University of Adelaide and SECOBRA Recherches, seed available from Seednet. EPR \$3.80.

**NEW – MINOTAUR<sup>®</sup>**

Minotaur<sup>®</sup> is a mid-slow maturity variety suited to the medium to high-rainfall zones, slightly slower in maturity than RGT Planet<sup>®</sup>. Minotaur<sup>®</sup> has shown wide adaption to multiple environments and tends to maintain performance across tougher seasons compared to similar maturing varieties. Minotaur<sup>®</sup> is currently undergoing Barley Australia malt accreditation with the earliest decision expected in 2023. Released 2021 (tested as AGTB0213) and marketed by AGT. Seed available through AGT Affiliates and is eligible for AGT Seed Sharing<sup>™</sup>. EPR \$4.00.

**Table 1: Barley time of sowing guide based on phenology speed.**

This table is a guide only and has been compiled from the National Phenology Initiative, funded by GRDC (Research project ULA1703-004).

MALLEE		April				May				June			
Speed	Example cultivar												
Quick-mid	Commander <sup>db</sup>												
Quick	RGT Planet <sup>db</sup>												
Very quick	Spartacus CL <sup>db</sup>												
WIMMERA		April				May				June			
Quick-mid	Commander <sup>db</sup>												
Quick	RGT Planet <sup>db</sup>												
Very quick	Spartacus CL <sup>db</sup>												
NORTH CENTRAL		April				May				June			
Quick-mid	Commander <sup>db</sup>												
Quick	RGT Planet <sup>db</sup>												
Very quick	Spartacus CL <sup>db</sup>												
NORTH EAST		April				May				June			
Quick-mid	Commander <sup>db</sup>												
Quick	RGT Planet <sup>db</sup>												
Very quick	Spartacus CL <sup>db</sup>												
SOUTH WEST		April				May				June			
Quick-mid	Westminster <sup>db</sup>												
Quick	RGT Planet <sup>db</sup>												
Very quick	Rosalind <sup>db</sup>												

Yellow = earlier than optimum.

Green = optimum sowing time.

Red = later than optimum.

**Table 2: Barley variety demand<sup>1</sup> for preferred malting varieties and agronomic characteristics.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeders and seed companies. Domestic and export market demand has been sourced from Barley Australia (2021).

Variety	Domestic brewing industries <sup>2</sup>	Export brewing industries	Height	Maturity	Head loss	Plump grain rating	Lodging
<b>MALTING BARLEY</b>							
Alestar <sup>db</sup>	developing markets		M	Q	R	8	R
Commander <sup>db</sup>	low	low	M	Q-M	M	8	M
Compass <sup>db</sup>	low	low	MT	VQ	M	9	S
Fairview <sup>db</sup>	grown under contract		MS	Q-M	MR	-	R
La Trobe <sup>db</sup>	-	medium	S-MS	VQ	MR	6	R-MR
Leabrook <sup>db</sup>	developing markets		MT	VQ	M	9	M
Maximus <sup>db</sup> CL	developing markets		MS	VQ-Q	-	8	R
RGT Planet <sup>db</sup>	medium	high	M	Q	R	7	R
Scope CL <sup>db</sup>	outclassed*		MT	Q	MS	6	M
Spartacus CL <sup>db</sup>	high	high	MS	VQ	R	7	R
Westminster <sup>db</sup>	high	high	MT	Q-M	R	-	R
<b>NON-MALTING BARLEY</b>							
Fathom <sup>db</sup>	-	-	MT	Q	MR	9	MR
Hindmarsh <sup>dbf</sup>	-	-	S-MS	VQ	MR	6	R-MR
Nitro	-	-	M	M	-	-	-
Rosalind <sup>db</sup>	-	-	MS	VQ	R	6-7	R
<b>BARLEY UNDER MALT EVALUATION</b>							
Variety	Target accreditation date		Height	Maturity	Head loss	Plump grain rating	Lodging
Beast <sup>db</sup>	2023		MT	Q	-	9	M
Bottler <sup>db</sup>	2022		M	Q	-	-	-
Commodus <sup>db</sup> CL	2023		MT	Q-M	M	9	S
Cyclops <sup>db</sup>	2023		MS	Q	MRMS	8	R-MR
Kiwi <sup>db</sup>	2022		MT	Q-M	-	-	-
Laperouse <sup>db</sup>	2023		M	Q	R	8-9	R
Minotaur <sup>db</sup>	2023		M	M-S	MR	7	R

NOTE: New maturity classifications have been assigned based on the [Industry Guide for Wheat Variety Maturity Description](#) by Australian Crop Breeders Ltd to achieve consistent maturity descriptions across all cereals.

<sup>1</sup>Demand in Victoria is determined by marketing companies who are members of Barley Australia. <sup>2</sup>Domestic demand by Australian malting companies: malt produced may be used by the domestic brewing industry or exported.

<sup>f</sup> Food grade barley. \* denotes variety has mostly been replaced by better yielding varieties

Height: T = tall, MT = moderately tall, M = medium, MS = moderately short, S = short. Maturity: VQ = very quick, Q = quick, M = mid

Head loss and lodging: see Table 3 for key. Plump grain: relative scale: 1 = small or unreliable grain size; 9 = large or reliable grain size

- denotes no rating available



**Table 3: Disease resistance ratings of barley varieties.**

Variety	Leaf scald	Spot form net blotch	Net form net blotch	Powdery mildew	Leaf rust	CCN resistance	Root lesion nematode	
							<i>P. neglectus</i> resistance	<i>P. thornei</i> resistance
MALTING BARLEY								
Alestar <sup>db</sup>	S	S	S	MR	MS	R	MR	MR
Commander <sup>db</sup>	SVS	MSS	MS <sup>#</sup>	MS	S	R	MRMS	MRMS
Compass <sup>db</sup>	SVS	MS	MS <sup>#</sup>	MS	SVS	R	MRMS	MR
Fairview <sup>db</sup>	SVS	S	SVS	RMR	SVS	-	MR	MR
La Trobe <sup>db</sup>	SVS	S	MS	MSS	SVS	R	MRMS	MRMS
Leabrook <sup>db</sup>	SVS	MS	MS	MSS	SVS	RMR	MR	RMR
Maximus <sup>db</sup> CL	S	MRMS	MS	MS	S	R	MRMS	MR
RGT Planet <sup>db</sup>	MSS	SVS	SVS	RMR	MS	R <sub>p</sub>	MRMS	MR
Scope CL <sup>db</sup>	SVS	MSS	MS	RMR	S	S	MRMS	MRMS
Spartacus CL <sup>db</sup>	SVS	SVS	S	MS	S	R	MRMS	MRMS
Westminster <sup>db</sup>	S	S	SVS	R	MRMS	-	MRMS	MS
NON-MALTING BARLEY								
Banks <sup>db</sup>	SVS	S	MR	MR	S	S	MRMS	MR
Fathom <sup>db</sup>	S	RMR	MS <sup>#</sup>	MS	S	R	MRMS	MR
Hindmarsh <sup>dbF</sup>	SVS	SVS	MS	MSS	S	R	MRMS	MRMS
Nitro	SVS	SVSp	MSp	MR	MS	R	MR	MR
Rosalind <sup>db</sup>	S	S	MS	MSS	MS	R	MRMS	MR
BARLEY UNDER MALT EVALUATION								
Beast <sup>db</sup>	SVS	MSS	MSS <sup>#</sup>	MSS	S	MR	MRMS	MR
Bottler <sup>db</sup>	SVS	S	MSS	R	MS	-	MS	RMR
Buff <sup>db</sup>	SVS	S	MS	S	SVS	-	MRMS	MRMS
Commodus <sup>db</sup> CL	VS	MSp	MSp	MSp	SVS	R	-	-
Cyclops <sup>db</sup>	SVS	S	MSp	MSp	SVSp	Sp*	S	MS
Kiwi <sup>db</sup>	SVS	S	MR <sub>p</sub>	RMR	MS	S	MRMS	RMR
Laperouse <sup>db</sup>	VS	MS	MSSp	MS	SVS	S	MR	MR
Minotaur <sup>db</sup>	SVS	S	MSp	Sp	SVS	Rp*	MSS	MR

Data Source: [Agriculture Victoria Cereal Disease Guide \(2021\)](#), [NVT Disease ratings \(2021\)](#).<sup>F</sup> Food grade barley. *p* = provisional ratings - treat with caution. \* provisional based on AGT data

R = resistant RMR = resistant to moderately resistant MR = moderately resistant MRMS = moderately resistant to moderately susceptible MS = moderately susceptible

MSS = moderately susceptible to susceptible

S = susceptible SVS = susceptible to very susceptible VS = very susceptible.

# Varieties marked may be more susceptible if alternative strains are present

- denotes no rating available

Table 4: Barley disease guide summary.

Disease	Organism	Symptoms	Occurrence	Inoculum source	Control
FOLIAR					
Scald	<i>Rhynchosporium commune</i>	Water-soaked areas on leaves. Lesions appear grey/green then bleached with brown margins.	Years with frequent rain, and early sown crops.	Residues of barley and barley grass. Can be seed-borne. Spores spread by rain splash.	Resistant varieties, clean seed, manage barley and barley grass debris. Seed and foliar fungicides.
Spot form of net blotch	<i>Pyrenophora teres</i> f. <i>maculata</i>	Dark brown spots to 10mm, with yellow margins.	Infection from stubble especially in wet autumn conditions.	Barley and barley grass stubble, also airborne spores from infected crops.	Control barley grass and manage barley stubble. Avoid very susceptible varieties. Foliar fungicides.
Net form of net blotch	<i>Pyrenophora teres</i> f. <i>teres</i>	Small brown spots that develop into dark brown streaks on leaf blades that have net-like appearance.	Spores can be produced for over two years on stubble. Moist conditions, temperatures in the 15-25°C range.	Survives on infected barley and barley grass residues. Wind-borne spores.	Resistant varieties, crop rotation and stubble management.
Powdery mildew	<i>Blumeria graminis</i> f.sp. <i>hordei</i>	White powdery spores on upper leaf surfaces, underside of leaves turn yellow to brown.	Favoured by high humidity and temperature of 15-22°C. Worse in high-fertility paddocks and early sown crops.	Volunteer barley, barley grass and crop residue. Airborne spores.	Resistant varieties. Seed and foliar fungicides.
Leaf rust	<i>Puccinia hordei</i>	Small circular orange pustules on upper leaf surface.	Moist conditions with temperatures in the range 15-22°C.	Living plant hosts including barley, barley grass and Star of Bethlehem.	Use resistant varieties and control volunteer barley and barley grass over summer/autumn.
Stem rust	<i>Puccinia graminis</i>	Large red-brown pustules. Rupture of leaf and stem surface.	Infection requires temperatures in the 15-30°C range and moist conditions.	Living plant hosts including volunteer cereals (wheat, barley, triticale and rye).	Use resistant varieties and control volunteer wheat, triticale and barley over summer/autumn.
BGSR (Barley grass stripe rust)	<i>Puccinia striiformis</i>	Yellow powdery pustules in stripes on the leaves.	Can develop throughout the growing season.	Barley grass and susceptible barley varieties.	Avoid susceptible varieties.
BYDV (Barley yellow dwarf virus)	Barley yellow dwarf virus	Yellow stripes between leaf veins, some leaves red. Sterile heads and dwarfing plants.	Virus is transmitted by aphids.	Hosts include all cereals and many grasses.	Resistant varieties. Chemical control of aphids may be suitable for high-value crops.
GRAIN					
Covered smut	<i>Ustilago segetum</i> var. <i>hordei</i>	Dark, compacted heads, grain replaced by smut balls.	Spores germinate in infected grain when temperatures are between 14-25°C.	Infected seed.	Use disease-free seed, resistant varieties, and seed treatments.
Loose smut	<i>Ustilago tritici</i>	Dark brown powdery spores replace grain.	Moist conditions at flowering and when temperatures are between 16-22°C.	Infected seed.	Use disease-free seed and seed treatments. Avoid susceptible varieties.
ROOT/CROWN					
Crown rot	<i>Fusarium pseudo-graminearum</i> , <i>F. culmorum</i>	'Whiteheads' or deadheads most obvious after flowering, pink discolouration under leaf sheaths.	Most common on heavy or poorly drained soils. Favoured by moist, humid conditions with temperatures between 15-30°C.	Survives in infected stubble residue for up to two years. Hosts include wheat, barley, triticale and some grasses.	Crop rotation, stubble removal, and cultivation.
Pythium root rot (Damping off)	<i>Pythium</i> spp.	Stunted seedlings, reduced tillering, pale stunted or stubby roots with light brown tips.	Favoured by wet conditions. Increased risk where high-rainfall occurs after sowing.	Spores survive in soil or plant debris for up to five years.	Avoid deep sowing into cold wet soils, especially when direct drilling. Ensure good nutrient levels.
Common root rot	<i>Bipolaris sorokiniana</i>	Brown discolouration of roots, sub-crown internode and crown. Plant stunting, brown spots on leaves and reduced tillers.	Scattered through crop.	Wheat, barley, triticale and rye.	Crop rotation.
Cereal cyst nematode (CCN)	<i>Heterodera avenae</i>	Yellow, stunted plants. Knotted roots.	Light soils and well-structured clays where cereals are commonly grown.	Present in most soils in the southern region.	Resistant varieties, break from susceptible cereals and grasses, particularly wild oat.
Root lesion nematode	<i>Pratylenchus thornei</i> , <i>P. neglectus</i>	Reduced tillering, ill thrift; lesions on roots, lack of branching of root system.	Favoured by cereals in rotation with chickpea, medic and vetch.	Survives as dormant nematodes in the soil.	Crop rotation using resistant crops and resistant varieties.
Take-all	<i>Gaeumannomyces graminis</i> var. <i>tritici</i> (Ggt)	Stunted or yellowing plants, 'whiteheads' at heading.	Fungus thrives under warm, damp conditions.	Fungus survives over summer in crowns and roots of wheat, barley and grass plants.	Crop rotations, at least one year free of hosts (cereals and grasses, especially barley grass). Fungicide applied to seed or fertiliser.

Data Sources: This table has been developed from information in the publications Wallwork H (2000) (Ed) *Cereal Root and Crown Diseases* (Grains Research and Development Corporation, SARDI) and Wallwork H (2000) (Ed) *Cereal Leaf and Stem Diseases* (Grains Research and Development Corporation, SARDI). Reviewed by Mark McLean, Agriculture Victoria (2021).

**Table 5: Mallee and Wimmera (main season) barley results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	MALLEE						WIMMERA					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		4.73	3.64	1.96	3.35	3.62		6.65	5.12	3.93	5.59	4.72
	No. trials	6	4	6	5	6	No. Trials	4	4	3	4	3
MALTING BARLEY												
Alestar <sup>db</sup>	6	-	-	-	-	95	18	100	99	94	99	97
Bass <sup>db</sup>	21	96	96	94	98	-	15	104	97	100	99	-
Baudin <sup>db</sup>	0	-	-	-	-	-	11	103	93	99	-	-
Commander <sup>db</sup>	27	98	98	99	98	99	18	97	99	102	97	103
Compass <sup>db</sup>	27	96	103	116	108	105	18	91	100	103	98	101
Fairview <sup>db</sup>	0	-	-	-	-	-	13	101	99	-	99	98
Flinders <sup>db</sup>	6	95	-	-	-	-	18	96	96	94	96	96
Gairdner	21	86	87	91	86	-	15	87	87	87	89	-
Granger <sup>db</sup>	15	100	97	-	92	-	18	96	99	93	97	97
La Trobe <sup>db</sup>	27	96	102	110	107	104	18	96	100	97	101	95
Leabrook <sup>db</sup>	27	101	106	115	110	107	18	96	104	106	102	105
Maximus <sup>db</sup> CL	17	-	-	108	107	108	10	-	-	96	99	96
RGT Planet <sup>db</sup>	27	117	111	103	106	106	18	116	111	110	112	109
Schooner	10	83	87	-	-	-	0	-	-	-	-	-
Scope CL <sup>db</sup>	27	94	94	98	95	94	15	95	94	96	95	-
Spartacus CL <sup>db</sup>	27	93	101	109	106	105	18	95	98	96	100	94
Westminster <sup>db</sup>	0	-	-	-	-	-	11	96	-	-	94	94
NON-MALTING BARLEY												
Banks <sup>db</sup>	21	103	103	104	104	-	15	102	103	104	102	-
Biere <sup>db</sup>	21	81	85	93	87	-	12	88	84	-	90	-
Charger	0	-	-	-	-	-	11	96	99	98	-	-
Explorer	0	-	-	-	-	-	15	102	104	98	102	-
Fathom <sup>db</sup>	27	100	105	116	111	106	18	104	101	108	105	102
Fleet <sup>db</sup>	10	97	101	-	-	-	8	97	98	-	-	-
Hindmarsh <sup>db</sup>	21	95	103	111	107	-	15	94	100	96	100	-
Keel	11	-	-	-	103	99	0	-	-	-	-	-
Maltstar <sup>db</sup>	11	-	-	92	96	-	15	109	101	104	102	-
Nitro	0	-	-	-	-	-	11	109	-	-	104	105
Oxford	10	106	97	-	-	-	11	106	102	98	-	-
Rosalind <sup>db</sup>	27	106	109	112	112	110	18	104	107	104	107	102
Topstart	0	-	-	-	-	-	11	109	100	98	-	-
BARLEY UNDER MALT EVALUATION												
Beast <sup>db</sup>	11	-	-	-	112	109	7	-	-	-	100	102
Bottler <sup>db</sup>	0	-	-	-	-	-	18	106	103	103	103	103
Buff <sup>db</sup>	17	-	-	110	106	101	10	-	-	107	104	101
Commodus <sup>db</sup> CL	6	-	-	-	-	104	3	-	-	-	-	102
Cyclops <sup>db</sup>	6	-	-	-	-	114	3	-	-	-	-	109
Kiwi <sup>db</sup>	0	-	-	-	-	-	16	104	99	99	99	100
Laperouse <sup>db</sup>	21	-	103	105	107	108	16	98	103	103	100	104
Minotaur <sup>db</sup>	6	-	-	-	-	112	3	-	-	-	-	109

Data Source: National Variety Trials (2016–2020).

- denotes no data available

**Table 6: North Central and North East (main season) barley results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	NORTH CENTRAL						NORTH EAST					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		6.06	4.59	2.88	3.88	4.42		7.28	4.96	4.43	5.47	5.13
	No. trials	2	2	2	1	1	No. trials	1	1	1	1	1
MALTING BARLEY												
Alestar <sup>db</sup>	8	92	99	85	93	96	5	101	97	98	99	102
Bass <sup>db</sup>	7	103	99	105	102	-	4	98	99	97	96	-
Baudin <sup>db</sup>	6	99	93	101	-	-	3	98	95	95	-	-
Commander <sup>db</sup>	8	103	95	99	97	99	5	100	103	97	97	96
Compass <sup>db</sup>	8	106	97	114	104	102	5	97	105	102	100	96
Fairview <sup>db</sup>	0	-	-	-	-	-	4	100	97	-	98	102
Flinders <sup>db</sup>	8	97	97	93	95	98	5	96	100	96	93	103
Gairdner	7	89	84	92	88	-	4	93	94	93	88	-
Granger <sup>db</sup>	1	-	-	-	91	-	4	100	99	97	96	-
La Trobe <sup>db</sup>	8	100	103	112	106	102	5	96	100	103	101	102
Leabrook <sup>db</sup>	8	108	102	112	106	104	5	100	106	104	103	100
Maximus <sup>db</sup> CL	4	-	-	109	104	104	3	-	-	102	97	111
RGT Planet <sup>db</sup>	8	101	114	96	107	106	5	111	98	108	116	108
Scope CL <sup>db</sup>	7	97	92	99	96	-	4	97	98	97	95	-
Spartacus CL <sup>db</sup>	8	102	103	115	107	103	5	94	100	102	98	104
Westminster <sup>db</sup>	2	90	-	-	-	-	4	98	96	-	92	98
NON-MALTING BARLEY												
Banks <sup>db</sup>	7	104	103	103	103	-	4	102	102	102	103	-
Biere <sup>db</sup>	4	86	85	-	-	-	2	89	-	-	88	-
Charger	6	94	97	100	-	-	3	101	96	103	-	-
Explorer	6	93	103	85	-	-	3	104	98	101	-	-
Fathom <sup>db</sup>	8	108	104	124	113	105	5	100	99	106	107	94
Hindmarsh <sup>db</sup>	7	101	104	112	105	-	4	95	101	103	99	-
Maltstar <sup>db</sup>	7	101	101	94	99	-	4	104	99	99	102	-
Nitro	4	101	-	-	101	103	3	105	-	-	105	105
Oxford	6	96	100	76	-	-	3	104	101	95	-	-
Rosalind <sup>db</sup>	8	104	111	111	110	107	5	102	102	107	108	110
Topstart	6	96	100	76	-	-	3	103	99	93	-	-
BARLEY UNDER MALT EVALUATION												
Beast <sup>db</sup>	2	-	-	-	108	105	2	-	-	-	100	99
Bottler <sup>db</sup>	8	99	103	94	100	101	5	104	99	101	103	102
Buff <sup>db</sup>	8	105	101	117	109	102	5	101	97	104	106	90
Commodus <sup>db</sup> CL	1	-	-	-	-	101	1	-	-	-	-	96
Cyclops <sup>db</sup>	1	-	-	-	-	112	1	-	-	-	-	105
Kiwi <sup>db</sup>	0	-	-	-	-	-	5	101	98	97	98	101
Laperouse <sup>db</sup>	7	108	103	107	104	106	5	99	107	100	98	109
Minotaur <sup>db</sup>	1	-	-	-	-	110	1	-	-	-	-	109

Data Source: National Variety Trials (2016–2020).

- denotes no data available

**Table 7: South West (long season) barley results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

SOUTH WEST							
Year		2015	2016	2017	2018	2019	2020
Mean yield (t/ha)		5.28	7.27	5.07	4.65	5.67	6.39
	No. trials	3	3	3	2	3	3
MALTING BARLEY							
Alestar <sup>db</sup>	17	100	105	100	98	102	101
Bass <sup>db</sup>	14	101	93	90	100	94	-
Commander <sup>db</sup>	17	100	92	97	91	92	97
Compass <sup>db</sup>	17	98	88	103	102	95	99
Fairview <sup>db</sup>	17	101	102	95	99	100	97
Flinders <sup>db</sup>	17	98	94	92	96	95	93
Gairdner	14	90	81	94	89	88	-
Granger <sup>db</sup>	17	91	96	104	95	100	100
Leabrook <sup>db</sup>	17	102	96	105	102	99	103
Maximus <sup>db</sup> CL	5	-	-	-	-	109	105
Navigator	11	96	94	93	101	-	-
RGT Planet <sup>db</sup>	14		114	110	101	109	111
Spartacus CL <sup>db</sup>	17	106	94	97	111	97	98
Westminster <sup>db</sup>	17	90	97	96	96	99	93
NON-MALTING BARLEY							
Banks <sup>db</sup>	14	97	98	97	108	102	-
Capstan	14	100	105	100	102	104	-
Charger	11	92	94	104	93	-	-
Explorer	14	104	101	97	82	94	-
Maltstar <sup>db</sup>	14	102	107	101	97	103	-
Nitro	12	100	107	-	-	106	101
Oxford	14	102	109	102	106	107	-
Rosalind <sup>db</sup>	17	109	104	109	102	102	110
Topstart	17	98	108	107	104	108	105
Urambie <sup>db</sup>	17	98	93	90	95	93	91
BARLEY UNDER MALT EVALUATION							
Beast <sup>db</sup>	1	-	-	-	-	101	-
Bottler <sup>db</sup>	14	-	106	107	101	106	105
Cyclops <sup>db</sup>	3	-	-	-	-	-	110
Kiwi <sup>db</sup>	17	98	102	99	94	100	99
Laperouse <sup>db</sup>	11	-	-	100	109	102	101
Minotaur <sup>db</sup>	3	-	-	-	-	-	100

Data Source: National Variety Trials (2015–2020).

- denotes no data available

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# OAT

## NEW VARIETIES

There are no new oat varieties for sowing in 2022.

## QUALITY

Variety selection should be based on agronomic traits, potential grain quality and marketing or end-use options. Grain quality traits for the milling industry include high groat per cent, high  $\beta$ -glucan, low screenings and high hectolitre weight. Growers should contact their buyer to ascertain which varieties will be accepted for milling quality prior to planting. Grain quality traits for improved animal feed include low hull lignin, high groat percentage, high protein and high oil content, resulting in high grain digestibility. Important hay quality traits are high digestibility, high water-soluble carbohydrates, low fibre and high protein.

The option of oats for hay is increasing in popularity where growers have identified them as profitable, as a tool to manage herbicide resistance and to spread risk. Variety performance for hay yield and quality is available in the 2020 Oat Newsletter at [pir.sa.gov.au](http://pir.sa.gov.au).

## INDUSTRY UPDATE

Australian Crop Breeders Ltd (ACB) developed new guidelines for wheat maturity classifications in 2020. Cereal maturity classifications and terminology in this guide have been assigned using the industry guidelines provided by Australian Crop Breeders Ltd. Oats have been classified into the same maturity groups as wheat based on data from the GRDC National Phenology Initiative and SAGIT Project S319 (Improving productivity of oats) and AgriFutures Australia Project PRJ-011029 (National Hay Agronomy). As maturity descriptions have been applied to wheat, barley and oats using the same system, the maturity descriptions for individual oat varieties will be different to previous editions of this publication.

In 2021 the National Oat Breeding Program received a joint investment from AgriFutures Australia and GRDC, under the leadership of InterGrain. The program aims to build upon the research in hay and milling oat breeding by South Australian Research and Development Institute to provide new varieties with a broad genetic base equipped to respond to the changing needs of Australian growers and exporters.

## DISEASE UPDATE

Red leather leaf and bacterial blight are common foliar diseases of oats in Victoria, while stem rust may be an issue following wet summer conditions. Red leather leaf is most severe in medium and high-rainfall zones, while bacterial blight can be found in all oat-growing regions. To reduce risk of loss from these stubble-borne diseases, growers should avoid sowing into oat stubble and choose resistant varieties where possible. Where red leather leaf infection develops, foliar fungicide application at tillering and stem elongation has been found to provide effective suppression. Currently, there are no foliar treatment options for bacterial blight. Fungicides can be used to control stem rust, with applications during flag leaf emergence to ear emergence stages most effective.

## ROYALTIES

Where applicable, growers selling oat seed or export hay will pay an End Point Royalty (EPR). An EPR of \$2/tonne (ex-GST) applies on all oat varieties bred by the National Oat Breeding Program for hay production. Refer to [aexco.com.au](http://aexco.com.au) for further information on hay, grain and seed royalties.



## MORE INFORMATION

[nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

[grdc.com.au](http://grdc.com.au)

- [Oats Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing oats in Victoria](#)
- [Agriculture Victoria Cereal Disease Guide](#)

[aexco.com.au](http://aexco.com.au)

- [Producing Quality Oat Hay booklet](#)

[extensionAUS.com.au/FieldCropDiseasesVic](http://extensionAUS.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

## VARIETY DESCRIPTIONS

Varieties have been listed according to quality classification grade and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

### Abbreviations used are:

- Ⓓ Denotes Plant Breeder's Rights apply
- CCN** Cereal cyst nematode
- BYDV** Barley yellow dwarf virus
- SARDI** South Australian Research and Development Institute

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## MILLING OAT

### BANNISTER<sup>Ⓓ</sup>

A quick maturing dwarf milling variety with wide adaption. Compared to Mitika<sup>Ⓓ</sup> it is about 13cm taller and flowers three to four days later. Similar to Mitika<sup>Ⓓ</sup> for groat percentage. Not suited to areas where CCN is a problem. Released 2013. Bred by the National Oat Breeding Program and marketed by Seednet. EPR \$2.30.

### BILBY<sup>Ⓓ</sup>

A dwarf, quick maturing milling oat. Grain yield similar to Williams<sup>Ⓓ</sup> and Bannister<sup>Ⓓ</sup>, with improved grain quality, low screenings, high groat percentage and improved  $\beta$ -glucan content. Not suited to areas where CCN is a problem. Released 2019. Bred by SARDI National Oat Breeding Program and marketed by Barenbrug. EPR \$2.50.

### DURACK<sup>Ⓓ</sup>

Very quick maturing, moderately tall variety widely adaptable to low to medium-rainfall zones and late planting in high-rainfall regions. Good early vigour and good lodging resistance with low screenings. Released 2016. Bred by SARDI National Oat Breeding Program and marketed by Barenbrug. EPR \$2.30.

### KOWARI<sup>Ⓓ</sup>

A quick maturing dwarf milling variety, slightly taller than Mitika<sup>Ⓓ</sup> and suited to medium to high-rainfall zones. It has good grain quality, improved  $\beta$ -glucan content and low screenings with good feed value. Not suited to areas where CCN is a problem. Released 2017. Bred by SARDI National Oat Breeding Program and marketed by Barenbrug. EPR \$2.50.

### MITIKA<sup>Ⓓ</sup>

A quick maturing dwarf variety suited to high-rainfall areas. It has excellent grain quality and provides excellent feed value. It is not suited to areas where CCN is a problem. Released 2005. Marketed by Barenbrug. EPR \$2.00.

### WILLIAMS<sup>Ⓓ</sup>

A quick maturing, short-tall milling oat suited to medium to high-rainfall zones. It is 15cm taller than Mitika<sup>Ⓓ</sup>, 5cm taller than Bannister<sup>Ⓓ</sup> and 15cm shorter than Yallara<sup>Ⓓ</sup>. A similar variety to Bannister<sup>Ⓓ</sup> but with slightly inferior grain quality. Produces high screenings when grown in low-rainfall areas. Released 2013. Bred by the National Oat Breeding Program and marketed by Barenbrug. EPR \$2.30.

**YALLARA<sup>Ⓛ</sup>**

Medium to tall, quick maturing variety suited to milling and hay. Suitable for growing in drier areas. Released 2009. Bred by SARDI and marketed by Seednet. EPR \$2.00.

**DUAL PURPOSE OAT****Hay/grazing/feed – BRUSHER<sup>Ⓛ</sup>**

Quick maturing tall oat, well suited to low and medium-rainfall areas. Released 2003. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**Hay/feed – MULGARA<sup>Ⓛ</sup>**

Quick maturing tall oat. Excellent hay colour and quality similar to Wintaroo<sup>Ⓛ</sup> with good grain yield. Released 2009. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**Hay/grazing/feed – WINTAROO<sup>Ⓛ</sup>**

Tall, mid maturing variety for all rainfall zones. Released 2003. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**HAY OAT****FORESTER<sup>Ⓛ</sup>**

A medium height, very slow hay variety adapted to high-rainfall and irrigated cropping regions. It has excellent lodging and shattering resistance and good early vigour. Released 2012. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**KINGBALE<sup>Ⓛ</sup>**

Kingbale is the first, single-gene imidazolinone (IMI) tolerant oaten hay variety. A mid maturing, tall variety with improved tolerance to soil residual IMI herbicides. Sentry<sup>®</sup>, pending successful registration, will be the **only** imidazolinone herbicide registered for use on Kingbale<sup>Ⓛ</sup>. Yield data is currently limited. Launched 2019. Bred by Grains Innovation Australia (GIA) and marketed by InterGrain, seed will be available for planting in 2022 pending a Sentry<sup>®</sup> registration. Note, delays may occur and Kingbale<sup>Ⓛ</sup> may not be released if a Sentry<sup>®</sup> registration for grain production is not received in March 2022. EPR \$3.65.

**KOORABUP<sup>Ⓛ</sup>**

Mid-tall potential hay oat with mid-quick maturity. Similar height, grain yield and stem diameter to Yallara<sup>Ⓛ</sup>, but has a later maturity of two to four days. Hay quality is similar to Wintaroo. Released 2019. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**TUNGOO<sup>Ⓛ</sup>**

A medium to tall, mid-slow maturing variety. Grain yield poor, but hay yield similar to Kangaroo. Released 2012. Bred by SARDI and marketed by AEXCO. EPR \$2.00.

**Table 1: Oat time of sowing based on phenology speed.**

This table is a guide only and has been compiled from data provided by SAGIT Project S319 (Improving productivity of oats) and AgriFutures Project PRJ-011029 (National Hay Agronomy).

MALLEE		April				May				June			
Speed	Example cultivar												
Very slow	Forester <sup>db</sup>												
Mid-slow	Kingbale <sup>db</sup>												
Mid	Wintaroo <sup>db</sup>												
Quick	Yallara <sup>db</sup>												
Very quick	Durack <sup>db</sup>												
WIMMERA		April				May				June			
Very slow	Forester <sup>db</sup>												
Mid-slow	Kingbale <sup>db</sup>												
Mid	Wintaroo <sup>db</sup>												
Quick	Yallara <sup>db</sup>												
Very quick	Durack <sup>db</sup>												
NORTH CENTRAL		April				May				June			
Very slow	Forester <sup>db</sup>												
Mid-slow	Kingbale <sup>db</sup>												
Mid	Wintaroo <sup>db</sup>												
Quick	Yallara <sup>db</sup>												
Very quick	Durack <sup>db</sup>												
NORTH EAST		April				May				June			
Very slow	Forester <sup>db</sup>												
Mid-slow	Kingbale <sup>db</sup>												
Mid	Wintaroo <sup>db</sup>												
Quick	Yallara <sup>db</sup>												
Very quick	Durack <sup>db</sup>												
SOUTH WEST		April				May				June			
Very slow	Forester <sup>db</sup>												
Mid-slow	Kingbale <sup>db</sup>												
Mid	Wintaroo <sup>db</sup>												
Quick	Yallara <sup>db</sup>												
Very quick	Durack <sup>db</sup>												

Yellow = earlier than optimum.

Green = optimum sowing time.

Red = later than optimum.

**Table 2: Agronomic characteristics of oat varieties and disease resistance ratings.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, National Oat Breeding Program and seed companies. Disease reactions have been sourced from [Agriculture Victoria Cereal Disease Guide \(2021\)](#) and [National Variety Trials disease ratings \(2021\)](#).

Variety	End use	Height	Maturity	Hectolitre weight	Stem rust	Leaf rust	CCN		BYDV	Septoria avenae	Bacterial blight	Red leather leaf
							Res	Tol				
MILLING OATS												
Bannister <sup>db</sup>	M	TD	Q	H	S	MSS	MR	I	MS	MSS	S	MSS
Bilby <sup>db</sup>	M	D	Q	H	S	S	VS	-	MSS <sub>p</sub>	SVS	S	S
Durack <sup>db</sup>	M/H	MT	VQ	H	S	MS	RMR	MI	MSS	S	S	VS
Kowari <sup>db</sup>	M	D	Q	H	S	S	VS	-	MSS	S	MSS	S
Mitika <sup>db</sup>	M	D	Q	H	S	S	VS	I	S	SVS	MSS	SVS
Williams <sup>db</sup>	M	ST	Q	H	S	MRMS	S	I	MS	MS	MSS	MS
Yallara <sup>db</sup>	M	MT	Q	H	S	S	R	I	MS	MSS	MSS	SVS
HAY/GRAZING/FEED OATS												
Brusher <sup>db</sup>	H/G/F	T	Q	M	S	S	R	MI	MS	MS	MS	MS
Forester <sup>db</sup>	H	MT	VS	L	S	MS	MS	MI	S	MR	S	MRMS
Kingbale <sup>db</sup>	H	T	M	-	-	-	-	-	-	-	MS <sub>p</sub>	SVS
Koorabup <sup>db</sup>	H	MT	M-Q	H	S	MSS	S	-	MS	MRMS <sub>p</sub>	MSS	SVS
Mulgara <sup>db</sup>	H/F	T	Q	M	MS	MS	R	MT	MS	MS	MR	S
Tungoo <sup>db</sup>	H	MT	M-S	L	S	MS	R	MT	MS	MR	MR	MS
Wintaroo <sup>db</sup>	H/G	T	M	M	S	S	R	MT	MS	MS	MS	SVS

Data Source: Agriculture Victoria Cereal Disease Guide (2021), NVT Disease Ratings (2021).

NOTE: New maturity classifications have been assigned based on the [Industry Guide for Wheat Variety Maturity Description](#) by Australian Crop Breeders Ltd to achieve consistent maturity descriptions across all cereals.

End use: M = milling, F = feed grain, G = grazing, H = hay. Hectolitre weight: VH = very heavy, H = heavy, M = medium, L = light.

Plant height: D = dwarf, TD = tall dwarf, T = tall, ST = short tall, MT = moderate tall.

Maturity: VQ = very quick, Q = quick, M = mid, M-S = mid-slow, VS = very slow.

R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, MSS = moderately susceptible to susceptible, S = susceptible, SVS = susceptible to very susceptible, VS = very susceptible.

<sup>p</sup> = provisional ratings – treat with caution.

- denotes no rating available.

**Table 3: Oat disease guide summary.**

Disease	Organism	Symptoms	Occurrence	Hosts	Control
<b>FOLIAR</b>					
Leaf rust	<i>Puccinia coronata</i> f.sp. <i>avenae</i>	Small circular orange pustules on upper leaf surface.	More severe during moist conditions with temperatures between 15-22°C.	Volunteer oats and wild oats.	Resistant varieties. Control volunteer and wild oats over the summer.
Stem rust	<i>Puccinia graminis</i> f.sp. <i>avenae</i>	Large red-brown pustules, rupture in leaf surface.	Infection requires warm (15-30°C) moist conditions.	Volunteer oats and wild oats.	Resistant varieties. Control volunteer and wild oats over summer.
Septoria blotch	<i>Phaeosphaeria avenaria</i>	Dark brown purple spots on leaves, sheaths and stems. Head and grain may become infected.	Prefers cool, rainy weather, especially coastal districts.	Spores spread in autumn by raindrop splashes from oat residues.	Resistant varieties. Crop rotation, bury or graze infected stubble. Avoid early sowing in high-rainfall areas.
BYDV	Barley yellow dwarf virus	Leaf tip and margins turn red with interveinal chlorosis, mottling and stunting.	Transmitted by aphids.	Hosts include all cereals and grasses, including pastures.	Resistant varieties. Chemical control of insects may be suitable for high-value crops.
Halo blight	<i>Pseudomonas syringae</i> pv. <i>coronafaciens</i>	Light green, yellow or brown halo spot on leaves and sheaths. Leaves may wither and die.	Moist weather provides ideal conditions.	Bacteria on seed and crop debris are spread by rain splash, direct leaf contact, or aphids.	Avoid susceptible varieties, use clean seed in clean paddocks. Destroy infected oat stubble.
Stripe blight	<i>Pseudomonas syringae</i> pv. <i>striaefaciens</i>	Spots on leaves lengthen to form brown stripes on leaves and sheaths. Leaves may wither and die.	Moist weather provides ideal conditions.	Bacteria on seed and crop debris are spread by rain splash, direct leaf contact, or aphids.	Avoid susceptible varieties, use clean seed in clean paddocks, and destroy infected oat stubble.
Powdery mildew	<i>Blumeria graminis</i> f. sp. <i>avenae</i>	White powdery spores on upper leaf surfaces. Underside of leaves turn yellow to brown.	Favoured by high humidity and temperatures between 15-22°C.	Volunteer oats, oat stubble, windborne spores.	Avoid very susceptible varieties.
Red leather leaf	<i>Spermospora avenae</i>	Long reddish lesions with buff centres. Leaves may look and feel leathery.	High-rainfall provides ideal conditions.	Stubble and rain splash.	Avoid susceptible varieties and rotate crops. Remove infected oat stubble.
<b>GRAIN</b>					
Smut	<i>Ustilago segetum</i> var. <i>hordei</i> . and <i>Ustilago avenae</i>	Grain replaced with dark brown-black powdery spores.	Moist conditions at flowering and temperatures between 15-25°C.	Airborne spores lodge in hulls, glumes or seed coats.	Clean seed and use seed treatment. Avoid susceptible varieties.
<b>ROOT/CROWN</b>					
Cereal cyst nematode (CCN)	<i>Heterodera avenae</i>	Yellow or pale green patches in crop. Stunted, weak plants with knotted root systems.	Can survive in soil between susceptible cereal crops for up to two years.	Cereals and some grasses, especially wild oats.	Resistant or tolerant varieties. Crop rotation. Weed control.

Data Sources: This table has been developed from information in the publications Wallwork H (2000) (Ed) *Cereal Root and Crown Diseases* (Grains Research and Development Corporation, SARDI) and Wallwork H (2000) (Ed) *Cereal Leaf and Stem Diseases* (Grains Research and Development Corporation, SARDI). Reviewed by Mark McLean, Agriculture Victoria (2021).

**Table 4: North Central oat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

NORTH CENTRAL						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		5.91	3.76	0.62	2.05	4.61
	No. trials	2	2	2	2	2
Bannister <sup>db</sup>	10	126	108	103	106	109
Bilby <sup>db</sup>	10	112	103	107	105	103
Durack <sup>db</sup>	10	78	90	97	89	91
Echidna	10	115	94	83	95	106
Koorabup <sup>db</sup>	10	79	95	87	91	95
Kowari <sup>db</sup>	10	100	96	103	98	98
Mitika <sup>db</sup>	10	94	91	97	94	96
Possum	10	98	93	96	94	98
Williams <sup>db</sup>	10	119	107	101	95	107
Wombat	4	106	95	-	-	-
Yallara <sup>db</sup>	10	79	98	92	99	95

Data Source: National Variety Trials (2016–2020).

- denotes no data available

**Table 5: North East oat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

NORTH EAST						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		6.34	4.05	1.89	3.00	4.06
	No. trials	1	1	1	1	1
Bannister <sup>db</sup>	5	123	103	109	95	115
Bilby <sup>db</sup>	5	110	104	101	107	111
Durack <sup>db</sup>	5	78	96	90	104	91
Echidna	5	111	85	95	84	118
Koorabup <sup>db</sup>	5	82	93	101	86	79
Kowari <sup>db</sup>	5	98	100	93	108	108
Mitika <sup>db</sup>	5	92	95	88	106	107
Possum	5	95	95	92	100	106
Williams <sup>db</sup>	5	114	104	112	87	106
Wombat	2	104	90	-	-	-
Yallara <sup>db</sup>	5	85	96	101	93	78

Data Source: National Variety Trials (2015–2020).

- denotes no data available



**Table 6: South West oat results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

SOUTH WEST						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		6.16	3.11	3.85	4.91	4.61
	No. trials	2	2	1	2	2
Bannister <sup>db</sup>	9	129	102	104	122	117
Bilby <sup>db</sup>	9	112	106	101	108	112
Durack <sup>db</sup>	9	72	103	95	81	88
Echidna	9	121	104	109	112	112
Koorabu <sup>db</sup>	9	78	88	99	86	77
Kowari <sup>db</sup>	9	99	108	99	98	107
Mitika <sup>db</sup>	9	92	108	100	93	103
Possum	9	96	106	100	97	103
Williams <sup>db</sup>	9	112	101	98	117	107
Wombat	4	110	102	-	-	-
Yallara <sup>db</sup>	9	82	87	100	85	78

Data Source: National Variety Trials (2016–2020).

- denotes no data available

## ACKNOWLEDGEMENTS

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# TRITICALE

Triticale is no longer evaluated as part of the GRDC National Variety Trials (NVT) program. Variety descriptions, agronomic information and disease reactions will continue to be presented in this publication.

Triticale, a cross between wheat and cereal rye, has a niche on farms across Victoria due to several attributes. It has a reputation for tolerance to harsh soil conditions, such as acid and alkaline soils, and soils of low trace element availability. It is a tall crop bred for greater straw strength which can be useful in rocky paddocks or circumstances where crops have been known to lodge.

## NEW VARIETIES

There are no new triticale varieties available for 2022.

## DISEASE UPDATE

In general, triticale has useful levels of resistance to diseases and will require less disease protection than other cereal crops. It is important, however, to consult a current cereal variety disease guide for ratings against current disease strains.

## MORE INFORMATION

[nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results up to 2015 and links to variety information
- NVT Long-term Yield Reporter

[grdc.com.au](http://grdc.com.au)

- [Triticale Southern Region – GRDC GrowNotes™](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Triticale in Victoria](#)
- [Agriculture Victoria Cereal Disease Guide](#)

[extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

## VARIETY DESCRIPTIONS

The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation, along with marketing requirements and access to markets. Where possible, in addition to data supplied below, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(b) denotes Plant Breeder's Rights apply.  
End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

**ASTUTE<sup>Ⓛ</sup>**

A mid-season fully awned variety suited to medium to high-yielding environments. An alternative to Hawkeye<sup>Ⓛ</sup>. Released 2015. Bred and marketed by AGT, available through AGT Seed Sharing™ and through AGT Affiliates. EPR \$2.75.

**BISON<sup>Ⓛ</sup>**

An early to mid-season reduced-awn variety best suited to low to medium-yielding environments. Released 2015. Bred and marketed by AGT, available through AGT Seed Sharing™ and through AGT Affiliates. EPR \$2.75.

**CARTWHEEL<sup>Ⓛ</sup>**

A long-season, dual-purpose triticale suitable for grazing and grain. Recovery from grazing is excellent in the winter months. Grain yield is equivalent to Tobruk<sup>Ⓛ</sup> in southern NSW dual-purpose, mixed-cereal trials. Released 2017. Bred by University of Sydney. Seed available from AGF Seeds. EPR TBC.

**FUSION<sup>Ⓛ</sup>**

A mid-season, fully awned, grain-only triticale variety. A moderately tall variety that yields well in dry or short finishes. Released 2012. Bred and marketed by AGT, available through AGT Seed Sharing™. EPR \$3.00.

**GOANNA**

An early to mid-season, fully awned, grain-only triticale. Released in 2011 by Cooper & Elleway. No EPR.

**JOEY**

An early to mid-season tall, reduced-awn variety suitable for forage and grain production. Joey has good early vigour and fast winter forage production. High test weight. Bred by Cooper & Elleway. Released 2020, limited seed available. No EPR.

**KM10**

A fast-growing, very early to early maturing variety with good early production of forage. Tends to produce smaller grain and is ideally suited to short-season environments. Released 2015 by Cooper & Elleway. No EPR.

**KOKODA<sup>Ⓛ</sup>**

A long-season, dual-purpose line that can be sown early March (some off-types may occur when sown early). Good first dry matter production equivalent to Endeavour<sup>Ⓛ</sup> and excellent recovery in winter for second dry matter production. In NSW trials, first and second dry matter production often yielded better than winter wheats. Useful for hay production as it is semi-awnless. Released in 2019. Bred by University of Sydney. Seed available from AGF Seeds. EPR TBC.

**WONAMBI**

A later maturing spring or facultative type variety suitable for grazing, forage conservation and grain production. Released 2018 by Cooper & Elleway and marketed by Naracoorte Seeds. No EPR.

**Table 1: Triticale time of sowing guide.**

This table is a guide only and has been compiled from observations of the breeder and agronomists.

MALLEE	April				May				June				July			
Late																
Mid-late																
Mid																
Early-mid																
WIMMERA	April				May				June				July			
Late																
Mid-late																
Mid																
Early-mid																
NORTH CENTRAL	April				May				June				July			
Late																
Mid-late																
Mid																
Early-mid																
NORTH EAST	April				May				June				July			
Late																
Mid-late																
Mid																
Early-mid																
SOUTH WEST	April				May				June				July			
Late																
Mid-late																
Mid																
Early-mid																

Yellow = earlier than optimum.

Green = optimum sowing time.

Red = later than optimum.

**Table 2: Agronomic characteristics of triticale varieties and disease resistance ratings.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder. Disease reactions have been sourced from Agriculture Victoria Cereal Disease Guide (2021).

Variety	Rainfall			Maturity	Height	Rust			Yellow leaf spot	Septoria tritici	CCN resistance
	Low <350mm	Med 350 to 500mm	High >500mm			Stem	Stripe	Leaf			
Astute <sup>Ⓛ</sup>		✓	✓	M	M-T	RMR	MRMS	RMR	MRMS	RMR	R
Bison <sup>Ⓛ</sup>	✓	✓		E-M	T	RMR	MR	RMR	MR	RMR	R
Cartwheel <sup>Ⓛ</sup>		✓	✓	L	-	R	R	R	MR	RMR	R <sub>p</sub>
Fusion <sup>Ⓛ</sup>	✓	✓		M	M-T	R	RMR	R	MRMS	MR	R
Goanna	✓	✓		E-M	T	R	SVS	RMR	MR	MRMS	R
Joey	✓	✓		E-M	T	S	MRMS/MSS <sub>p</sub>	RMR/MS	MR	RMR	MS
KM10	✓	✓		VE-E	M-T	R	RMR	MR/S <sub>p</sub>	MR	MR	S
Kokoda <sup>Ⓛ</sup>		✓	✓	M-L	-	R <sub>p</sub>	R	RMR	MR	RMR	R
Wonambi		✓	✓	M-L	T	R	S	R	MR	RMR	MS

Maturity: VE = very early, E = early, M = mid, L = late, Height: M = medium, T = tall.

R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, MSS = moderately susceptible to susceptible, S = susceptible, SVS = susceptible to very susceptible, VS = very susceptible.

<sub>p</sub> = provisional ratings - treat with caution.

- denotes no rating available

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# CANOLA

Canola is grown for its seed, which is crushed for oil used for industrial purposes like biodiesel. It is also used in margarine, cooking oil, salad oil and edible oil blends. After the oil is extracted, the by-product is a protein-rich meal used by intensive livestock industries.

## NEW VARIETIES

Fifteen new canola varieties have been released with seed available for sowing in 2022. Not all varieties (including new and older varieties) have been trialled in recent years and as a result, NVT tested years are provided in the variety descriptions.

The new listings for 2022 are:

- Clearfield® tolerant hybrids – Hyola® Equinox CL, Hyola® Feast CL, Pioneer® 45Y95 CL, RGT Nizza CL
- Triazine-tolerant varieties – DG Bidgee TT, DG Murray TT, RGT Capacity TT
- Triazine-tolerant specialty varieties – Monola® 422TT
- Roundup Ready® variety – Pioneer® 44Y30 RR
- Liberty® + triazine dual-herbicide tolerant variety – InVigor® LT 4530P
- TruFlex® canola varieties – DG Bindo TF, DG Lofty TF, Nuseed® Emu TF
- TruFlex® specialty variety – VICTORY® V55-04TF
- TruFlex® + Clearfield® dual-herbicide variety – Hyola® Battalion XC

Varities removed this year are:

- Conventional OP variety – AV Garnet<sup>1</sup>
- Clearfield® tolerant varieties – Banker CL, Pioneer® 44Y90 CL, Pioneer® 45Y91 CL, Saintly CL, SF Edimax CL
- Roundup Ready® varieties – DG 408RR, Hyola® 404RR, Pioneer® 43Y23 RR, Pioneer® 43Y29 RR

- Triazine-tolerant varieties – DG 670TT, Hyola® 350TT, Hyola® 559TT, InVigor® T 3510, Pioneer® 44T02 TT, SF Turbine TT

- Triazine-tolerant specialty variety – Monola® 416TT
- Dual-herbicide tolerant variety – Hyola® 580CT
- TruFlex® dual-herbicide varieties – Hyola® 530XT, Hyola® 540XC

## DUAL-PURPOSE WINTER CANOLA

Long season 'dual-purpose' winter canola varieties for grazing and/or grain production can perform well in the high-rainfall zone. These dual-purpose hybrids are usually sown in autumn but are occasionally sown in late spring or early to mid-summer and grazed until autumn. Winter-type canola varieties are currently not evaluated through the NVT program. Consult the GRDC publication: [\*Spring-Sown Winter Canola\*](#).

## SPECIALTY CANOLA (HOLL)

Specialty canola varieties produce oilseeds with a highly stable oil profile (high oleic, low linolenic acids, or 'HOLL'). This produces an oil with extended frying life and improved shelf stability. Specialty canola is grown under closed-loop contracts with a premium paid to growers when the grain meets specifications. Specialty canola is grown in the same way as commodity canola. If grown adjacent to commodity canola, however, the outer perimeter may need to be harvested separately and delivered as commodity canola.

## TRUFLEX® CANOLA

TruFlex® canola, developed by Bayer, provides an extended glyphosate application window up to the first flower. It also gives an opportunity to apply Roundup Ready® herbicides at higher rates for enhanced weed control. Further information on TruFlex® canola can be found at [truflex.com.au](http://truflex.com.au).



## LIBERTYLINK® CANOLA

LibertyLink® canola, developed by BASF, offers a new mode of action for post-emergent weed control. LibertyLink® hybrids combine tolerance to Liberty® herbicide with existing herbicide options, to produce dual-herbicide tolerant hybrids. LibertyLink® canola hybrids include the PodGuard® trait to reduce harvest losses and flexible timing of windrowing or direct heading. Further information on LibertyLink® canola can be found at [myseed.com.au](http://myseed.com.au).

## DISEASE UPDATE

Blackleg has two forms – crown canker that causes disease at the base of the plant, and upper canopy infection (UCI) causing disease in the stems and branches. These forms are separate infections, although both originate from canola stubble. Two types of blackleg resistance genes exist in Australian canola varieties: major and minor genes. Minor gene resistance reduces the severity of crown canker but does not completely stop the disease. Minor genes are additive; the more genes present in a cultivar, the higher the resistance. Although minor gene resistance reduces the severity of crown canker, effective major gene resistance will give protection from both crown canker and UCI.

Varieties are classified into resistance groups which describe the major genes present (Table 2). Effective major resistance genes stop the blackleg fungus from infecting the plant, however, blackleg can change rapidly, overcoming major resistance genes. Varieties reliant on major resistance genes tend to become more susceptible overtime; if the major gene is overcome it will be completely ineffective. A cultivar can have none, one or multiple major resistance genes, and Australian cultivars normally have a combination of major and minor genes, therefore do not become completely susceptible if the major gene is overcome. If you have grown the same variety for three years or more and have observed increasing disease severity causing yield loss, it may be prudent to choose a variety from a different resistance group.

Varietal resistance ratings are reported each year in the BlacklegCM app and the Blackleg Management Guide, and growers are encouraged to consult these resources when choosing canola varieties. The app will predict yield losses and enable you to explore different management and fungicide options and the Blackleg Management Guide is updated twice a year to reflect frequent changes in blackleg resistance.

Australian canola varieties have no known resistance to sclerotinia. In some seasons, the level of sclerotinia stem rot varies between canola varieties; this relates to differences in region, time of flowering and rainfall events. The SclerotiniaCM app can predict yield losses and provide probable returns from fungicide applications.

## MORE INFORMATION

### [nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

### [grdc.com.au](http://grdc.com.au)

- [Canola Southern region – GRDC GrowNotes™](#)
- [Blackleg Management Guide](#) updated in autumn and spring
- [Tip & Tactics: Better Mouse Management](#)
- [Ten Tips To Early-Sown Canola](#)
- [20 Tips For Profitable Canola – Victoria](#)
- [GRDC Southern region NVT Harvest reports](#)

### [agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing canola](#)
- [Blackleg of canola](#)
- [Canola diseases](#)

### [BlacklegCM App](#)

- Decision-support tool for profitable management of blackleg. Best used on tablet. Not available on iPhone.

### [SclerotiniaCM App](#)

- Forecasting model to assist canola growers with fungicide application decisions. Best used on tablet. Not available on iPhone.

### [extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips.

### [canolaflowering.com.au](http://canolaflowering.com.au)

- A simple phenology model that uses 60 years of local weather data to calculate a range of possible flowering dates for a specific environment. Developed by CSIRO.

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are

provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

OP = open pollinated

Blackleg ratings: R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible

p = provisional ratings – treat with caution

(b) denotes Plant Breeder's Rights apply

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## CONVENTIONAL VARIETIES

### Hybrid – NUSEED® DIAMOND

Early maturing hybrid of medium height suited to medium-rainfall zones. Blackleg rating MR. NVT tested 2012-20. Marketed by Nuseed.

### Hybrid – NUSEED® QUARTZ

Mid maturing hybrid of medium height bred to replace AV-Garnet<sup>®</sup>. Suited to medium to high-rainfall zones. Blackleg rating R. NVT tested 2016-20. Released 2017. Marketed by Nuseed.

## CLEARFIELD® VARIETIES

### Hybrid – HYOLA® 970CL

Late maturing winter dual-purpose hybrid with very high biomass dry matter and tall plant height. Adapted to high to very high-rainfall zones. Blackleg rating R. Blackleg group H. Not tested in NVT trials. Marketed by Advanta Seeds.

### NEW – Hybrid – HYOLA® EQUINOX CL

Mid maturing spring Clearfield® hybrid. Suitable for medium and high-rainfall zones. Blackleg rating R. Blackleg group ADF. NVT tested 2021. Released 2021. Marketed by Advanta Seeds.

### NEW – Hybrid – HYOLA® FEAST CL

Mid-late maturing winter hybrid, slightly earlier than Hyola® 970CL. Adapted to medium-high to very high-rainfall zones. Blackleg rating R. Blackleg group H. Not tested in NVT trials. Released 2021. Marketed by Advanta Seeds.

### Hybrid – PHOENIX CL

Mid-late maturing dual-purpose winter variety. Potential to produce very high biomass, with a slightly shorter mature plant height than some other dual-purpose canola. Suited to early sowing and spring sowing in high-rainfall areas. Blackleg rating R. Not tested in NVT trials. Independent trial results demonstrate good grain yield and oil content. Released 2019. Marketed by AGF Seeds.

### Hybrid – PIONEER® 43Y92 CL

Early maturing hybrid suited to low to medium-rainfall zones. Blackleg rating R-MR. NVT tested 2016-21. Released 2017. Marketed by Pioneer Seeds.

### Hybrid – PIONEER® 44Y94 CL

Mid-early maturing Clearfield® hybrid. Medium-tall height. Suited to a range of rainfall zones in dryland and irrigation areas. Blackleg rating R-MR. NVT tested 2019-21. Released 2020. Marketed by Pioneer Seeds.

### Hybrid – PIONEER® 45Y93 CL

Mid maturing hybrid. Suited to medium to high-rainfall and irrigation zones. Medium-tall height. Blackleg rating R-MR. NVT tested 2017-21. Released 2018. Marketed by Pioneer Seeds.

### NEW – Hybrid – PIONEER® 45Y95 CL

Mid maturing hybrid. Suited to medium to high-rainfall environments and irrigation zones. Blackleg rating R-MR (company rating). NVT tested 2021. Released 2021. Marketed by Pioneer Seeds.

### NEW – Hybrid – RGT NIZZA CL

Early winter dual-purpose hybrid. Suited to early sowing and spring sowing in high-rainfall areas. Blackleg rating R. Not tested in NVT trials. Released 2021. Marketed by Seed Force. EPR \$12.00.

## CLEARFIELD® SPECIALTY VARIETIES

### VICTORY® Specialty Oil – VICTORY® V75-03CL

Mid maturing specialty (high oleic, low linolenic acid oil) hybrid. Medium plant height. Blackleg rating MR. NVT tested 2018-21. Released 2019. Bred by Cargill. Marketed by AWB under contract.

### VICTORY® Specialty Oil – VICTORY® V7001CL

Late maturing specialty (high oleic, low linolenic acid oil) hybrid. Medium to tall height. Blackleg rating MR. Bred by Cargill. Marketed by AWB under contract.

**VICTORY® Specialty Oil – VICTORY® V7002CL**

Early-mid maturing specialty (high oleic, low linolenic acid oil) hybrid. Short to medium height. Blackleg rating R-MR. NVT tested 2017-21. Bred by Cargill. Marketed by AWB under contract.

**TRIAZINE-TOLERANT VARIETIES****OP – ATR BONITO<sup>Ⓛ</sup>**

Early-mid maturing variety for low to medium-rainfall zones. Short to medium height. Alternative to ATR Stingray<sup>Ⓛ</sup> or ATR Gem<sup>Ⓛ</sup>. Blackleg rating MS. NVT tested 2012-21. Bred and marketed by Nuseed. EPR \$5.00.

**OP – ATR MAKO<sup>Ⓛ</sup>**

Early-mid maturing variety for low to medium-rainfall zones. Comparable yield to ATR Bonito<sup>Ⓛ</sup>. Blackleg rating MR-MS. NVT tested 2014-18. Bred and marketed by Nuseed. EPR \$5.00.

**OP – ATR STINGRAY<sup>Ⓛ</sup>**

Early maturing variety. Short to medium height. Blackleg rating MR-MS. NVT tested 2010-21. Bred by AgSeed Research and Agriculture Victoria. Marketed by Nuseed.

**OP – ATR WAHOO<sup>Ⓛ</sup>**

Mid maturing variety for medium to high-rainfall zones and irrigation. Medium height. Blackleg rating MS. NVT tested 2013-21. Bred and marketed by Nuseed. EPR \$5.00.

**NEW – OP – DG BIDGEE TT<sup>Ⓛ</sup>**

Early-mid maturing open pollinated variety. Medium height. Anticipated blackleg rating MR. NVT tested 2020-21 as DG1903TT. Released 2021. Bred and marketed by Nutrien Ag Solutions. EPR \$5.00.

**NEW – OP – DG MURRAY TT<sup>Ⓛ</sup>**

Mid-late maturing open pollinated variety with good seedling vigour and medium height. Anticipated blackleg rating R-MR. NVT tested 2019-21 as DG1902TT. Released 2021. Bred and marketed by Nutrien Ag Solutions. EPR \$5.00.

**Hybrid – HYOLA® BLAZER TT**

Mid-early maturing hybrid. Suited to medium-high to very high-rainfall zones including irrigation. Blackleg rating R. Blackleg group ADF. NVT tested 2019-21. Released 2020. Bred and marketed by Advanta Seeds.

**Hybrid – HyTTec® TRIDENT**

Early maturing hybrid. Medium-tall height. Suitable for low to medium-rainfall zones. Blackleg rating

R. NVT tested 2017-21. Released 2019. Bred and marketed by Nuseed. EPR \$10.00.

**Hybrid – HyTTec® TRIFECTA**

Mid maturing hybrid variety. Medium-tall height. Suitable for medium to high-rainfall zones. Blackleg rating R. NVT tested 2018-21. Released 2020. Marketed by Nuseed. EPR \$10.00.

**Hybrid – HyTTec® TROPHY**

Early to mid-early maturing hybrid. Medium-tall height. Blackleg rating R-MR. NVT tested 2017-21. Released 2017. Marketed by Nuseed. EPR \$10.00.

**Hybrid – InVigor® T 4510**

Early-mid maturing hybrid. Medium-tall height. Suited to low to medium-rainfall zones. Blackleg rating MR-MS. NVT tested 2016-21. Marketed by BASF.

**Hybrid – InVigor® T 6010**

Mid-late maturing hybrid variety. Suited to medium to high-rainfall zones. Medium plant height. Replacement for InVigor® T 4510 in higher-rainfall areas. Blackleg rating MS. NVT tested 2019-21. Released 2020. Marketed by BASF.

**Hybrid – PIONEER® 45T03 TT**

Mid maturing hybrid. Suited to high-rainfall and irrigation zones. Medium-tall height. Blackleg rating MR. NVT tested 2018-20. Released 2018. Marketed by Pioneer Seeds.

**NEW – Hybrid – RGT CAPACITY TT**

Early-mid maturing hybrid with similar flowering to SF Turbine TT. Suited to low to medium-rainfall areas. Medium height. Blackleg rating MS. NVT tested 2019-21 as SFR65-028TT. Released 2021. Marketed by Seed Force. EPR \$10.00.

**Hybrid – SF DYNATRON TT™**

Mid maturing hybrid canola. Medium-tall height. Blackleg rating MS. NVT tested 2019-21 as CHYB3688TT. Released 2020. Marketed by Seed Force. EPR \$10.00.

**Hybrid – SF IGNITE TT**

Mid maturing hybrid. Suited to medium to high-rainfall zones. Medium height. Blackleg rating MR-MS. NVT tested 2016-21. Marketed by Seed Force. EPR \$10.00.

**Hybrid – SF SPARK TT**

Early maturing hybrid. Suited to low to medium-rainfall areas. Medium height. Blackleg rating MR. NVT tested 2018-21. Released 2018. Marketed by Seed Force. EPR \$10.00.

## TRIAZINE-TOLERANT SPECIALTY VARIETIES

### OP Specialty Oil – MONOLA® 420TT

Early-mid maturing open pollinated variety. Short height. Suitable alternative to Monola® 416TT. Blackleg rating R-MR. NVT tested 2019-21 as NL1015. Released 2020. Marketed under closed-loop contract through Nuseed.

### NEW – OP Specialty Oil – MONOLA® 422TT

Early-mid maturing open pollinated variety. Short height. Suitable alternative to Monola® 420TT or Monola® 416TT. Anticipated blackleg rating MR. NVT tested 2020-21 as NL1131. Released 2021. Marketed under a closed loop contact through Nuseed.

### Hybrid Specialty Oil – MONOLA® H421TT

Early maturing hybrid variety. Medium height. Suitable for low to medium-rainfall zones or a late sowing option. Blackleg rating R-MR. NVT tested 2019-21 as NMH18T446. Marketed under closed-loop contract through Nuseed.

## ROUNDUP READY® VARIETIES

### Hybrid – InVigor® R 3520

Early maturing hybrid. Suited to early season areas or later sowing. Medium height. Blackleg rating MR. NVT tested 2016-21. Released 2017. Bred and marketed by BASF.

### Hybrid – InVigor® R 5520P

Mid maturing hybrid suited to medium to high-rainfall areas. PodGuard® trait for shatter tolerance. Blackleg rating MR. NVT tested 2015-21. Bred and marketed by BASF.

### Hybrid – NUSEED® GT-53

Mid maturing hybrid. Medium-tall height. Blackleg rating R. NVT tested 2014-20. Marketed by Nuseed.

### Hybrid – PIONEER® 44Y27 RR

Early-mid maturing hybrid. Ideally suited to low to medium-rainfall zones. Blackleg rating MR. NVT tested 2016-21. Marketed by Pioneer Seeds.

### NEW – Hybrid – PIONEER® 44Y30 RR

Early-mid maturing hybrid. Adaptable across a broad range of environments. Blackleg rating MR. NVT tested 2020-21. Released 2021. Marketed by Pioneer Seeds.

### Hybrid – PIONEER® 45Y28 RR

Mid maturing hybrid. Suited to mid to high-yielding environments. Medium-tall height. Blackleg rating

MR. NVT tested 2017-21. Released 2018. Marketed by Pioneer Seeds.

## ROUNDUP READY® SPECIALTY VARIETIES

### VICTORY® Specialty Oil – VICTORY® V5003RR

Mid maturing specialty (high oleic, low linolenic acid oil) hybrid. Medium height. Blackleg rating R-MR. NVT tested 2016-21. Released 2018. Bred by Cargill. Marketed by AWB under contract.

## DUAL-HERBICIDE-TOLERANT VARIETIES

### Hybrid – BASF 3000 TR

Early maturing Roundup® + triazine-tolerant hybrid suited to low to medium-rainfall zones. Blackleg rating MS-S. NVT tested 2015-19. Marketed by BASF.

### Hybrid – HYOLA® ENFORCER CT

Mid-early maturing Clearfield® + triazine-tolerant hybrid variety. Suited to medium-low to high-rainfall zones. Medium height. Blackleg rating R. Blackleg group ADF. NVT tested 2019-21. Released 2020. Bred and marketed by Advanta Seeds.

### NEW – Hybrid Liberty®/triazine-tolerant – InVigor® LT 4530P

New LibertyLink® hybrid with tolerance to both Liberty® and triazine herbicides. The first triazine-tolerant variety with PodGuard® for shatter tolerance. Early-mid maturing variety suited to medium-rainfall zones. Blackleg rating MR. NVT tested 2020-21 as AN20LT001. Released 2021. Marketed by BASF.

## TRUFLEX® CANOLA VARIETIES

### NEW – Hybrid – DG BINDO TF

Early-mid maturing TruFlex® hybrid with medium height and very good seedling vigour. Anticipated blackleg rating R-MR. NVT tested 2021 as DG2102XX. Released 2021. Bred and marketed by Nutrien Ag Solutions.

### NEW – Hybrid – DG LOFTY TF

Early-mid maturing TruFlex® hybrid. Medium height and very good seedling vigour. Anticipated blackleg rating R. NVT tested 2021 as DG2101XX. Released 2021. Bred and marketed by Nutrien Ag Solutions.

### Hybrid – HYOLA® 410XX

Early-mid maturing TruFlex® hybrid variety suited to low to high-rainfall zones including irrigation. Blackleg rating R-MR. NVT tested 2019-21. Bred and marketed by Advanta Seeds.

**Hybrid – InVigor® R 4022P**

Early-mid maturing TruFlex® hybrid, with PodGuard®. Suited to low to medium-rainfall zones. Blackleg rating MR-MS. NVT tested 2019-21. Bred and marketed by BASF.

**Hybrid – InVigor® R 4520P**

Early mid-season TruFlex® hybrid. Good seedling vigour and medium height. InVigor® R 4520P is a companion for InVigor® R 4022P and suitable in mid and late season areas. Blackleg rating MS. NVT tested 2019-21 as InVigor® R 4520P. Bred and marketed by BASF.

**Hybrid – NUSEED® CONDOR TF**

Previously named Xseed™ Condor. Mid maturing TruFlex® hybrid. Tall height. Blackleg rating R. Tested in Bayer group regulated trials 2018-19 as Xseed™ Condor, NVT tested 2020-21. Marketed by Nuseed.

**NEW – Hybrid – NUSEED® EMU TF**

Early maturing TruFlex® hybrid. Suited to low and medium-rainfall areas with a medium height. Blackleg rating MR-MS. NVT tested 2019-21. Marketed by Nuseed.

**Hybrid – NUSEED® RAPTOR TF**

Previously named Xseed™ Raptor. Early-mid maturing TruFlex® hybrid. Short to medium height. Blackleg rating R. Tested in Bayer group regulated trials 2018-19 as Xseed™ Raptor, NVT tested 2020-21. Marketed by Nuseed.

**TRUFLEX® SPECIALTY VARIETIES****NEW – VICTORY® Specialty Oil – VICTORY® V55-04TF**

Mid maturing specialty (high oleic, low linoleic oil) hybrid. Medium height. Suited to early sowing and higher-rainfall areas. Blackleg rating to be determined. NVT tested 2021 as 19TH6009. Potential release 2022. Bred by Cargill. Marketed by AWB under contract.

**TRUFLEX® DUAL HERBICIDE VARIETIES****NEW – Hybrid – HYOLA® BATTALION XC**

Early-mid maturing TruFlex® + Clearfield® hybrid variety with medium height. Suited to low and medium-rainfall areas. Blackleg rating R. Blackleg group ADF. NVT tested 2021. Released 2021. Marketed by Advanta Seeds.

**Hybrid – HYOLA® GARRISON XC**

Mid-early maturing TruFlex® + Clearfield® hybrid variety of medium-tall height. Suited low to high-rainfall zones. Blackleg rating R. Blackleg group ADF. NVT tested 2019-21. Bred and marketed by Advanta Seeds.

**Table 1: Canola time of sowing guide based on phenology speed.**

Recommended sowing dates for key Victorian locations for three phenology<sup>#</sup> types.

Following these sowing guidelines will ensure varieties flower within their ideal optimal start of flowering (OSF) window. This table is a guide only and has been taken from the GRDC publication *20 Tips for Profitable Canola*, December 2019.

NORTH EAST	March				April				May			
Slow												
Mid												
Fast												
MALLEE	March				April				May			
Slow												
Mid												
Fast												
WIMMERA	March				April				May			
Slow												
Mid												
Fast												
SOUTH WEST	March				April				May			
Slow												
Mid												
Fast												

<sup>#</sup> Phenology response to early sowing, before 15 April. Rankings may vary for later sowing dates.

Yellow = earlier than optimum; potential yield reduction.

Green = optimum sowing time.

Red = later than optimum; potential yield reduction.



**Table 2: Canola variety spring blackleg ratings. Ratings will be updated in autumn 2022.**

Blackleg resistance ratings are for crown canker only. Upper canopy and pod infection can only be managed by growing a variety with major gene resistance (blackleg resistance group).

Variety	Maturity	Phenology (response to early sowing) <sup>a</sup>	Year of release	Blackleg resistance rating bare seed	Blackleg resistance rating + Jockey <sup>®</sup>	Blackleg resistance rating + ILeVo <sup>®</sup>	Blackleg resistance rating + Saltro <sup>®</sup>	Blackleg resistance group	Type
<b>CONVENTIONAL CANOLA</b>									
Nuseed <sup>®</sup> Diamond	early	fast	2013	MR	R	R	R	ABF	hybrid
Nuseed <sup>®</sup> Quartz	mid	mid	2017	R	-	-	-	ABD	hybrid
<b>IMIDAZOLINONE-TOLERANT CANOLA</b>									
Hyola <sup>®</sup> 970CL	late	winter	2014	R	-	-	R	H	Clearfield <sup>®</sup> , hybrid
Hyola <sup>®</sup> Equinox CL	mid	mid-fast	2021	R	-	-	R	ADF	Clearfield <sup>®</sup> , hybrid
Hyola <sup>®</sup> Feast CL	mid-late	winter	2021	R	-	-	R	H	Clearfield <sup>®</sup> , hybrid
Phoenix CL	late	winter	2019	R	-	-	-	B	Clearfield <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 43Y92 CL	early	mid-fast	2017	R-MR	R	R	R	B	Clearfield <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 44Y94 CL	mid-early	mid-fast <sup>a</sup>	2020	R-MR	R	R	-	BC	Clearfield <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 45Y93 CL	mid	mid-slow <sup>a</sup>	2018	R-MR	R	R	R	BC	Clearfield <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 45Y95 CL	mid	mid-slow <sup>a</sup>	2021	R-MR <sup>a</sup>	R <sup>a</sup>	R <sup>a</sup>	R <sup>a</sup>	C	Clearfield <sup>®</sup> , hybrid
RGT Nizza CL	early	winter	2021	R	-	-	-	B	Clearfield <sup>®</sup> , hybrid
<b>IMIDAZOLINONE-TOLERANT SPECIALTY CANOLA</b>									
VICTORY <sup>®</sup> V75-03CL	mid	mid-slow <sup>a</sup>	2019	MR	R	R	R	AB	Clearfield <sup>®</sup> , hybrid
VICTORY <sup>®</sup> V7001CL	late	slow	2016	MR	R	R	R	ABF	Clearfield <sup>®</sup> , hybrid
VICTORY <sup>®</sup> V7002CL	early-mid	-	2017	R-MR	R	R	R	ABF	Clearfield <sup>®</sup> , hybrid
<b>TRIAZINE-TOLERANT CANOLA</b>									
ATR Bonito <sup>®</sup>	early-mid	mid-fast	2013	MS	MR-MS	R	R	A	open
ATR Mako <sup>®</sup>	early-mid	mid-fast	2015	MR-MS	R-MR	R	R	A	open
ATR Stingray <sup>®</sup>	early	fast	2011	MR-MS	R-MR	R	R	C	open
ATR Wahoo <sup>®</sup>	mid	mid-slow	2013	MS	-	-	-	A	open
DG Bidgee TT	early-mid	-	2021	MR	-	est R	est R	H	open
DG Murray TT	mid-late	-	2021	R-MR	-	R	R	H	open
Hyola <sup>®</sup> Blazer TT	mid-early	-	2020	R	-	-	R	ADF	hybrid
HyT Tec <sup>®</sup> Trident	early	mid-fast	2019	R	-	-	R	AD	hybrid
HyT Tec <sup>®</sup> Trifecta	mid	-	2020	R	-	-	R	ABD	hybrid
HyT Tec <sup>®</sup> Trophy	mid-early	mid	2017	R-MR	R	R	R	AD	hybrid
InVigor <sup>®</sup> T 4510	early-mid	mid-fast	2016	MR-MS	R	R	R	BF	hybrid
InVigor <sup>®</sup> T 6010	mid-late	-	2020	MS	-	R	R	BC	hybrid
Pioneer <sup>®</sup> 45T03 TT	mid	mid	2018	MR	R	R	-	ABD	hybrid
RGT Capacity TT	early-mid	-	2021	MS	MR	R	R	B	hybrid
SF Dynatron TT <sup>™</sup>	mid	-	2020	MS	MR	R	R	BC	hybrid
SF Ignite TT	mid	mid-slow	2016	MR-MS	R	R	R	BF	hybrid
SF Spark TT	early	fast <sup>a</sup>	2018	MR	R-MR	R	R	ABDS	hybrid
<b>TRIAZINE-TOLERANT SPECIALTY CANOLA</b>									
Monola <sup>®</sup> 420TT	early-mid	-	2020	R-MR	-	-	-	AD	open
Monola <sup>®</sup> 422TT	early-mid	-	2021	est MR	-	-	-	AD <sub>p</sub>	open
Monola <sup>®</sup> H421TT	early	-	2020	R-MR	-	-	R	BC	hybrid
<b>GLYPHOSATE-TOLERANT CANOLA</b>									
InVigor <sup>®</sup> R 3520	early	-	2017	MR	-	-	-	unknown	Roundup Ready <sup>®</sup> , hybrid
DG Bindo TF	early-mid	-	2021	est R-MR	-	est R	est R	ABC	TruFlex <sup>®</sup> , hybrid
DG Lofty TF	early-mid	-	2021	est R	-	est R	est R	ACH	TruFlex <sup>®</sup> , hybrid
Hyola <sup>®</sup> 410XX	early-mid	mid-fast <sup>a</sup>	2019	R-MR	-	-	R	ABD	TruFlex <sup>®</sup> , hybrid
InVigor <sup>®</sup> R 4022P	early-mid	mid-fast <sup>a</sup>	2019	MR-MS	-	R	R	ABC	TruFlex <sup>®</sup> , hybrid
InVigor <sup>®</sup> R 4520P	early-mid	-	2020	MS	-	R	R	B	TruFlex <sup>®</sup> , hybrid
InVigor <sup>®</sup> R 5520P	mid	mid-slow	2016	MR	-	R	-	ABC	Roundup Ready <sup>®</sup> , hybrid
Nuseed <sup>®</sup> Condor TF	mid	-	2020	R	-	-	R	ABD	TruFlex <sup>®</sup> , hybrid
Nuseed <sup>®</sup> GT-53	mid	mid	2016	R	-	-	-	ABDF	Roundup Ready <sup>®</sup> , hybrid
Nuseed <sup>®</sup> Raptor TF	early-mid	mid-fast <sup>a</sup>	2019	R	-	-	R	AD	TruFlex <sup>®</sup> , hybrid
Nuseed <sup>®</sup> Emu TF	early	fast <sup>a</sup>	2021	MR-MS	-	-	R	AB	TruFlex <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 44Y27 RR	early-mid	mid-fast	2017	MR	R	R	R	B	Roundup Ready <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 44Y30 RR	early-mid	mid <sup>a</sup>	2021	MR	R <sup>a</sup>	R <sup>a</sup>	R <sup>a</sup>	AB	Roundup Ready <sup>®</sup> , hybrid
Pioneer <sup>®</sup> 45Y28 RR	mid	mid-slow <sup>a</sup>	2018	MR	R	R	R	BC	Roundup Ready <sup>®</sup> , hybrid
VICTORY <sup>®</sup> V55-04TF	mid	-	2022	tbd	-	-	-	tbd	TruFlex <sup>®</sup> , hybrid

Table 2, cont. next page



**Table 2: Canola variety spring blackleg ratings. Ratings updated in autumn 2022 (continued).**

Variety	Maturity	Phenology (response to early sowing)#	Year of release	Blackleg resistance rating bare seed	Blackleg resistance rating + Jockey®	Blackleg resistance rating + ILeVo®	Blackleg resistance rating + Saltro®	Blackleg resistance group	Type
<b>GLYPHOSATE-TOLERANT SPECIALTY CANOLA</b>									
VICTORY® V5003RR	mid	-	2018	R-MR	R	R	R	AB	Roundup Ready®, hybrid
<b>DUAL-HERBICIDE TOLERANT CANOLA</b>									
BASF 3000 TR	early	-	2015	MS-S	MR-MS	R-MR	R-MR	B	Roundup Ready® + triazine, hybrid
Hyola® Battalion XC	early-mid	fast <sup>a</sup>	2021	R	-	-	-	ADFP	TruFlex® + Clearfield®, hybrid
Hyola® Enforcer CT	mid-early	-	2020	R	-	-	R	ADF	TruFlex® + Clearfield®, hybrid
Hyola® Garrison XC	mid-early	mid-fast <sup>a</sup>	2020	R	-	-	R	ADF	TruFlex® + Clearfield®, hybrid
InVigor® LT 4530P	early-mid	-	2021	MR	-	R	-	BF	LibertyLink® + triazine, hybrid

Data Source: GRDC Blackleg Management Guide, Spring (2021), 20 Tips for Profitable Canola - Victoria (2019).

\*One year (2019) experimental data only. <sup>a</sup> indicates breeding company data.

# Phenology response to early sowing, before 15 April. Rankings may vary for later sowing dates.

R = resistant, M = moderately, S = susceptible.

p = provisional ratings – treat with caution.

est = estimate by marketing company (yet to be rated).

tbd = to be determined (yet to undergo testing).

- denotes no rating available.

**Table 3: Canola disease guide summary.**

Disease	Organism	Symptoms	Occurrence	Inoculum source	Control
Blackleg	<i>Leptosphaeria maculans</i>	Leaf lesions, which may develop into canker on stem at or near ground level, plant death. Lesions on flowers, pods and branches in the upper canopy.	Spores from canola stubble are released in autumn and after subsequent rainfall events. Spores infect leaves of the new crop and the upper canopy later in the season.	Canola stubble.	Resistant cultivars. Avoid sowing next to last year's canola stubble. Fungicides can be used. See Blackleg Management Guide. BlacklegCM app for tablets.
Sclerotinia stem rot	<i>Sclerotinia</i> spp.	White fluffy growth on the stem, causing plant parts above this point to die. Affected area greyish white, sclerotia form on and inside the stems.	Favoured by wet spring weather during flowering.	Survives as sclerotia in the soil.	Sow clean seed and isolate from last year's infected paddocks. Fungicides applied during early bloom. See SclerotiniaCM app for tablets.
Damping off	<i>Rhizoctonia</i> spp., <i>Pythium</i> spp. and <i>Fusarium</i> spp.	Pre-emergence rot and seedlings fail to emerge. Emerged plants collapse at ground level with leaves turning orange/purple. Surviving plants stunted.	In soils that have not been cultivated after opening rains. During cold/wet periods.	Hyphal growth in the soil.	Seed dressings. Cultivation after the break of the season reduces these diseases but increases erosion risk.
Alternaria leaf spot and black spot	<i>Alternaria brassicae</i>	Dark target-like round spots which initially appear on leaves. Can spread to stems and pods and cause pod shattering.	Infection spreads with wet humid weather throughout season. Severe pod infection possible if wet during spring.	Canola stubble.	No current control known.

Data Source: Reviewed by Marcroft Grains Pathology (2021).

**Table 4: Mallee canola (early season) results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis. These trials were not structured to allow comparisons between different chemistry types.

GLYPHOSATE-TOLERANT CANOLA						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		2.82	1.46	1.79	2.19	2.33
	No. trials	3	3	1	2	2
DG 408RR	9	99	101	102	100	-
Hyola® 404RR	9	92	96	96	97	-
Hyola® 410XX	4	-	-	-	101	102
Hyola® Battalion XC	2	-	-	-	-	99
Hyola® Garrison XC	4	-	-	-	103	102
InVigor® R 3520	11	96	99	100	99	99
InVigor® R 4022P	4	-	-	-	105	106
InVigor® R 4520P	2	-	-	-	-	105
Nuseed® Emu TF	2	-	-	-	-	103
Nuseed® GT-42	4	98	98	-	-	-
Nuseed® Raptor TF	2	-	-	-	-	103
Pioneer® 43Y23 RR	7	92	97	98	-	-
Pioneer® 43Y29 RR	6	-	109	-	107	107
Pioneer® 44Y27 RR	11	109	107	108	105	106
IMIDAZOLINONE-TOLERANT CANOLA						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		2.78	1.43	1.20	2.19	2.19
	No. trials	3	3	2	2	2
Banker CL	6	112	106	-	-	-
Hyola® 575CL	10	88	92	84	94	-
Pioneer® 43Y92 CL	12	101	102	106	101	102
Pioneer® 44Y90 CL	12	105	104	111	103	104
Saintly CL	5	-	106	-	105	-
VICTORY® V7002CL	9	-	93	93	95	94
TRIAZINE-TOLERANT CANOLA						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		2.74	1.47	1.60	1.94	2.22
	No. trials	1	3	1	2	2
ATR Bonito <sup>db</sup>	9	96	96	94	97	96
ATR Stingray <sup>db</sup>	9	94	93	91	95	93
BASF 3000 TR	7	86	93	92	93	-
DG Murray TT	1	-	-	-	95	-
Hyola® 350TT	8	-	102	103	101	102
Hyola® 559TT	2	102	-	104	-	-
Hyola® Blazer TT	3	-	-	-	111	111
Hyola® Enforcer CT	3	-	-	-	105	104
HyITec® Trident	5	-	-	117	110	112
HyITec® Trophy	8	-	109	111	107	108
InVigor® LT 4530P	2	-	-	-	-	104
InVigor® T 3510	3	-	-	105	103	-
InVigor® T 4510	9	109	108	110	106	108
Pioneer® 44T02 TT	9	101	103	105	102	103
RGT Capacity TT	2	-	-	-	-	107
SF Dynatron TT <sup>m</sup>	4	-	-	-	109	109
SF Spark TT	5	-	-	102	100	101
SF Turbine TT	4	104	103	-	-	-

- denotes no data available

Data Source: National Variety Trials (2016–2020).

**Table 5: North Central and North East canola (mid season) results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis. These trials were not structured to allow comparisons between different chemistry types.

CONVENTIONAL CANOLA												
Year	NORTH CENTRAL						NORTH EAST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.69	2.30	0.91	1.22			3.17	1.96	0.32	1.07	2.77
	No. trials	1	1	1	1		No. trials	1	1	1	1	1
AV Garnet <sup>®</sup>	4	98	89	88	90	Trial compromised	4	98	90	86	81	-
Nuseed <sup>®</sup> Diamond	3	97	-	109	112		4	97	-	115	124	99
Nuseed <sup>®</sup> Quartz	4	109	105	110	106		5	108	107	106	106	108
GLYPHOSATE-TOLERANT CANOLA												
Year	NORTH CENTRAL						NORTH EAST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.78	2.78	0.97	1.86	2.70		3.11	1.89	0.88	1.31	2.95
	No. trials	2	2	1	2	2	No. trials	2	2	2	2	2
DG 408RR	7	100	100	103	100	-	5	-	101	102	97	-
DG 460RR	4	100	97	95	-	-	6	98	96	93	-	-
Hyola <sup>®</sup> 404RR	5	90	96	96	-	-	6	91	96	98	-	-
Hyola <sup>®</sup> 410XX	4	-	-	-	97	98	4	-	-	-	93	99
Hyola <sup>®</sup> 506RR	1	-	-	101	-	-	7	100	99	100	94	-
Hyola <sup>®</sup> Battalion XC	2	-	-	-	-	97	1	-	-	-	-	100
Hyola <sup>®</sup> Garrison XC	4	-	-	-	100	100	4	-	-	-	94	102
IH51 RR	4	92	98	-	-	-	4	89	98	-	-	-
InVigor <sup>®</sup> R 3520	5	87	-	103	97	-	2	90	-	-	-	-
InVigor <sup>®</sup> R 4022P	4	-	-	-	111	111	4	-	-	-	128	107
InVigor <sup>®</sup> R 4520P	4	-	-	-	117	116	4	-	-	-	135	115
InVigor <sup>®</sup> R 5520P	9	103	103	100	105	104	10	100	104	104	117	102
Monola <sup>®</sup> G11	3	82	93	96	-	-	6	84	95	101	-	-
Nuseed <sup>®</sup> Condor TF	2	-	-	-	109	-	4	-	-	-	111	110
Nuseed <sup>®</sup> Emu TF	2	-	-	-	-	105	3	-	-	-	114	97
Nuseed <sup>®</sup> GT-42	4	95	96	97	-	-	6	96	96	95	-	-
Nuseed <sup>®</sup> GT-53	7	104	100	103	100	-	10	106	100	98	90	104
Nuseed <sup>®</sup> Raptor TF	4	-	-	-	103	102	4	-	-	-	95	107
Pioneer <sup>®</sup> 43Y23 RR	4	99	100	101	-	-	0	-	-	-	-	-
Pioneer <sup>®</sup> 43Y29 RR	6	-	107	-	110	108	6	-	107	-	118	110
Pioneer <sup>®</sup> 44Y27 RR	9	101	103	108	104	105	9	104	105	109	108	104
Pioneer <sup>®</sup> 44Y30 RR	0	-	-	-	-	-	2	-	-	-	-	113
Pioneer <sup>®</sup> 45Y25 RR	5	111	102	99	-	-	8	109	100	93	94	-
Pioneer <sup>®</sup> 45Y28 RR	3	-	105	107	-	-	6	-	105	104	-	111
VICTORY <sup>®</sup> V5003RR	9	95	94	89	91	90	10	93	91	86	80	93
IMIDAZOLINONE-TOLERANT CANOLA												
Year	NORTH CENTRAL						NORTH EAST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		4.05	2.58	0.82	1.72	2.83		3.34	1.89	0.83	1.07	2.88
	No. trials	2	2	1	2	2	No. trials	2	2	2	2	2
Banker CL	5	108	106	105	-	-	5	106	106	105	-	-
Hyola <sup>®</sup> 575CL	7	92	94	89	91	-	8	90	93	92	86	-
Hyola <sup>®</sup> Equinox CL	2	-	-	-	-	102	2	-	-	-	-	104
Pioneer <sup>®</sup> 43Y92 CL	9	102	105	110	106	106	4	104	106	-	-	-
Pioneer <sup>®</sup> 44Y90 CL	9	108	105	108	108	106	8	-	106	106	113	108
Pioneer <sup>®</sup> 44Y94 CL	2	-	-	-	-	111	4	-	-	-	121	114
Pioneer <sup>®</sup> 45Y91 CL	5	105	103	101	-	-	10	104	102	100	107	104
Pioneer <sup>®</sup> 45Y93 CL	4	-	107	-	111	-	8	-	106	104	114	112
Pioneer <sup>®</sup> 45Y95 CL	1	-	-	117	-	-	3	-	-	115	128	-

Table 5, cont. next page

**Table 5: North Central and North East canola (mid season) results. NVT long-term predicted yield expressed as a percentage of mean yield (continued).**

IMIDAZOLINONE-TOLERANT CANOLA (continued)												
Year	NORTH CENTRAL						NORTH EAST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		4.05	2.58	0.82	1.72	2.83		3.34	1.89	0.83	1.07	2.88
	No. trials	2	2	1	2	2	No. trials	2	2	2	2	2
Saintly CL	6	101	105	109	108	-	8	102	107	113	125	-
VICTORY® V7002CL	7	-	95	91	92	94	8	-	94	92	87	92
VICTORY® V75-03CL	1	-	-	92	-	-	6	-	-	91	82	94
TRIAZINE-TOLERANT CANOLA												
Year	NORTH CENTRAL						NORTH EAST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.66	2.45	0.64	1.47	2.28		3.05	1.53	0.87	1.17	2.70
	No. trials	2	2	1	2	1	No. trials	2	2	2	2	2
ATR Bonito <sup>db</sup>	8	97	98	92	98	97	8	94	97	97	-	95
ATR Mako <sup>db</sup>	4	93	94	88	-	-	6	92	91	91	-	-
ATR Stingray <sup>db</sup>	6	96	97	89	-	95	0	-	-	-	-	-
ATR Wahoo <sup>db</sup>	0	-	-	-	-	-	6	100	94	89	-	-
BASF 3000 TR	6	89	96	99	92	-	0	-	-	-	-	-
DG 560TT	5	95	98	99	-	-	6	97	98	100	-	-
DG 670TT	3	111	-	108	-	-	9	110	107	104	111	110
DG Murray TT	2	-	-	-	97	-	1	-	-	-	88	-
Hyola® 350TT	5	-	104	113	107	-	7	104	108	111	115	-
Hyola® 550TT	3	-	-	115	105	-	4	-	-	111	109	-
Hyola® 559TT	5	96	101	110	-	-	6	100	103	108	-	-
Hyola® 580CT	1	-	98	-	-	-	4	-	97	96	-	-
Hyola® 650TT	0	-	-	-	-	-	5	105	100	101	-	-
Hyola® Blazer TT	1	-	-	-	-	117	2	-	-	-	-	121
Hyola® Enforcer CT	3	-	-	-	108	108	4	-	-	-	107	109
HyITec® Trident	5	-	109	129	112	113	4	-	-	-	108	115
HyITec® Trifecta	1	-	-	127	-	-	5	-	-	115	123	122
HyITec® Trophy	6	-	110	123	116	114	8	-	114	114	118	116
InVigor® LT 4530P	1	-	-	-	-	111	2	-	-	-	-	109
InVigor® T 4510	8	109	109	119	114	112	10	111	113	114	123	112
InVigor® T 6010	1	-	-	-	-	113	4	-	-	-	123	114
Monola® 416TT	5	98	95	83	-	-	8	94	91	87	87	-
Monola® 420TT	4	-	-	90	86	89	6	-	-	95	84	87
Monola® 422TT	1	-	-	-	-	93	2	-	-	-	-	92
Monola® 515TT	2	84	-	-	-	-	5	82	84	85	-	-
Monola® H421TT	2	-	-	-	91	94	4	-	-	-	96	90
Pioneer® 44T02 TT	8	95	100	112	99	101	2	-	103	-	-	-
Pioneer® 45T03 TT	1	-	-	99	-	-	4	-	-	99	101	-
RGT Capacity TT	3	-	-	-	119	116	4	-	-	-	125	114
SF Dynatron TT™	3	-	-	-	119	116	4	-	-	-	125	118
SF Ignite TT	5	115	107	106	-	-	10	113	106	101	110	112
SF Spark TT	4	-	-	106	102	103	4	-	-	-	102	103
SF Turbine TT	8	106	105	109	107	106	10	106	106	106	111	107

Data Source: National Variety Trials (2016–2020).

- denotes no data available

**Table 6: Wimmera and South West canola (mid season) results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.  
These trials were not structured to allow comparisons between different chemistry types

CONVENTIONAL CANOLA												
Year	WIMMERA						SOUTH WEST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		4.75	3.76		2.02	3.12		3.10	2.75	2.54	2.26	
	No. trials	1	1		1	2	No. trials	1	1	1	1	
AV Garnet <sup>®</sup>	3	95	96	Trial compromised	91	-	4	95	95	95	99	Trial compromised
Nuseed <sup>®</sup> Diamond	4	102	-		110	100	3	99	-	101	96	
Nuseed <sup>®</sup> Quartz	5	107	108		106	108	4	112	104	109	109	
GLYPHOSATE-TOLERANT CANOLA												
Year	WIMMERA						SOUTH WEST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.70	3.15	1.99	1.94	3.35		2.96	2.80	2.54	2.75	3.48
	No. trials	2	2	1	2	2	No. trials	3	3	3	2	2
DG 408RR	6	99	100	103	99	-	0	-	-	-	-	-
DG 460RR	5	97	98	98	-	-	9	97	97	97	-	-
Hyola <sup>®</sup> 404RR	5	90	93	95	-	-	0	-	-	-	-	-
Hyola <sup>®</sup> 410XX	4	-	-	-	97	100	4	-	-	-	97	96
Hyola <sup>®</sup> 506RR	5	-	99	101	98	-	10	95	98	98	97	-
Hyola <sup>®</sup> 540XC	2	-	-	-	92	-	4	-	-	-	95	94
Hyola <sup>®</sup> Battalion XC	2	-	-	-	-	101	0	-	-	-	-	-
Hyola <sup>®</sup> Garrison XC	4	-	-	-	99	103	4	-	-	-	102	100
IH51 RR	4	96	95	-	-	-	6	94	96	-	-	-
InVigor <sup>®</sup> R 3520	5	92	-	96	97	-	0	-	-	-	-	-
InVigor <sup>®</sup> R 4022P	4	-	-	-	111	105	4	-	-	-	107	110
InVigor <sup>®</sup> R 4520P	4	-	-	-	117	112	4	-	-	-	117	118
InVigor <sup>®</sup> R 5520P	9	108	102	98	106	100	13	110	106	105	105	107
Monola <sup>®</sup> G11	0	-	-	-	-	-	3	75	86	-	-	-
Nuseed <sup>®</sup> Condor TF	4	-	-	-	108	110	4	-	-	-	111	109
Nuseed <sup>®</sup> Emu TF	2	-	-	-	-	99	0	-	-	-	-	-
Nuseed <sup>®</sup> GT-42	3	92	96	98	-	-	3	89	93	-	-	-
Nuseed <sup>®</sup> GT-53	9	99	102	105	99	104	13	100	100	101	103	99
Nuseed <sup>®</sup> Raptor TF	4	-	-	-	102	108	2	-	-	-	107	-
Pioneer <sup>®</sup> 43Y29 RR	6	-	108	-	111	108	4	-	112	-	-	114
Pioneer <sup>®</sup> 44Y27 RR	9	103	103	105	103	105	4	103	103	-	-	-
Pioneer <sup>®</sup> 44Y30 RR	2	-	-	-	-	112	2	-	-	-	-	112
Pioneer <sup>®</sup> 45Y25 RR	7	107	105	104	103	-	11	111	105	108	113	-
Pioneer <sup>®</sup> 45Y28 RR	5	-	108	108	-	110	7	-	109	111	-	110
VICTORY <sup>®</sup> V5003RR	9	90	94	94	91	93	13	88	92	91	95	93
IMIDAZOLINONE-TOLERANT CANOLA												
Year	WIMMERA						SOUTH WEST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.53	3.08	2.10	1.97	3.38		2.71	2.81	2.66	3.15	3.59
	No. trials	2	2	1	2	3	No. trials	3	3	3	3	2
Banker CL	3	113	-	103	-	-	6	118	110	-	-	-
Hyola <sup>®</sup> 575CL	7	89	93	93	92	-	12	85	91	90	92	-
Hyola <sup>®</sup> Equinox CL	3	-	-	-	-	104	2	-	-	-	-	100
Pioneer <sup>®</sup> 43Y92 CL	7	106	103	104	105	-	3	107	-	-	-	-
Pioneer <sup>®</sup> 44Y90 CL	10	110	106	105	107	107	6	-	108	109	-	-
Pioneer <sup>®</sup> 44Y94 CL	5	-	-	-	111	112	4	-	-	-	110	110
Pioneer <sup>®</sup> 45Y91 CL	10	107	104	101	104	103	14	110	105	105	106	106
Pioneer <sup>®</sup> 45Y93 CL	8	-	110	107	110	110	8	-	112	-	114	114

Table 6, cont. next page

**Table 6: Wimmera and South West canola (mid season) results. NVT long-term predicted yield expressed as a percentage of mean yield (continued).**

IMIDAZOLINONE-TOLERANT CANOLA (continued)												
Year	WIMMERA						SOUTH WEST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.53	3.08	2.10	1.97	3.38		2.71	2.81	2.66	3.15	3.59
	No. trials	2	2	1	2	3	No. trials	3	3	3	3	2
Pioneer® 45Y95 CL	2	-	-	110	114	-	6	-	-	117	113	-
Saintly CL	6	108	103	102	107	-	12	109	106	106	102	-
VICTORY® V7002CL	8	-	94	94	93	93	0	-	-	-	-	-
VICTORY® V75-03CL	6	-	-	97	93	96	7	-	-	93	95	94
TRIAZINE-TOLERANT CANOLA												
Year	WIMMERA						SOUTH WEST					
		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		3.37	2.93	1.78	1.70	2.99		2.55	2.65	2.46	2.79	3.02
	No. trials	2	2	1	2	3	No. trials	3	3	3	3	2
ATR Bonito <sup>Ⓢ</sup>	8	99	97	94	-	95	3	99	-	-	-	-
ATR Mako <sup>Ⓢ</sup>	4	89	94	94	-	-	4	85	91	-	-	-
ATR Stingray <sup>Ⓢ</sup>	5	97	97	93	-	-	0	-	-	-	-	-
ATR Wahoo <sup>Ⓢ</sup>	0	-	-	-	-	-	14	104	100	101	106	105
BASF 3000 TR	4	89	93	95	-	-	0	-	-	-	-	-
DG 560TT	5	95	97	98	-	-	6	92	96	-	-	-
DG 670TT	9	113	108	107	109	109	14	118	110	111	111	112
DG Murray TT	5	-	-	-	97	100	2	-	-	-	-	99
Hyola® 350TT	5	-	103	105	105	-	4	106	-	105	-	-
Hyola® 530XT	2	-	-	-	99	-	3	-	-	-	99	-
Hyola® 550TT	3	-	-	106	103	-	6	-	-	103	99	-
Hyola® 559TT	5	96	99	103	-	-	9	93	98	98	-	-
Hyola® 580CT	8	-	99	100	97	100	11	-	97	98	99	97
Hyola® 650TT	2	97	-	106	-	-	9	96	99	100	-	-
Hyola® Blazer TT	4	-	-	-	118	118	2	-	-	-	-	123
Hyola® Enforcer CT	5	-	-	-	106	108	3	-	-	-	105	106
HyITec® Trident	6	-	-	118	108	115	1	-	109	-	-	-
HyITec® Trifecta	3	-	-	-	-	119	8	-	-	122	118	120
HyITec® Trophy	8	-	111	114	113	114	11	-	113	116	112	113
InVigor® LT 4530P	2	-	-	-	-	107	2	-	-	-	-	112
InVigor® T 4510	10	114	109	109	112	110	11	-	112	113	109	112
InVigor® T 6010	5	-	-	-	115	112	5	-	-	-	118	121
Monola® 416TT	7	95	96	93	95	-	8	95	95	95	-	-
Monola® 420TT	3	-	-	92	87	-	5	-	-	85	84	83
Monola® 515TT	2	80	-	-	-	-	7	72	83	81	-	-
Monola® H421TT	2	-	-	-	92	-	1	-	-	-	86	-
Pioneer® 44T02 TT	5	95	99	105	-	-	0	-	-	-	-	-
Pioneer® 45T03 TT	3	-	-	100	101	-	8	-	-	101	102	102
RGT Capacity TT	5	-	-	-	115	112	1	-	-	-	113	-
SF Dynatron TT™	5	-	-	-	117	116	0	-	-	-	-	-
SF Ignite TT	8	116	110	107	-	111	14	124	112	114	116	117
SF Spark TT	5	-	-	-	102	103	0	-	-	-	-	-
SF Turbine TT	10	108	105	105	106	106	0	-	-	-	-	-

- denotes no data available

Data Source: National Variety Trials (2016–2020).

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# FIELD CROP DISEASES VICTORIA

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# FIELD PEA

## NEW VARIETIES

There are two new field pea varieties available for sowing in 2022 and a new line from Grains Innovation Australia (GIA) being considered for potential release.

PBA Taylor<sup>®</sup> is a new variety of Kasper-type field pea released in 2021. Tested as OZP1408, PBA Taylor<sup>®</sup> was developed by Agriculture Victoria Research and commercialised by Seednet for the 2022 season.

PBA Noosa<sup>®</sup> is a new blue pea variety, the first blue field pea to be released in Victoria since 1999. Developed by Agriculture Victoria Research. Tested as OZB1308 and commercialised by PB Seeds.

GIA2005P is the only Kasper-type variety of field pea with improved tolerance to common in-crop and residual Group B herbicides (combined IMI and SU), developed by Grains Innovation Australia (GIA). Contact AG Schilling & Co for further information regarding seed availability for 2022.

## DISEASE UPDATE

There are no significant varietal resistance rating changes in field pea for 2021. It is important to check up-to-date varietal ratings to ensure you are managing varieties based on current resistance ratings. This document provides the most up-to-date ratings, with the Victorian Pulse Disease Guide providing any varietal resistance changes (if any) after the 2021 seasonal results.

Blackspot risk is a key disease consideration, and the risks can be predicted based on your growing district. Therefore, the appropriate control strategy can be implemented. A forecast is distributed weekly via SMS or email during the sowing season. To subscribe to 'Blackspot Manager' visit [agric.wa.gov.au/crops/grains/pulses/field-peas](http://agric.wa.gov.au/crops/grains/pulses/field-peas) or for SMS, text 'Blackspot' with your name and nearest weather station or location to 0475 959 932 or email your name, phone number and nearest weather station or location to [BlackspotManager@dpird.wa.gov.au](mailto:BlackspotManager@dpird.wa.gov.au).

## MORE INFORMATION

### [nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

### [grdc.com.au](http://grdc.com.au)

- [Field Pea Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

### [agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Field Pea in Victoria](#)
- [Agriculture Victoria Pulse Disease Guide](#)

### [extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

### [pulseaus.com.au](http://pulseaus.com.au)

Pulse Australia information on growing pulses including:

- [Growing Pulses – Field Pea](#)
- [Crop protection permits in pulses](#)

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation, along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

### Abbreviations used are:

( <sup>‡</sup> )	Denotes Plant Breeder's Rights apply
<b>BLR</b>	Bean leafroll virus
<b>PSbM</b>	Pea seed-borne mosaic virus
<b>IMI</b>	Imidazolinone
<b>SU</b>	Sulfonylurea

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## KASPA GRAIN TYPE

### GIA KASTAR<sup>‡</sup>

GIA Kastar<sup>‡</sup> was the first Kasper-type field pea with improved tolerance to common in-crop and residual IMI herbicides. Mid flowering and early-mid maturing. Erect growth habit with a semi-leafless plant type, resistant to pod shatter at maturity. Uniform red to brown-coloured seed coat, medium in size, marketable for human consumption in the Indian/Asian sub-continent. Released 2019. Seed available from AG Schilling & Co. EPR \$3.00.

### NEW – GIA2005P

An early to mid-flowering and early maturing Kasper-type field pea, semi-leafless with an erect growth habit. The first Kasper-type field pea with improved tolerance to common in-crop and residual Group B herbicides (IMI and SU), and superior to GIA Kastar<sup>‡</sup> in both herbicide tolerance and early vigour. Potential release 2021 (tested as GIA2005P). Commercialised by AG Schilling & Co. EPR TBC.

### PBA BUTLER<sup>‡</sup>

Mid to late flowering semi-dwarf. High yield potential and adapted to medium to high-rainfall regions. Grains are similar to PBA Gunyah<sup>‡</sup> in colour and size. Released 2017. Seed available from Seednet. EPR \$2.70.

### PBA GUNYAH<sup>‡</sup>

An early to mid-flowering, semi-dwarf field pea. Broadly adapted and better suited to shorter growing season environments. Fair to good lodging resistance at maturity and pods are resistant to shattering. Released 2010. Commercialised by Seednet. EPR \$2.50.

### KASPA<sup>‡</sup>

A late flowering, semi-dwarf field pea. Kasper<sup>‡</sup> is the benchmark for field peas with its broad adaption and high yield potential. Suited to longer growing season environments. Kasper<sup>‡</sup> has fair lodging resistance at maturity and pods are resistant to shattering. Released 2002. Commercialised by Seednet. EPR \$2.00.

### NEW – PBA TAYLOR<sup>‡</sup>

PBA Taylor<sup>‡</sup> is an early to mid-flowering and maturity semi-dwarf, semi-leafless Kasper-type field pea, with non-shattering grain. Wide adaption and good yield potential which makes it suitable for cultivation across the southern cropping belt. Resistant to PSbM and BLR viruses. Released 2021 (tested as OZP1408). Commercialised by Seednet. EPR \$2.70.

### PBA TWILIGHT<sup>‡</sup>

An early flowering and early maturing, semi-dwarf field pea, better suited to short growing season environments and low-rainfall zones. PBA Twilight<sup>‡</sup> has fair lodging resistance at maturity and pods are resistant to shattering. Released 2010. Commercialised by Seednet. EPR \$2.50.

### PBA WHARTON<sup>‡</sup>

An early-mid flowering and early maturity, semi-dwarf field pea. Adapted across short to medium growing season environments and is a suitable variety for crop topping when sowing is delayed. PBA Wharton<sup>‡</sup> has improved tolerance to soil boron and pods are resistant to shattering. Released 2013. Seed available from Seednet. EPR \$2.60.

## DUN GRAIN TYPE

### GIA OURSTAR<sup>®</sup>

GIA Ourstar<sup>®</sup> is the first Dun-type pea with improved tolerance to common in-crop and residual Group B herbicides (combined IMI and SU). Early-mid flowering and early-mid maturing. Similar plant type and growth habit to PBA Oura<sup>®</sup>. Medium size, light green to tan-coloured grain, suited to human consumption markets or stockfeed. Released 2019. Seed available from AG Schilling & Co. EPR \$3.00.

### MORGAN

Tall, late flowering, semi-leafless pea, which produces small grain. Lower yield potential than other varieties but is suitable for the lower-rainfall regions of Central and Western NSW as a dual-purpose pea that can be used for forage in drought years. Moderate non-sugar-pod resistance to shattering. Grain size is small and less suitable for human consumption markets. Released 1998. Free to trade.

### PBA OURA<sup>®</sup>

Early to mid-flowering and maturing, semi-dwarf, erect growing field pea. Good yield potential and broadly adapted. Fair lodging resistance at maturity and has moderate non-sugar-pod resistance to shattering. Released 2011. Commercialised by Seednet. EPR \$2.60.

### PBA PERCY<sup>®</sup>

An early flowering and maturing conventional pea. High yield potential and broadly adapted. Moderately tolerant to salinity. Poor lodging resistance and requires specialised pea pickup fronts for harvesting. Released 2011. EPR \$2.60.

## YELLOW PEA TYPE

### PBA PEARL

An early to mid-flowering, semi-leafless, semi-dwarf field pea. PBA Pearl is broadly adapted and produces medium white grain. Good lodging resistance at maturity and has moderate non-sugar-pod resistance to shattering. Marketable for human consumption or for stockfeed. Released 2012. No EPR.

## BLUE PEA TYPE

### NEW – PBA NOOSA<sup>®</sup>

Early-mid flowering and maturing blue field pea. PBA Noosa<sup>®</sup> is the first blue pea to be released with improved bleaching tolerance. Good level of resistance to downy mildew and resistant to BLR virus. Comparative yield to Kaspera<sup>®</sup> and Dun-type varieties and higher than existing blue pea variety Excell. To maintain grain quality, growers should focus on pea weevil management and timely harvest. Released 2021 (tested as OZB1308). Opportunity for premium quality niche markets, initially for domestic human consumption. Commercialised by PB Seeds with limited seed available for 2022 season. EPR TBC.

**Table 1: Field pea adaptability for Victorian rainfall zones.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	RAINFALL ZONE		
	Low <350mm	Med 350 to 500mm	High >500mm
<b>KASPA GRAIN TYPE</b>			
GIA Kastar <sup>db</sup>		✓	
PBA Butler <sup>db</sup>		✓	
PBA Gunyah <sup>db</sup>	✓	✓	
Kaspa <sup>db</sup>		✓	✓
PBA Taylor <sup>db</sup>		✓	✓
PBA Twilight <sup>db</sup>	✓	✓	
PBA Wharton <sup>db</sup>	✓		
<b>DUN GRAIN TYPE</b>			
GIA Ourstar <sup>db</sup>	✓	✓	
PBA Oura <sup>db</sup>	✓	✓	
PBA Percy <sup>db</sup>	✓	✓	
<b>YELLOW PEA GRAIN TYPE</b>			
PBA Pearl	✓	✓	

**Table 2: Agronomic characteristics of field pea varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	Plant habit	Plant vigour, early season	Flowering time	Maturity time	Plant lodging resistance at maturity	Pod shattering at maturity	Boron tolerance	Salinity tolerance
<b>KASPA GRAIN TYPE</b>								
GIA Kastar <sup>db</sup>	SD-SL	moderate	mid	early-mid	fair-good	R: SP	-	-
Kaspa <sup>db</sup>	SD-SL	moderate	late	mid	fair-good	R: SP	I	I
PBA Butler <sup>db</sup>	SD-SL	high	mid-late	mid	good	R: SP	I	I
PBA Gunyah <sup>db</sup>	SD-SL	high	early-mid	early	fair-good	R: SP	I	MI
PBA Taylor <sup>db</sup>	SD-SL	high	mid	early-mid	fair-good	R: SP	I	I
PBA Twilight <sup>db</sup>	SD-SL	high	early	early	fair-good	R: SP	I	I
PBA Wharton <sup>db</sup>	SD-SL	moderate	early-mid	early	fair-good	R: SP	MT	MT
<b>DUN GRAIN TYPE</b>								
GIA Ourstar <sup>db</sup>	SD-SL	moderate	early-mid	early-mid	fair-good	MR: NSP	-	-
Morgan	Tall-SL	high	late	late	poor-fair	MR: NSP	I	I
PBA Oura <sup>db</sup>	SD-SL	moderate	early-mid	early	fair-good	MR: NSP	MI	I
PBA Percy <sup>db</sup>	C	high	early	early	poor	MR: NSP	I	MT
<b>YELLOW PEA GRAIN TYPE</b>								
PBA Pearl	SD-SL	moderate	early-mid	early-mid	good	MR: NSP	MI	MI
<b>BLUE PEA GRAIN TYPE</b>								
PBA Noosa <sup>db</sup>	SD-SL	high	early-mid	early-mid	fair-good	R: SP	I	MT

SD=semi-dwarf, C=conventional, SL= semi-leafless, S=susceptible, MS=moderately susceptible, MR=moderately resistant, R=resistant, SP=sugar pod type pod, NSP=non sugar pod type  
 I=intolerant, MT= moderately tolerant, MI= moderately intolerant.  
 - denotes no rating available.



Table 3: Disease resistance ratings of field pea varieties.

Variety	Blackspot (Ascochyta)	Bacterial blight	Downy mildew	Powdery mildew	PSbMV <sup>a</sup>	BLRV (field rating) <sup>a</sup>	Root lesion nematode ( <i>Pratylenchus</i> )	
							<i>P. neglectus</i>	<i>P. thornei</i>
KASPA GRAIN TYPE								
GIA Kastar <sup>b</sup>	MSp	Sp	S	Rp	-	-	RMRp	Sp
Kaspa <sup>b</sup>	MS	S	S	S	S	S	RMR	MRMS
PBA Butler <sup>b</sup>	MS	MS	S	S	S	S	RMR	MRMS
PBA Gunyah <sup>b</sup>	MS	S	S	S	S	S	RMR	MRMS
PBA Taylor <sup>b</sup>	MS	S	S	S	-	-	RMR	MRMS
PBA Twilight <sup>b</sup>	MS	S	S	S	S	S	RMR	MRMS
PBA Wharton <sup>b</sup>	MS	S	S	R	R	R	RMR	MRMS
DUN GRAIN TYPE								
GIA Ourstar <sup>b</sup>	MSp	MSp	S	S	-	-	MRMSp	SVSp
PBA Oura <sup>b</sup>	MS	MS	S	S	S	R	MR	MRMS
PBA Percy <sup>b</sup>	MS	MRMS	S	S	S	S	RMR	RMR
YELLOW PEA GRAIN TYPE								
PBA Pearl	MS	MS	S	S	S	R	RMR	MRMS
BLUE PEA GRAIN TYPE								
PBA Noosa <sup>b</sup>	MS	S	MSp	S	S	R	MR	MR

Data Source: [Agriculture Victoria Pulse Disease Guide \(2021\)](#).

PSbMV = pea seed-borne mosaic virus. BLRV = bean leafroll virus. # Breeder data.

p = provisional ratings – treat with caution. R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, S = susceptible, VS = very susceptible. - denotes no rating available.

No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

Table 4: Field pea disease guide summary.

Disease	Organisms	Symptoms	Occurrence	Hosts	Control
Ascochyta blight (Blackspot)	<i>Didymella pinodes</i> (synonym: <i>Mycosphaerella pinodes</i> ), <i>Phoma medicaginis</i> var. <i>pinodella</i> , <i>Phoma koolunga</i> and <i>Didymella pisi</i>	Most obvious on stems and lower leaves. Purplish-black discolouration of lower stem. Dark brown spotting of pods and leaves. Blackening of stem base and upper taproot.	Common in all pea growing regions; most crops are affected to some extent. Favoured by wet conditions. Most damage in early sown crops.	Peas and most legumes	Crop rotation. Later sowing. Fungicidal seed dressings. Disease-free seed.
Bacterial blight	<i>Pseudomonas syringae</i> pv. <i>pisi</i> and <i>P. syringae</i> pv. <i>syringae</i>	Water-soaked spots on leaflets and stipules. Yellowish brown fan-shaped lesion on stipules.	Sporadic in wetter regions. Most severe in early sown crops already damaged by frost or heavy rain.	Peas for pv. <i>pisi</i> and alternate hosts for pv. <i>syringae</i>	Crop rotation. Disease-free seed. Resistant varieties.
Downy mildew	<i>Peronospora viciae</i>	Brown blotches on upper leaf surface. Underside of leaves covered by masses of fluffy 'mouse-grey' spores.	Sporadic in all regions. Damage most severe in wetter districts.	Peas	Resistant varieties. Seed fungicidal treatment.
Powdery mildew	<i>Erysiphe pisi</i>	Leaves covered by a film of powdery white spores. Infected plants have a blue-white colour.	Can occur in most regions towards the end of the season. Most common in late-sown crops.	Peas	Resistant varieties. Avoid late sowing. Apply foliar fungicide application at flowering as an economic option for disease-prone areas.
Septoria leaf blotch	<i>Septoria pisi</i>	Straw-coloured blotches on leaves, stems and tendrils. Pinhead-size black spots within lesions.	Present in most pea growing regions. Damage most severe on short, semi-leaffless varieties.	Peas	Destroy crop residue. Most varieties are moderately susceptible. Crop rotation.
VIRUS DISEASES					
PSbMV	Pea seed-borne mosaic virus	Downward curling of leaves, mosaic, stunting.	Present in all pea production areas.	Host range limited to Fabaceae	This virus is highly seed-borne in peas. Virus-free seed is recommended.
TuYV (previously BWYV)	Turnip yellows virus (previously known as Beet western yellows virus)	Yellowing of whole plant but can be symptomless in some varieties.	Present in all pea production areas.	Wide host range	Managing aphids and weeds, resistant varieties.
BLRV	Bean leafroll virus	Yellowing, stunting and leaf rolling.	Present in all pea production areas.	Host range limited to Fabaceae	Managing aphids and weeds, resistant varieties.

Data Source: [Identification & Management of Field Crop Diseases in Victoria \(2018\)](#). Reviewed by Joshua Fanning, Agriculture Victoria (2021).

**Table 5: Mallee and Wimmera field pea results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	MALLEE						WIMMERA					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		2.36	1.60	0.85	2.24	1.76		2.59	2.65	3.14	2.07	3.72
	No. trials	5	5	3	5	4	No. trials	2	2	1	3	2
GIA Kastar <sup>(b)*</sup>	4	-	-	-	-	78	2	-	-	-	-	78
GIA Ourstar <sup>(b)*</sup>	4	-	-	-	-	88	2	-	-	-	-	87
Kaspa <sup>(b)</sup>	22	80	95	90	99	92	10	109	85	94	85	93
Morgan <sup>(b)</sup>	1	-	-	-	85	-	1	-	-	-	91	-
Parafield	9	69	80	89	84	-	5	77	72	74	-	-
PBA Butler <sup>(b)</sup>	18	115	107	99	107	-	8	122	101	101	102	-
PBA Gunyah <sup>(b)</sup>	18	88	97	95	100	-	8	105	96	99	94	-
PBA Noosa <sup>(b)</sup>	16	128	103	108	97	103	6	-	-	93	103	100
PBA Oura <sup>(b)</sup>	22	86	94	100	96	100	10	88	104	97	106	100
PBA Pearl	22	105	100	102	103	112	10	109	110	94	120	112
PBA Percy <sup>(b)</sup>	22	98	97	109	89	95	10	75	92	80	112	93
PBA Taylor <sup>(b)</sup>	22	106	106	104	103	103	10	102	108	109	106	104
PBA Twilight <sup>(b)</sup>	7	70	89	91	96	-	1	-	-	-	91	-
PBA Wharton <sup>(b)</sup>	22	75	92	96	97	96	10	86	109	113	96	98
Sturt	3	118	-	-	88	-	0	-	-	-	-	-

Data Source: [National Variety Trials](#) (2016–2020).

\*Limited evaluation treat data with caution  
 - denotes no data available.

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# LENTIL

## NEW VARIETIES

There are four new lentil varieties which have been developed by Grains Innovation Australia (GIA) with potential for release. For further information on the availability of these varieties for 2022 contact PB Seeds.

- GIA2002L and GIA2003L are broadly adapted imidazolinone-tolerant small round red lentils.
- GIA1703L is an imidazolinone-tolerant small round red lentil with improved tolerance to clopyralid soil residues from a prior crop, applied according to product label directions.
- GIA2004L is a red lentil which is the first to combine imidazolinone and metribuzin herbicide tolerance.

## DISEASE UPDATE

There are no significant varietal resistance rating changes in lentil for 2021. It is important to check up-to-date varietal ratings to ensure you are managing varieties based on its current resistance rating. This document provides the most up-to-date ratings, with the Victorian Pulse Disease Guide providing any varietal resistance changes (if any) after the 2021 seasonal results.

## AGRONOMIC UPDATE

Growers are encouraged to sow pulses in the optimal sowing window and avoid delayed sowing unless there is a strategic management advantage related to disease or weed control, or they are being sown in a frost-prone region. In Victoria, heat events and rapidly drying soil during late spring in the flowering and podding phase occur almost every year and can cause significant yield loss when sowing has been delayed. As a result, early sowing has generally proved profitable.

With the introduction of newer varieties with different herbicide-tolerance traits, it is important that growers consider implications for the whole farming system and how best to utilise those traits within their system. It is notable that where herbicide residues or weeds are not a constraint to production, conventional varieties may produce a higher grain yield.

## MORE INFORMATION

[nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

[grdc.com.au](http://grdc.com.au)

- [Lentil Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Lentil in Victoria](#)
- [Agriculture Victoria Pulse Disease Guide](#)

[extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

[pulseaus.com.au](http://pulseaus.com.au)

Pulse Australia information on growing pulses including:

- [Growing Pulses – Lentils](#)
- [Crop protection permits in pulses](#)

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(<sup>Ⓛ</sup>) denotes Plant Breeder's Rights apply

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## RED LENTIL

### GIA LEADER<sup>Ⓛ</sup>

GIA Leader<sup>Ⓛ</sup> is an imidazolinone (IMI) tolerant red lentil variety with high disease resistance (both botrytis grey mould and ascochyta blight). It has medium-sized seed with a grey coat colour. Mid-late maturing, similar to Nugget. Spreading plant type which can assist protection of pods at maturity. Suited to early sowing times. Released 2021 (tested as GIA1701-L). Seed available from PB Seeds. EPR \$5.40.

### NEW – GIA2002L

GIA2002L is a new broadly adapted imidazolinone (IMI) tolerant small round red lentil. Potential release 2021 (tested as GIA2002L). Contact PB Seeds for further information on availability. EPR TBC.

### NEW – GIA2003L

GIA2003L is a new broadly adapted imidazolinone (IMI) tolerant small, round red lentil. Superior adaptation to light sandy soils than GIA2002L. Potential release 2021 (tested as GIA2003L). Contact PB Seeds for further information on availability. EPR TBC.

### NEW – GIA1703L

GIA1703L is the first imidazolinone (IMI) tolerant lentil with improved tolerance to clopyralid soil residues from a prior crop, applied according to product label directions. A small round red lentil with a grey seed coat, GIA1703L is best suited to early sowing and favourable lentil growing areas to maximise growth, height and yield. Avoid low-fertility sandy soils and low-rainfall, frost-prone environments. Potential release 2021 (tested as GIA1703L). Contact PB Seeds for further information on availability. EPR TBC.

### NEW – GIA2004L

A medium to large-sized red lentil with a grey seed coat, GIA2004L is the first lentil to combine imidazolinone (IMI) and metribuzin (MET) herbicide tolerances. Potential release 2021 (tested as GIA2004L). Contact PB Seeds for further information on availability. EPR TBC.

### PBA ACE<sup>Ⓛ</sup>

Vigorous medium-sized, mid-season red lentil with grey seed. Best suited to medium to higher-rainfall areas replacing Nugget and PBA Jumbo<sup>Ⓛ</sup>. Intolerant to salinity and boron. High milling quality. Released 2012. Seed available from PB Seeds. EPR \$5.00.

### PBA BLITZ<sup>Ⓛ</sup>

Medium-sized red lentil with a grey seed coat. Early flowering and suited to short growing seasons. Improved early vigour and an erect growth habit, suited to no-till and inter-row sowing. Intolerant of soil boron and salinity. Similar but generally improved milling characteristics compared to Nugget. Released 2010. Seed available from PB Seeds. EPR \$5.00.

### PBA BOLT<sup>Ⓛ</sup>

Medium-sized red lentil with grey seed, adapted to the Mallee and northern Wimmera. Similar to PBA Flash<sup>Ⓛ</sup> with early-mid maturity and improved boron and salinity tolerance. Its susceptibility to botrytis grey mould (BGM) makes it less suited to medium to high-rainfall areas in wetter years and with early sowing. A good variety for timely crop topping to control weeds. Erect habit and good lodging resistance make it easier to harvest in dry seasons. Released 2012. Seed available from PB Seeds. EPR \$5.00.

**PBA FLASH<sup>Ⓢ</sup>**

Early-mid maturing, medium-sized, with green seed coat, best suited to shorter season areas. Improved tolerance to boron and salinity compared to Nugget. A good variety for timely crop topping to control weeds. Improved standing ability at maturity which may make it more prone to pod drop in windy environments; timely harvest is required. Suited to medium red lentil grain markets, particularly for splitting, but must be segregated from grey seed coat varieties. Released 2009. Seed available from PB Seeds. EPR \$5.00.

**PBA HALLMARK XT<sup>Ⓢ</sup>**

Mid-season maturing with a medium seed size and grey seed coat. Greater early vigour and improved ratings to botrytis grey mould compared to PBA Hurricane XT<sup>Ⓢ</sup>. Tolerant to Intercept<sup>®</sup> herbicide, improved tolerance to the herbicide flumetsulam plus reduced sensitivity to some sulfonylurea and imidazolinone herbicide residues from prior crop applications, and improved tolerance to Brodal<sup>®</sup>. Provides an alternative market class option to the popular small red lentil PBA Hurricane XT<sup>Ⓢ</sup>. Released 2018. Seed available from PB Seeds. EPR \$5.40.

**PBA HIGHLAND XT<sup>Ⓢ</sup>**

Herbicide tolerant, small red lentil variety which will complement other tolerant varieties such as PBA Hallmark XT<sup>Ⓢ</sup> and PBA Hurricane XT<sup>Ⓢ</sup>. Tolerant to Intercept<sup>®</sup> herbicide, improved tolerance to the herbicide flumetsulam plus reduced sensitivity to some sulfonylurea and imidazolinone herbicide residues from prior crop applications. Early-mid maturing, a point of difference to other Group B-tolerant lines. Performs well in drier regions such as the Victorian Mallee. High early vigour and early flowering traits. It has improved resistance to ascochyta blight (MR) and maintains this level of resistance against an increasingly prevalent pathogen isolate that is virulent on other Group B-tolerant varieties. A good alternative herbicide-tolerant variety with high yielding capability, particularly in drier regions and seasons. Released 2019. See available from PB Seeds. EPR \$5.40.

**PBA HURRICANE XT<sup>Ⓢ</sup>**

A small seeded red lentil with mid flowering and mid maturing. Tolerant to Intercept<sup>®</sup> herbicide, improved tolerance to the herbicide flumetsulam plus reduced sensitivity to some sulfonylurea and imidazolinone herbicide residues from prior crop applications. Released 2013. Seed available from PB Seeds. EPR \$5.00.

**PBA JUMBO<sup>Ⓢ</sup>**

Large-seeded red lentil with a grey seed coat. Mid flowering and mid maturing. Suited to no-till inter-row sowing into standing stubble. Tolerance to soil boron is similar to PBA Bolt<sup>Ⓢ</sup>. Suited to medium to high-rainfall regions where it produces uniform larger seed size, suitable for the premium large red split markets. Has now been outclassed by PBA Jumbo2<sup>Ⓢ</sup>. Released 2010. Seed available from PB Seeds. EPR \$5.00.

**PBA JUMBO2<sup>Ⓢ</sup>**

Highest yielding large-seeded red lentil, yielding approximately nine to 13 per cent higher than PBA Jumbo<sup>Ⓢ</sup>. A direct replacement for Jumbo<sup>Ⓢ</sup> and Aldinga. Similar seed size to Jumbo and Aldinga, with a grey seed coat. Mid-flowering with maturity similar to PBA Jumbo<sup>Ⓢ</sup>. Well suited to no-till inter-row sowing into standing stubble. Tolerance to soil boron is similar to PBA Bolt<sup>Ⓢ</sup>. Suited to medium to high-rainfall regions where it produces uniform larger seed size, well suited to premium large red split markets. Released 2014. Seed available from PB Seeds. EPR \$5.00.

**PBA KELPIE XT<sup>Ⓢ</sup>**

Large-seeded herbicide-tolerant lentil variety. PBA Kelpie XT<sup>Ⓢ</sup> is 93 per cent of PBA Jumbo2<sup>Ⓢ</sup> in terms of seed size, with a grey seed coat and red cotyledon. Moderate to good early vigour, early-mid flowering and maturing, it is widely adapted to lentil growing regions of Australia. Released 2020 (tested as CIPAL1721). Seed available from Seednet. EPR \$5.40.

**GREEN LENTIL****PBA GIANT<sup>Ⓢ</sup>**

Largest seeded green lentil in Australia. PBA Giant<sup>Ⓢ</sup> is broadly adapted but best suited to the medium-rainfall growing regions. Similar yield to Boomer with improved shattering resistance, though timely harvest is still required to minimise shattering. Less susceptible to lodging at maturity than Boomer. Released 2014. Seed available from PB Seeds. EPR \$5.00.

**PBA GREENFIELD<sup>Ⓢ</sup>**

Medium-sized green lentil broadly adapted but best suited to the medium-rainfall growing regions. Highest yielding green lentil variety with yields similar to PBA Ace<sup>Ⓢ</sup>. Improved salinity tolerance and resistance to shattering, although timely harvest is still required. Released 2014. Seed available from PB Seeds. EPR \$5.00.

**Table 1: Lentil adaptability for Victorian rainfall zones.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	RAINFALL ZONE		
	Low <350mm	Med 350 to 500mm	High >500mm
<b>RED LENTIL</b>			
GIA Leader <sup>Ⓛ</sup>	✓	✓	✓
PBA Ace <sup>Ⓛ</sup>		✓	✓
PBA Blitz <sup>Ⓛ</sup>	✓	✓	
PBA Bolt <sup>Ⓛ</sup>	✓	✓	
PBA Flash <sup>Ⓛ</sup>	✓	✓	
PBA Hallmark XT <sup>Ⓛ</sup>		✓	✓
PBA Highland XT <sup>Ⓛ</sup>	✓	✓	
PBA Hurricane XT <sup>Ⓛ</sup>	✓	✓	✓
PBA Jumbo <sup>Ⓛ</sup>		✓	✓
PBA Jumbo2 <sup>Ⓛ</sup>	✓	✓	✓
PBA Kelpie XT <sup>Ⓛ</sup>		✓	✓
<b>GREEN LENTIL</b>			
PBA Giant <sup>Ⓛ</sup>		✓	
PBA Greenfield <sup>Ⓛ</sup>		✓	

\* Lentils are highly susceptible to waterlogging and soil acidity, so caution is advised in areas where these issues are likely to be a concern.

- denotes no rating available.

**Table 2: Agronomic characteristics of lentil varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	Grain type	Seed coat	Seed size	Flowering time	Maturity	Lodging	Shattering	Salinity	Boron
<b>SMALL RED LENTIL</b>									
PBA Highland XT <sup>Ⓛ</sup>	red	grey	small	early	early/mid	MR	MR	MI	I
PBA Hurricane XT <sup>Ⓛ</sup>	red	grey	small	mid	mid	MR	R	I	I
<b>MEDIUM RED LENTIL</b>									
GIA Leader <sup>Ⓛ</sup>	red	grey	medium	mid-late	mid-late	MRMS	-	-	-
PBA Ace <sup>Ⓛ</sup>	red	grey	medium	mid	mid	MRMS	MRMS	I	I
PBA Blitz <sup>Ⓛ</sup>	red	grey	medium	early	early	MR	MR	I	I
PBA Bolt <sup>Ⓛ</sup>	red	grey	medium	early/mid	early/mid	R	R	MI	MI
PBA Flash <sup>Ⓛ</sup>	red	green	medium	early/mid	early/mid	MR	MR	MI	MI
PBA Hallmark XT <sup>Ⓛ</sup>	red	grey	small/medium	mid	mid	MR	R	MI	I
<b>LARGE RED LENTIL</b>									
PBA Kelpie XT <sup>Ⓛ</sup>	red	grey	large	early/mid	early/mid	MRMS	R	MI	I
PBA Jumbo <sup>Ⓛ</sup>	red	grey	large	mid	mid	MS	MR	I	MI
PBA Jumbo2 <sup>Ⓛ</sup>	red	grey	large	mid	mid	MRMS	R	I	MI
<b>MEDIUM GREEN LENTIL</b>									
PBA Greenfield <sup>Ⓛ</sup>	yellow	green	medium	mid	mid/late	MS	MR	MI	I
<b>LARGE GREEN LENTIL</b>									
PBA Giant <sup>Ⓛ</sup>	yellow	green	large	mid	mid/late	MS	MRMS	I	MI

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

I = intolerant, MT = moderately tolerant, MI = moderately intolerant.

- denotes no rating available

**Table 3: Disease resistance ratings of lentil varieties.**

Variety	Ascochyta blight (foliar) <sup>a</sup>	Botrytis grey mould (BGM)	Root lesion nematode ( <i>Pratylenchus</i> )	
			<i>P. neglectus</i>	<i>P. thornei</i>
SMALL RED LENTIL				
PBA Highland XT <sup>b</sup>	MR	MS	MR	MRMS
PBA Hurricane XT <sup>b</sup>	MRMS	MS	MRMS	MRMS
MEDIUM RED LENTIL				
GIA Leader <sup>b</sup>	RMR	MR <sub>p</sub>	MSS <sub>p</sub>	MR <sub>p</sub>
PBA Ace <sup>b</sup>	R	MS	MR	MRMS
PBA Blitz <sup>b</sup>	MRMS	MRMS	MR	MRMS
PBA Bolt <sup>b</sup>	MRMS	S	MR	MR
PBA Flash <sup>b</sup>	MS	MS	MRMS	MRMS
PBA Hallmark XT <sup>b</sup>	MRMS	MR	MR	MRMS
LARGE RED LENTIL				
PBA Kelpie XT <sup>b</sup>	MRMS	MRMS <sub>p</sub>	MRMS <sub>p</sub>	MRMS
PBA Jumbo <sup>b</sup>	MRMS	MS	MR	MRMS
PBA Jumbo2 <sup>b</sup>	R	RMR	MR	MRMS
MEDIUM GREEN LENTIL				
PBA Greenfield <sup>b*</sup>	MRMS	MR	MR	MR
LARGE GREEN LENTIL				
PBA Giant <sup>b*</sup>	MR	MS	MR	MRMS

Data Source: [Agriculture Victoria Pulse Disease Guide \(2021\)](#).<sup>#</sup> The Ascochyta blight rating presented is the most susceptible rating combining both Pathotype 1 and 2, with both pathotypes identified in Victoria.

No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

*p* = provisional ratings – treat with caution. R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, S = susceptible, VS = very susceptible. - denotes no data available<sup>\*</sup> indicates data from before the new NVT system. In this case an R resistance rating may require a fungicide application under severe disease pressure to prevent yield loss in relation to seed staining.**Table 4: Lentil disease guide summary.**

Disease	Organism	Symptoms	Occurrence	Hosts	Control
Ascochyta blight	<i>Ascochyta lentis</i>	Leaves: small, round, whitish grey lesions with brown margins. Lesions contain small black fruiting bodies of the fungus. Lesions can also form on stems causing premature death. Pod infection can ultimately result in dark discolourations on seed.	Common in all lentil growing regions in southern Australia. Two disease resistance ratings are provided, one for foliar and one for seed/pod infection. The two ratings may vary between varieties. Damage is most likely in wet seasons.	Lentils – seed, stubble and self-sown plants.	Fungicidal seed dressings. Resistant varieties. Foliar fungicides. Crop rotation. Avoid early sowing.
Botrytis grey mould	<i>Botrytis cinerea</i>	Leaves: white, round lesions/spots without black fruiting bodies as in ascochyta blight.	Most likely to occur in dense, lodged crops when there is frequent rain late in spring.	Most legumes including chickpeas, faba bean and vetch.	Fungicidal seed dressings. Low plant density. Avoid early sowing. Foliar fungicides.
	<i>B. fabae</i>	Stems: pale brown-grey lesions form on stems that are covered with fluffy grey mould. Botrytis grey mould can cause branches to die and cause discoloured and shrivelled seed.			
		In severe cases large brown patches can form in the crop.			
VIRUS DISEASES					
AMV	Alfalfa mosaic virus	Tip necrosis. Young leaves are pale green, small, twisted and distorted. A faint mosaic pattern may appear.	Prevalent in lentil production regions with high aphid numbers.	Wide host range including most pulses, some horticultural plants and weeds.	Virus-free seed, management of weeds resistant varieties.
CMV	Cucumber mosaic virus	Yellowing, stunting. Young leaves are pale green, small, twisted and distorted. A faint mosaic pattern may appear.	Common in all lentil growing areas with high aphid numbers.	Very wide host range including most pulses, pastures, some horticultural plants and weeds.	Virus-free seed, management of weeds resistant varieties.
TuYV (previously BWYV)	Turnip yellows virus (previously known as Beet western yellows virus)	Yellowing, stunting. Produces the most severe symptoms of all the viruses but can be symptomless in some varieties.	Present in all lentil production areas with high aphid numbers.	Very wide host range including most pulses and brassicas, some horticultural plants and many weed species.	Managing weeds and aphids, resistant varieties.

Data Source: [Identification and Management of Field Crop Diseases in Victoria \(2018\)](#). Reviewed by Joshua Fanning, Agriculture Victoria (2021).

**Table 5: Mallee and Wimmera lentil results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

		MALLEE						WIMMERA				
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		2.58	1.43	0.49	1.61	1.56		1.73	2.57	1.52	1.79	2.42
	No. trials	2	5	4	4	3	No. trials	2	3	3	3	2
GIA Leader <sup>Ⓛ</sup>	5	-	-	-	98	108	4	-	-	-	102	96
PBA Ace <sup>Ⓛ</sup>	18	92	115	114	103	117	13	101	107	109	107	107
PBA Blitz <sup>Ⓛ</sup>	10		88	88	97	80	8	-	92	90	94	98
PBA Bolt <sup>Ⓛ</sup>	18	100	102	101	101	105	13	106	102	102	101	100
PBA Flash <sup>Ⓛ</sup>	13	107	107	105	104	-	9	94	100	99	104	-
PBA Greenfield <sup>Ⓛ</sup>	5	-	116	118	105	-	4	-	108	107	110	-
PBA Hallmark XT <sup>Ⓛ</sup>	18	98	99	101	98	109	13	104	104	105	100	92
PBA Highland XT <sup>Ⓛ</sup>	18	112	104	102	104	110	13	115	104	103	103	101
PBA Hurricane XT <sup>Ⓛ</sup>	18	101	97	100	98	104	13	98	102	104	99	93
PBA Jumbo <sup>Ⓛ</sup>	13	89	104	103	99	-	9	87	97	97	100	-
PBA Jumbo2 <sup>Ⓛ</sup>	18	119	112	109	107	107	13	99	105	103	108	114
PBA Kelpie XT <sup>Ⓛ</sup>	16	-	98	99	103	96	11	-	102	99	102	103

Data Source: [National Variety Trials](#) (2016–2020)

- denotes no data available

## ACKNOWLEDGEMENTS

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# FABA BEAN

## NEW VARIETIES

There are no new faba bean varieties available for growing in 2022.

## DISEASE UPDATE

There are two significant changes to faba bean chocolate spot resistance ratings in 2021. PBA Bendoc<sup>®</sup> has been downgraded from moderately susceptible (MS) to susceptible (S), meaning it will need a proactive integrated disease management plan in place. PBA Amberley has been downgraded from moderately resistant (MR) to moderately resistant/moderately susceptible (MRMS) but is still a step above the resistance of other varieties.

In a high disease pressure environment, yield gains of 107 per cent were observed in PBA Amberley<sup>®</sup> when fungicides were applied to control chocolate spot in Agriculture Victoria and Southern Farming Systems trials at Hamilton during 2020. These results highlight the importance of not just relying on the varietal resistance in PBA Amberley<sup>®</sup>.

A successful integrated disease management plan will include paddock rotation, good agronomy, selecting a more resistant variety, seed treatments, in-crop monitoring, fungicide applications and rotation of fungicide actives.

## MORE INFORMATION

### [nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

### [grdc.com.au](http://grdc.com.au)

- [Faba Bean Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

### [agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Faba Bean in Victoria](#)
- [Agriculture Victoria Pulse Disease Guide](#)

### [extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

### [pulseaus.com.au](http://pulseaus.com.au)

- [Growing Pulses – Faba Bean](#)

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(b) denotes Plant Breeder's Rights apply  
End Point Royalty (EPR) 2021-22 quoted  
\$/tonne ex-GST.



## FABA BEAN VARIETIES

### PBA AMBERLEY<sup>Ⓛ</sup>

Mid flowering and mid maturing. Good standing ability and a low level of 'necking'. Grain size similar to PBA Samira<sup>Ⓛ</sup>. High yield advantage over other varieties in high-rainfall regions. PBA Amberley<sup>Ⓛ</sup> is the most resistant faba bean to chocolate spot currently available with a MRMS rating. Released 2019. Seed available from Seednet. EPR \$3.50.

### PBA BENDOC<sup>Ⓛ</sup>

Mid flowering and early-mid maturing, with medium height. Medium-sized seed suited to the Middle East markets. Improved tolerance to some Group B herbicides, Nufarm's Intercept<sup>®</sup> is now the registered product for use on PBA Bendoc<sup>Ⓛ</sup>. It is important to note that growers must adhere to product label rates, plant back periods and all label directions for use. Developed by PBA. Released 2018. Seed available from Seednet. EPR \$3.90.

### FARAH<sup>Ⓛ</sup>

Farah<sup>Ⓛ</sup> is an early-mid maturing faba bean with similar agronomic traits but slightly higher yield than Fiesta VF. Farah<sup>Ⓛ</sup> performs best in medium-rainfall environments. Released 2003. Free to trade. EPR \$3.00.

### PBA MARNE<sup>Ⓛ</sup>

An early-mid flowering, high-yielding faba bean with good adaptation to the lower-rainfall and short season areas. Potential to expand faba bean production into areas that are currently considered marginal and improve reliability in established areas during below-average rainfall seasons. Light brown, medium-sized seed. Suitable for mixing with current faba bean varieties for export to the major food markets in the Middle East. Developed by PBA. Released 2018. Seed available from Seednet. EPR \$3.50.

### NURA<sup>Ⓛ</sup>

Shorter than Fiesta VF and Farah<sup>Ⓛ</sup>, and less likely to lodge, however bottom pods are closer to the ground. Needs to be sown early as it flowers about seven days later than Fiesta, but it matures at a similar time. Released 2005. Commercialised by Seednet. EPR \$3.00.

### PBA RANA<sup>Ⓛ</sup>

Mid flowering and maturing variety suited to higher-rainfall, long-season regions. Seed is med-large and is considered high quality by the major Egyptian market. Developed by PBA. Released 2011. Commercialised by Seednet. EPR \$3.50.

### PBA SAMIRA<sup>Ⓛ</sup>

A high-yielding variety with wide adaptation. Later flowering allows for advantage of late rainfall in longer season environments. Seed is slightly larger than Farah<sup>Ⓛ</sup> and is suited to Middle East markets. Developed by PBA. Released 2014. Seed available from Seednet. EPR \$3.50.

### PBA ZAHRA<sup>Ⓛ</sup>

A high-yielding, mid flowering and mid-late maturing variety. Performs well in longer season environments. Seed is larger than Farah<sup>Ⓛ</sup> and similar to PBA Rana<sup>Ⓛ</sup>, suited to Middle East markets. Developed by PBA. Released 2016. Commercialised by Seednet. EPR \$3.50.

## BROAD BEAN VARIETIES

### AQUADULCE

Tall, late flowering broad bean with some tolerance to waterlogging as well as iron and manganese deficiencies. Best suited to high-rainfall districts. Released 1982.

### PBA KAREEMA

PBA Kareema is a direct replacement for variety Aquadulce. Requires a long growing season like Aquadulce, best suited to high-rainfall districts. Released 2010. No EPR.

**Table 1: Faba bean adaptability for Victorian rainfall zones.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	RAINFALL ZONE		
	Low <350mm	Med 350 to 500mm	High >500mm
FABA BEAN			
PBA Amberley <sup>db</sup>		✓	✓
PBA Bendoc <sup>db</sup>		✓	✓
Farah <sup>db</sup>	✓	✓	✓
PBA Marne <sup>db</sup>	✓	✓	✓
Nura <sup>db</sup>		✓	✓
PBA Rana <sup>db</sup>		✓	✓
PBA Samira <sup>db</sup>	✓	✓	
PBA Zahra <sup>db</sup>		✓	✓
BROAD BEAN			
Aquadulce		✓	✓
PBA Kareema		✓	✓

**Table 2: Agronomic characteristics of faba bean varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	Seed size	Seed colour	Plant height	Flowering time	Maturity	Lodging resistance
FABA BEAN						
Farah <sup>db</sup>	medium	light brown/brown	medium	early-mid	early-mid	MS
Nura <sup>db</sup>	small-med	light buff	short	mid	early-mid	MR
PBA Amberley <sup>db</sup>	med-large	light brown	medium	mid	mid-late	R
PBA Bendoc <sup>db</sup>	medium	light brown	medium	mid	early-mid	MS
PBA Marne <sup>db</sup>	medium	light brown	medium	early-mid	early-mid	MR
PBA Rana <sup>db</sup>	med-large	light brown	med-tall	mid	mid	MR
PBA Samira <sup>db</sup>	medium	light brown	medium	mid	mid	MR
PBA Zahra <sup>db</sup>	med-large	light brown	med-tall	mid	mid-late	MR
BROAD BEAN						
Aquadulce	large	light brown	tall	late	mid-late	MS
PBA Kareema	large	light brown	tall	late	late	MS

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

**Table 3: Disease resistance ratings of faba bean varieties.**

Variety	Ascochyta blight	Chocolate spot (botrytis)	Cercospora	Rust	PSbMV seed staining*	Root lesion nematode ( <i>Pratylenchus</i> )	
						<i>P. thornei</i>	<i>P. neglectus</i>
FABA BEAN							
Farah <sup>db</sup>	S	S	S	VS	Sp	MS	MR
Nura <sup>db</sup>	RMR	MS	S	S	VSp	MS	MR
PBA Amberley <sup>db</sup>	RMR	MRMS	S	VS	-	MSp	MR
PBA Bendoc <sup>db</sup>	MR	S	S	S	Sp	MRMSp	RMRp
PBA Marne <sup>db</sup>	MRMS	S	S	MRMS	MRp	MS	MR
PBA Rana <sup>db</sup>	MRMS	MS	S	S	MRp	MS	MR
PBA Samira <sup>db</sup>	RMR	MS	S	S	Sp	MRMS	MR
PBA Zahra <sup>db</sup>	MRMS	MS	S	VS	Sp	MS	MR
BROAD BEAN							
Aquadulce	MS	MS	S	MS <sup>#</sup>	Sp	MS	MR
PBA Kareema	MR	MS	S	MRMS <sup>#</sup>	Sp	-	-

Data Source: [Agriculture Victoria Pulse Disease Guide \(2021\)](#).

PSbMV = pea seed-borne mosaic virus. # Breeder data. \* Rating derived from a 2019 project and have not been reviewed since.

p = provisional ratings – treat with caution. R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, S = susceptible, VS = very susceptible. - denotes no data available.

No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

Table 4: Faba bean disease guide summary.

Disease	Organism	Symptoms	Occurrence	Hosts	Control
Ascochyta blight	<i>Ascochyta fabae</i>	Large, light tan to grey lesions on leaves. Small black fruiting bodies develop within spots. Centres of lesions may fall out, leaving holes in leaves. Sunken lesions on stem similar in colour to leaf lesions. Brown-black discolouration of grain.	Common in all faba bean growing areas in southern Australia. Usually the first disease present in new crops. Most severe in wet seasons.	Faba bean, vetch. Spores spread by wind and rain.  Infected seed.	Foliar fungicides. Resistant varieties. Crop rotation. Control volunteer plants. Clean seed.
Chocolate spot	<i>Botrytis fabae</i>	Passive phase: small chocolate coloured spots scattered over leaves.	Occurs in all areas where beans are grown. Disease usually becomes established in late winter and becomes more severe as day temperatures increase during spring. Can destroy unprotected crops in wet seasons.	Faba bean. Spores spread by wind and rain.	Foliar fungicides. Resistant varieties. Crop rotation. Control volunteer plants.
	<i>B. cinerea</i>	Aggressive phase: tissue around spots turns dark grey and black. Leaves die and blacken.			
Cercospora leaf spot	<i>Cercospora zonata</i>	Dark irregular lesions, with a distinct margin on the leaf. Easily confused with Ascochyta blight or Chocolate spot but distinguished by the concentric pattern within lesions.	Occurs in all areas where beans are grown.	Faba bean, vetch.	Foliar fungicides.
Rust	<i>Uromyces viciae-fabae</i>	Numerous small, orange-brown rust pustules, surrounded by a light yellow halo on the leaves of infected plants.	Most prevalent in northern Australia. Crops usually affected late in the season.	Faba bean	Foliar fungicides. Crop rotation. Control volunteer plants.
Sclerotinia stem rot	<i>Sclerotinia trifoliorum</i> var. <i>fabae</i>	Infection usually begins close to ground level and slimy wet rot extends into stem and down into the roots. Plants easily pulled from soil and have blackened base covered with cottony, white fungus growth. Usually isolated plants that suddenly wilt and collapse. Sclerotia on surface and within stem turn from white to black.	Rapid development of disease in wet, cool conditions.	Wide host range. Foliar form of disease spread by airborne spores. Fungus survives in the soil for many years.	Crop rotation. Lower sowing rates, wider row spacing and good weed control.
Stem nematode	<i>Ditylenchus dipsaci</i>	Patches of malformed and stunted plants with curling leaves and water-soaked spots. Stem may die back, turning reddish-brown colour.	Most severe in wet seasons.	Faba bean, pea, oat, wild oat. Infected seed, straw or soil. Nematodes can survive many years in seed, straw or soil.	Seed test. Crop rotation.
VIRUS DISEASES					
SCSV	Subterranean clover stunt virus	Stunting, tip yellowing, small and thick leaves.	Prevalent in all bean growing areas, symptoms appear early on faba bean.	Sub-clover, faba bean, lupin, lentil, chickpea, lucerne, soybean.	Managing aphids and weeds.
BLRV	Bean leafroll virus	Interveinal yellowing, leaf rolling, stunting, leathery leaves.	Occurs in all bean growing areas.	The host range is limited to Fabaceae.	Managing aphids.
PSbMV	Pea seed-borne mosaic virus	Can be symptomless or systemic dark and light green leaf mottle, leaf margins upright, leaf blade reduced in size. Seeds have brown rings or line patterns on surface.	Occurs in all bean growing areas.	Host range is limited to Fabaceae.	Virus-free seed is recommended. Managing aphids.

Data Source: [Identification & Management of Field Crop Diseases in Victoria](#) (2018). Reviewed by Joshua Fanning, Agriculture Victoria (2021).

**Table 5: North Central and North East faba bean results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	NORTH CENTRAL				NORTH EAST		
Year		2016	2017	2018		2018	2020
Mean yield t/ha		6.19	7.39	6.20		0.74	4.03
	No. trials	1	1	1	No. trials	1	1
Farah <sup>db</sup>	3	89	95	99	2	89	101
Fiesta VF	2	99	96	-	2	93	102
Nura <sup>db</sup>	2	79	-	100	2	85	101
PBA Amberley <sup>db</sup>	3	109	103	103	2	105	104
PBA Bendoc <sup>db</sup>	2	-	93	102	2	96	97
PBA Marne <sup>db</sup>	3	96	103	102	2	96	99
PBA Rana <sup>db</sup>	0	-	-	-	1	83	-
PBA Samira <sup>db</sup>	3	107	101	101	2	102	101
PBA Zahra <sup>db</sup>	3	90	94	94	2	102	93

NOTE: 2019 and 2020 North Central and 2019 North East data not published due to compromised trials.

Data Source: [National Variety Trials](#) (2016–2020)

- denotes no data available .

**Table 6: Wimmera and South West faba bean results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	WIMMERA						SOUTH WEST					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield t/ha		3.23	4.61	2.71	2.41	4.64		5.52	4.61	3.41	3.61	4.20
	No. trials	4	5	4	5	3	No. trials	1	1	2	1	1
Farah <sup>db</sup>	21	89	97	99	98	107	6	101	103	97	102	105
Fiesta VF	16	92	96	97	94	104	2	107	-	-	-	107
Fiord	2	98	98	-	-	-	0	-	-	-	-	-
Nura <sup>db</sup>	21	85	96	100	101	107	6	95	104	98	101	100
PBA Amberley <sup>db</sup>	20	100	99	100	102	103	6	97	103	108	100	107
PBA Bendoc <sup>db</sup>	21	89	100	103	111	104	6	92	109	103	94	93
PBA Marne <sup>db</sup>	21	109	101	99	93	88	6	92	87	93	106	82
PBA Rana <sup>db</sup>	16	88	91	94	86	-	5	108	100	100	112	-
PBA Samira <sup>db</sup>	21	100	101	100	101	107	6	107	103	101	99	112
PBA Zahra <sup>db</sup>	21	94	102	102	108	103	6	111	109	97	91	100

Data Source: [National Variety Trials](#) (2016–2020).

- denotes no data available

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# LUPIN

## NEW VARIETIES

There are no new lupin varieties available for sowing in Victoria for 2022.

## DISEASE UPDATE

There are no significant varietal resistance rating changes in lupin for 2021. It is important to check up-to-date varietal ratings to ensure you are managing varieties based on current resistance ratings. This document provides the most up-to-date ratings, with the Victorian Pulse Disease Guide providing any varietal resistance changes (if any) after the 2021 seasonal results.

Agriculture Victoria reminds growers that there are restrictions for lupin seed entering Victoria which must be complied with to avoid a lupin anthracnose outbreak. This also applies to machinery used for lupins. For more information contact an Agriculture Victoria Plant Standards Officer by telephoning 136 186.

## MORE INFORMATION

### [nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

### [grdc.com.au](http://grdc.com.au)

- [Lupin Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

### [agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Lupin in Victoria](#)
- [Agriculture Victoria Pulse Disease Guide](#)

### [extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

### [pulseaus.com.au](http://pulseaus.com.au)

- [Growing pulses – Lupin](#)
- [Crop protection permits in pulses](#)

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(b) denotes Plant Breeder's Rights apply

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## NARROW-LEAFED LUPIN VARIETIES

### PBA BARLOCK<sup>Ⓢ</sup>

Early variety with slightly later flowering and maturity than Mandelup<sup>Ⓢ</sup>, with a greater yield potential, reduced lodging and good resistance to pod shatter. Similar metribuzin tolerance to that of Mandelup<sup>Ⓢ</sup> and better than Wonga. Released 2014. Commercialised by Seednet. EPR \$2.50.

### PBA BATEMAN<sup>Ⓢ</sup>

Early flowering lupin variety with improved virus resistance. Well suited to high-rainfall zones. PBA Bateman<sup>Ⓢ</sup> has similar harvest grain loss risk and resistance to pod shatter as PBA Barlock<sup>Ⓢ</sup>. Similar tolerance to metribuzin as PBA Jurien<sup>Ⓢ</sup>, PBA Barlock<sup>Ⓢ</sup> and PBA Gunyidi<sup>Ⓢ</sup>. Released 2017. Seed available from Seednet. EPR \$2.60.

### COYOTE<sup>Ⓢ</sup>

Coyote<sup>Ⓢ</sup> is the first narrow-leaf lupin variety to be released by AGT. Performs well across a very broad range of soil types, rainfall zones and yield potentials. It is early maturing (similar to PBA Jurien<sup>Ⓢ</sup>), with metribuzin tolerance similar to Mandelup<sup>Ⓢ</sup>. Coyote<sup>Ⓢ</sup> is moderately susceptible to phomopsis; graze lupin stubbles with care in high-risk environments. Released 2019. Bred and marketed by AGT. EPR \$3.00.

### JENABILLUP<sup>Ⓢ</sup>

Tall, mid-flowering narrow-leaf lupin with early vigour. Moderately resistant to lodging and suitable for medium to high-rainfall areas. Longer flowering window compared to Mandelup<sup>Ⓢ</sup>, making it less suitable for crop topping. Poor tolerance of foliar metribuzin. Released 2007. Commercialised by Seednet. EPR \$2.30.

### PBA JURIE<sup>Ⓢ</sup>

Early maturing variety. Early flowering, slightly earlier than PBA Barlock<sup>Ⓢ</sup>. Similar in height to Mandelup<sup>Ⓢ</sup>, MS to lodging in high-rainfall regions. Medium to large seed, similar to Mandelup<sup>Ⓢ</sup>. Alkaloid content similar to PBA Gunyidi<sup>Ⓢ</sup>. Tolerance to metribuzin is better than Mandelup<sup>Ⓢ</sup>. Developed by PBA. Released 2015. Seed available from Seednet. EPR \$2.50.

### MANDELUP<sup>Ⓢ</sup>

A tall, very early flowering and maturing variety suited to low to medium-rainfall zones. Suitable for crop topping. Mandelup<sup>Ⓢ</sup> may lodge in high-rainfall zones. Pod shatter with delayed harvest, and poorer seed germination rate and establishment may occur with rain before harvest. It can produce unacceptable levels of seed phomopsis under high disease pressure. Good tolerance to metribuzin. Released 2004. Free to trade. EPR \$2.30.

## ALBUS LUPIN VARIETIES

### LUXOR<sup>Ⓢ</sup>

Luxor is earlier flowering than its sister line Rosetta. Resistant to pleiochaeta root rot (the cause of many seedling deaths in older varieties). Released in 2005. Commercialised by Seednet. EPR \$2.80.

### MURRINGO<sup>Ⓢ</sup>

Mid flowering variety suited to medium to high-rainfall zones. Slightly longer maturity time to Luxor<sup>Ⓢ</sup>. Suitable sowing time window of late-April to mid-May. Murringor<sup>Ⓢ</sup> should not be grown within one kilometre of other albus lupin varieties to avoid contamination. Released 2017. Seed available from Seednet. EPR \$3.20.



**Table 1: Lupin adaptability for Victorian rainfall zones.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	RAINFALL ZONE		
	Low <350mm	Med 350 to 500mm	High >500mm
<b>NARROW-LEAFED LUPIN</b>			
Coyote <sup>db</sup>	✓	✓	
Jenabillup <sup>db</sup>		✓	✓
Mandelup <sup>db</sup>	✓	✓	
PBA Barlock <sup>db</sup>		✓	
PBA Bateman <sup>db</sup>	✓	✓	
PBA Jurien <sup>db</sup>	✓	✓	
<b>ALBUS LUPIN</b>			
Luxor <sup>db</sup>		✓	
Murringio <sup>db</sup>		✓	

**Table 2: Agronomic characteristics of lupin varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	Flowering time	Height	Lodging	Pod shattering	Aphid resistance
<b>NARROW-LEAFED LUPIN</b>					
Coyote <sup>db</sup>	E	T	-	-	-
Jenabillup <sup>db</sup>	M	T	MR	MS	MR
Mandelup <sup>db</sup>	VE-E	T	MS	MS	R
PBA Barlock <sup>db</sup>	E	M	MR	R	R
PBA Bateman <sup>db</sup>	E	M	MRMS	MRMS	R
PBA Jurien <sup>db</sup>	E	T	MS	MR	-
Wonga	E-M	M	MR	R	MR
<b>ALBUS LUPIN</b>					
Luxor <sup>db</sup>	E-M	M-T	R	R	S
Murringio <sup>db</sup>	M	M	R	R	S

Flowering time: VE = very early, E = early, M = mid, L = late. Height: S = short, M = medium, T = tall.

R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible,

MSS = moderately susceptible to susceptible, S = susceptible, VS = very susceptible.

- denotes no rating available.

**Table 3: Disease resistance ratings of lupin varieties.**

Variety	Brown leaf spot	Pleiochaeta root rot	Cucumber mosaic virus (CMV) (seed transmitted)*	Anthracnose	Phomopsis	
					Stem	Pod/seed
NARROW-LEAFED LUPIN						
Coyote <sup>db</sup>	MR <sub>p</sub>	MR <sub>p</sub>	MR <sub>p</sub>	MR <sub>p</sub>	Sp	MRMS <sub>p</sub>
Jenabillup <sup>db</sup>	MRMS	MR <sub>p</sub>	MRMS <sub>p</sub>	MS	MS	MR
Mandelup <sup>db</sup>	MS	MRMS <sub>p</sub>	MRMS <sub>p</sub>	MRMS	RMR	MS
PBA Barlock <sup>db</sup>	MS	MRMS	MR <sub>p</sub>	RMR	MR	MR
PBA Bateman <sup>db</sup>	MS	MR <sub>p</sub>	MR <sub>p</sub>	MRMS <sub>p</sub>	RMR	MS
PBA Jurien <sup>db</sup>	MS	MR	MS <sub>p</sub>	RMR	RMR	MR
Wonga	MS	MR <sub>p</sub>	MS <sub>p</sub>	RMR	MR	MR
ALBUS LUPIN						
Luxor <sup>db*</sup>	MR	R	Immune	VS	MR	S
Murringio <sup>db*</sup>	MR	MR	Immune	VS	MS	S

Data Source: [Agriculture Victoria Pulse Disease Ratings \(2021\)](#).

p = provisional ratings – treat with caution. R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible,

MS = moderately susceptible, S = susceptible, VS = very susceptible.

\*Indicates data from before the new NVT system. No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

**Table 4: Lupin disease guide summary.**

Disease	Organisms	Symptoms	Occurrence	Inoculum source	Control
<b>FUNGAL DISEASES</b>					
Brown leaf spot	<i>Pleiochaeta setosa</i>	Dark brown spots on cotyledons leaves and pods, often net-like on leaves, infected leaves drop off, lesions may girdle stem.	Very common but losses usually minor in dry areas, yield loss can be significant in cool, damp areas.	Spores in soil and lupin trash, rain-splash and windblown.	Fungicide seed dressings, crop rotations, resistant varieties selection, early sowing.
Pleiochaeta root rot	<i>Pleiochaeta setosa</i>	Browning and rotting of tap and lateral roots, seedling plant death.	Serious reduction in lupin plant density and vigour.	Spores in soil infecting roots, usually at seedling stage.	Minimum four-year rotation between lupins, sowing 4 to 5cm deep to avoid spore layer, fungicide seed dressings.
Rhizoctonia	<i>Rhizoctonia</i> spp.	Bare patches in crop, spear-tipped root ends, hypocotyl rot and stain.	Can be severe in isolated patches, reduces stand density, favoured by minimum tillage, wet soils and mild conditions.	Soil-borne infection with wide host range, survives as fungal fragments in soil and plant debris.	Rotation of crops with other pulses, tillage can help, increased seedling rate.
Anthraxnose	<i>Colletotrichum lupini</i>	Stems/branches bend over, brown lesions with pink/orange spore masses in crook bend, dark lesions with pink/orange spores on flower spike and pods.	Severe infections can result in severing of stems or total pod abortion, resulting in complete crop failure.	Seed-borne disease, infected seed produces infected seedlings. Spread in crop by rain-splash and wind.	Clean seed and machinery, destroy infected regrowth, resistant varieties, fungicide seed dressings reduce seedling infection.
Phomopsis stem and pod blight	<i>Diaporthe toxica</i>	Dark purplish lesions that bleach with age and contain black fruiting bodies and can cause plants to lodge. Severe lesions may girdle the stem and kill the plant.  Saprophytic growth of fungus in stubble and seed produces mycotoxin which causes lupinosis in grazing animals	Can infect stems, leaves, pods and seeds of lupins. Prematurely dying plants after pod set can be seen in crops, particularly in parts of the paddock stressed by drought, frost or herbicides.	Fungus can survive on lupin trash and seed, rain-splash and windblown.	Crop rotation and increasing the break between lupin crops, variety selection, seed treatment.
Sclerotinia	<i>Sclerotinia sclerotiorum</i>	White fungal growth containing black sclerotia in upper stem, branches or colonising pods. Stem death above lesion. Sclerotia contaminating harvested seed.	Most common in higher-rainfall or wetter regions with dense canopies. More likely with canola in the rotation but can affect several broadleaf crops.	Sclerotia survive in soil and trash for several years. Wide host range in broadleaf crops.	Avoid lupins following broadleaf crops or pasture (particularly canola). <u>No</u> variety resistance.
<b>VIRUS DISEASES</b>					
CMV	Cucumber mosaic virus	All growth after infection is dwarfed, leaflets are yellowed and bunched.	Early widespread infection severely reduces yield. Minor infections prevent use of harvested grain as seed.	Seed-borne infection in narrow-leaf lupin, aphids transmit the disease within a crop. Wide host range.	Sow virus-free seed, use a seed test, high sowing rates and cereal barriers around crops reduce aphid transmission.
BYMV (Black pod syndrome)	Bean yellow mosaic virus	Brown necrotic streaks as plant dies back from growing point of stem, shepherd crook of stem, pods blackened and flat, leaves yellow, plants wilt and die.	Occurs in all lupin growing areas. Can be severe in higher-rainfall areas.	Seed-borne in albus but not narrow-leaved lupin, aphid spread in crop, many host species.	Sow virus-free seed. High plant density, cereal buffer.

Data Source: *Identification & Management of Field Crop Diseases in Victoria* (2018). Reviewed by Joshua Fanning, Agriculture Victoria (2021).**Table 5: Mallee narrow-leaved lupin results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

MALLEE						
Year		2016	2017	2018	2019	2020
Mean yield (t/ha)		1.69	1.06	0.90	1.41	1.64
	No. trials	1	1	1	2	1
Coyote <sup>db</sup>	4	115	115	110	-	96
Jenabillup <sup>db</sup>	6	100	104	92	116	101
Mandelup <sup>db</sup>	5	97	94	-	96	98
PBA Barlock <sup>db</sup>	5	92	85	-	102	93
PBA Bateman <sup>db</sup>	5	111	-	103	118	99
PBA Gunyidi <sup>db</sup>	5	108	108	-	109	99
PBA Jurien <sup>db</sup>	5	98	87	-	104	90
Quilinoock	6	91	92	89	111	99
Wonga	6	87	89	87	95	102

Data Source: *National Variety Trials* (2016–2020).

- denotes no data available

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# CHICKPEA

## NEW VARIETIES

There were no new chickpea varieties released in 2021 for commercial production in 2022.

## DISEASE UPDATE

All chickpeas remain at least moderately susceptible (MS) to Ascochyta blight, making an integrated disease management plan an important part of growing chickpeas. Despite their susceptibility, a MS variety still offers significantly more resistance to Ascochyta blight compared to a susceptible (S) variety.

A successful integrated disease management plan will include paddock rotation, good agronomy, selecting a more resistant variety, seed treatments, in-crop monitoring, fungicide applications and rotation of fungicide actives. New research in agronomy has highlighted that sowing chickpeas into a standing stubble (>15cm height) can reduce Ascochyta blight disease severity similarly to changing from a S to MS variety.

## AGRONOMIC UPDATE

Chickpeas have a relatively broad sowing window, particularly in the medium and higher-rainfall zones, if subsoil moisture is available. While long-term results indicate that early sowing is generally most profitable, recent seasons have continued to show poor tolerance of cold temperatures during flowering. Later sowing (June and July) or even spring sowing can be a profitable option for chickpeas, and minimises costs associated with weed and disease control. Chickpeas have excellent adaptation to higher temperatures during the reproductive phase, when stored soil moisture is available.

## MORE INFORMATION

[nvt.grdc.com.au](http://nvt.grdc.com.au)

- Detailed NVT trial results and links to variety information
- NVT Long-term Yield Reporter

[grdc.com.au](http://grdc.com.au)

- [Chickpea Southern region – GRDC GrowNotes™](#)
- [GRDC Southern region NVT Harvest reports](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

- [Growing Chickpea in Victoria](#)
- [Agriculture Victoria Pulse Disease Guide](#)

[extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

- Expert support on field crop diseases in Victoria at your fingertips

[pulseaus.com.au](http://pulseaus.com.au)

- [Crop protection permits in pulses](#)
- [Chickpea Disease Management Strategy](#)

## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of the breeder, NVT, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. Where possible, in addition to data supplied below from long-term NVT trials, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(<sup>Ⓛ</sup>) denotes Plant Breeders Rights apply.

End Point Royalty (EPR) 2021-22 quoted \$/tonne ex-GST.

## DESI TYPE

### CBA CAPTAIN<sup>Ⓛ</sup>

Medium seed size variety with broad adaption to Victorian Desi chickpea growing areas. Erect plant type with good plant height and height to lowest pod. Mid-flowering and mid-maturing in Victorian growing environments. Good grain size, similar to PBA HatTrick<sup>Ⓛ</sup> and meets the requirements of a 'Jimbour type', suitable for the sub-continent market. Released 2020 (tested as CICA1521). Chickpea Breeding Australia seed partners for Victoria are PB Seeds and AG Schilling & Co. EPR \$4.50.

### PBA MAIDEN<sup>Ⓛ</sup>

Med-large angular seed size, yellow-tan in colour. Mid-flowering and mid-maturing. Growers are advised to investigate delivery and marketing options prior to growing this variety due to its unique and favourable seed characteristics. Suitable for the whole seed market. Released 2013. EPR \$4.00.

### PBA SLASHER<sup>Ⓛ</sup>

PBA Slasher is a mid-flowering and maturing variety. Seed is medium sized, tan-brown in colour and has excellent milling quality. Suitable for both split and whole seed markets. Released 2009. Commercialised by Seednet. EPR \$4.00.

### PBA STRIKER<sup>Ⓛ</sup>

Excellent adaptation to short-season environments due to early flowering and maturity. Medium seed size. Excellent milling quality. Released 2012. Commercialised by Seednet. EPR \$4.00.

## KABULI TYPE

### ALMAZ<sup>Ⓛ</sup>

Seed size similar to PBA Monarch<sup>Ⓛ</sup> (8 to 9mm). Yield is lower than PBA Monarch<sup>Ⓛ</sup> and Genesis<sup>™</sup> 090. Best adapted to the traditional Kabuli growing areas. Almaz<sup>Ⓛ</sup> will require at least three fungicide applications to be successfully grown in Victorian growing conditions. Released 2005. Commercialised by Seednet. EPR \$6.50.

### GENESIS<sup>™</sup> 090

Genesis<sup>™</sup> 090 is a small seed (7 to 8mm) type Kabuli. Potential to be grown as an alternative to Desi chickpeas or higher yielding but potentially lower priced grain alternative to large seed type Kabuli varieties such as PBA Magnus<sup>Ⓛ</sup> and Genesis<sup>™</sup> Kalkee. Released 2005. Seed available from PB Seeds. EPR \$5.00.

### GENESIS<sup>™</sup> KALKEE

Genesis<sup>™</sup> Kalkee has mid-late flowering and late maturity with seed size larger than PBA Royal,<sup>Ⓛ</sup> PBA Monarch<sup>Ⓛ</sup> and Almaz<sup>Ⓛ</sup>, with a tall and erect plant habit. Released 2012. Seed available from PB Seeds. EPR \$5.00.

### PBA MAGNUS<sup>Ⓛ</sup>

The largest seeded Kabuli with similar plant type to Genesis<sup>™</sup> 090. Early-mid flowering and maturing. Adapted to current Kabuli growing regions of Victoria and South Australia. An excellent replacement for Genesis<sup>™</sup> Kalkee due to its larger seed size and where an erect plant type is not essential. Very good seed size and shape. Released 2020 (tested as CICA1352). Seed available from PB Seeds. EPR \$6.50.

### PBA MONARCH<sup>Ⓛ</sup>

Suited to shorter season, medium-rainfall environments due to improved adaptation through earlier flowering and maturity. Medium seed size, larger than Genesis<sup>™</sup> 090, similar to Almaz<sup>Ⓛ</sup>. Semi-spreading plant similar to PBA Slasher<sup>Ⓛ</sup>. Some susceptibility to lodging, particularly when biomass is high. Released 2013. Commercialised by Seednet. EPR \$6.50.

### PBA ROYAL<sup>Ⓛ</sup>

A medium-seeded Kabuli with a larger seed size than Genesis<sup>™</sup> 090 and higher yield than Genesis<sup>™</sup> 090 in medium-rainfall Victorian environments. Released 2019. Seed available from Seednet. EPR \$6.50.

**Table 1: Chickpea adaptability for Victorian rainfall zones.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	RAINFALL ZONE		
	Low <350mm	Med 350 to 500mm	High >500mm
DESI TYPE			
CBA Captain <sup>db</sup>	✓	✓	
PBA Maiden <sup>db</sup>		✓	
PBA Slasher <sup>db</sup>		✓	
PBA Striker <sup>db</sup>	✓	✓	
KABULI TYPE			
Almaz <sup>db</sup>		✓	✓
Genesis™ 090	✓	✓	
Genesis™ Kalkee		✓	✓
PBA Magnus <sup>db</sup>		✓	✓
PBA Monarch <sup>db</sup>		✓	✓
PBA Royal <sup>db</sup>		✓	✓

**Table 2: Agronomic characteristics of chickpea varieties.**

The agronomic characteristics in this table are provided as a guide only and have been compiled from observations of the breeder, agronomic research projects and seed companies.

Variety	Ave 100 seed weight (g)	Seed size group	Seed size (mm)	Vigour	Flowering	Maturity	Height	Lodging resistance
DESI TYPE								
CBA Captain <sup>db</sup>	20	medium	-	good	mid	mid	tall	MR
PBA Maiden <sup>db</sup>	24	med-large	-	mod	mid	mid	short-mid	MS
PBA Slasher <sup>db</sup>	18	medium	-	poor-mod	mid	mid	short-mid	MS
PBA Striker <sup>db</sup>	22	medium	-	good	early	early	short-mid	MS
KABULI TYPE								
Almaz <sup>db</sup>	38	medium	8-9	mod	mid-late	late	mid-tall	MR
Genesis™ 090	31	small	7-8	good	mid	mid	mid	MR
Genesis™ Kalkee	45	large	8-10	good	mid-late	late	tall	R
PBA Magnus <sup>db</sup>	47	large	8-10	poor-mod	early-mid	early-mid	mid	MS
PBA Monarch <sup>db</sup>	40	medium	8-9	poor-mod	early	early	mid	S
PBA Royal <sup>db</sup>	36	medium	8	mod	mid	mid	mid	MR

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible.  
 - denotes no rating available.

**Table 3: Disease resistance ratings of chickpea varieties.**

All chickpea varieties are rated as S or MS to foliar Ascochyta blight infection. Chickpea crops will require multiple fungicide applications to control Ascochyta blight in most seasons. All varieties are susceptible to pod infection and will require protection during podding to prevent seed staining and abortion.

Variety	Botrytis grey mould	Ascochyta blight* (foliar rating)	Phytophthora root rot* ( <i>P. medicaginis</i> )	Root lesion nematode ( <i>Pratylenchus</i> )	
				<i>P. thornei</i>	<i>P. neglectus</i>
DESI TYPE					
CBA Captain <sup>Ⓛ</sup>	S	MS	MSSp	MSp	MRp
PBA Maiden <sup>Ⓛ</sup>	S	S	VS	MRMS	MRMS
PBA Slasher <sup>Ⓛ</sup>	S	S	VS	MRMS	MRMS
PBA Striker <sup>Ⓛ</sup>	S	S	VS	MRMS	MRMS
KABULI TYPE					
Almaz <sup>Ⓛ</sup>	S	S	VS	S	MRMS
Genesis™ 090	S	MS	VS	MS	MRMS
Genesis™ Kalkee	S	S	VS	MS	MRMS
PBA Magnus <sup>Ⓛ</sup>	S	S	VS	MS	MR
PBA Monarch <sup>Ⓛ</sup>	S	S	VS	MS	MRMS
PBA Royal <sup>Ⓛ</sup>	S	MS	VS	MS	MR

Data Sources: [Agriculture Victoria Pulse Disease Guide \(2021\)](#); [NVT Disease ratings \(2021\)](#).

Note: subject to change with additional data. \* Ascochyta blight pathotype group 1 is more prevalent in Victoria and South Australia.

# Phytophthora root rot (*P. medicaginis*) ratings are breeder data, with the exception of CBA Captain<sup>Ⓛ</sup> from NVT.

p = provisional ratings – treat with caution. No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, MSS = moderately susceptible to susceptible, S = susceptible, VS = very susceptible.

Table 4: Chickpea diseases guide summary.

Disease	Organism	Symptoms	Occurrence	Host	Control
Ascochyta blight	<i>Phoma rabiei</i> (formerly known as <i>Ascochyta rabiei</i> )	Pale brown lesions on leaves, stems and pods. Lesions may have a grey centre containing small black fruiting bodies. Infected stems wither and break.	Occurs in all regions. Affects both Kabuli and Desi types. Most severe in spring.	Chickpea.	Fungicide seed dressing, foliar fungicides, rotation, avoid susceptible varieties, avoid early sowing.
Botrytis grey mould	<i>Botrytis cinerea</i>	Poor emergence and death of young plants. Soft rot at the base of the stem. Grey mould growth on leaves, stems and pods. Lodging of plants in dense crops. Discolouration of seed with grey mould.	Occurs in all regions. Affects both Kabuli and Desi types. Most severe in wet seasons. Dense crops are more likely to be affected.	Chickpea, most pulses, including lentil and faba bean.	Fungicide seed dressings, lower plant densities, avoid early sowing.
Sclerotinia	<i>Sclerotinia sclerotiorum</i>	Scattered dead plants within a crop. Cottony white fungal growth on the lower stems of dead plants. Soft rot and white mould on stems and pods.	Occurs in all chickpea growing regions. Most severe in wet seasons where chickpea is planted in fields recently cropped to chickpea.	Most pulses, oilseeds and broadleaf weeds.	Crop rotation. (Seed dressings of no benefit.)
Damping-off	<i>Pythium</i> spp.	Poor crop establishment under wet conditions. Seed rotting in the ground. Sudden death of young seedlings.	Problem in all regions, particularly in soils that become very wet just after sowing. More severe on Kabuli than Desi chickpea.	Chickpea, most pulses.	Fungicide seed dressings, avoid poorly drained soils.
Phytophthora	<i>Phytophthora megasperma</i>	Plants suddenly wither and die, particularly after waterlogging. Dark brown to black discolouration of the tap root.	Most serious disease in northern Australia. May be a problem in poorly drained soils in southern Australia under wet conditions.	Chickpea, lucerne.	Resistant varieties.
Phoma blight	<i>Phoma medicaginis</i> var. <i>pinodella</i>	Blackening of the stem near ground level. Dark, tan-coloured lesions on leaves, stems and pods.	Common in most chickpea growing regions. Most severe in wet seasons.	Most legumes.	Crop rotation.
Root lesion nematode	<i>Pratylenchus thornei</i> , <i>P. neglectus</i>	Ill thrift, lack of branching of root system, small dark stripes on roots.	Favoured by wheat in rotation with chickpea, medic and vetch.	Wheat, chickpea, medic, vetch, narbon bean.	Crop rotation (predictive soil test available).
VIRUS DISEASES					
AMV	Alfalfa mosaic virus	Tip necrosis.	Occurs in all chickpea growing areas.	Wide host range including most pulses, some horticultural plants and weeds.	Virus-free seed. Resistant varieties.
		The leaves and stems of Desi varieties become red/brown.	Seasons and districts with major aphid flights.		
		The leaves and stems of Kabuli varieties turn yellow.			
CMV	Cucumber mosaic virus	Yellowing, stunting, offshoots.	Prevalent in chickpea growing regions.	Very wide host range, including most pulses, pastures, horticultural crops and weeds.	Virus-free seed. Resistant varieties.
		The leaves and stems of Desi varieties become red/brown.	Seasons and districts with major aphid flights.		
		The leaves and stems of Kabuli varieties turn yellow.			
TuYV (previously BWYV)	Turnip yellows virus (previously Beet western yellows virus)	Yellowing, stunting, offshoots.	Occurs in all chickpea growing areas.	Very wide host range, including most pulses, brassicas and weeds.	Managing aphids and weeds, resistant varieties.
		The leaves and stems of Desi varieties become red/brown.	Seasons and districts with major aphid flights.		
		The leaves and stems of Kabuli varieties turn yellow.			

Data Source: [Identification and Management of Field Crop Diseases in Victoria](#) (2018). Reviewed by Joshua Fanning, Agriculture Victoria (2021).



**Table 5: Mallee and Wimmera (Desi) chickpea results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	MALLEE						WIMMERA					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		1.66	1.83	0.58	1.40	1.87		1.63	1.95	1.37	1.40	1.71
	No. trials	2	3	3	3	2	No. trials	3	3	2	3	2
CBA Captain <sup>Ⓛ</sup>	11	-	102	106	106	97	11	115	105	104	102	100
Genesis™ 090	7	85	102	100	87	-	7	118	110	-	96	-
Neelam <sup>Ⓛ</sup>	13	113	99	96	101	101	13	122	106	109	101	97
PBA Maiden <sup>Ⓛ</sup>	13	97	99	101	103	101	13	95	99	99	100	99
PBA Slasher <sup>Ⓛ</sup>	13	103	103	101	104	102	13	108	104	106	103	97
PBA Striker <sup>Ⓛ</sup>	13	106	102	101	108	105	13	85	94	99	104	106

Data Source: [National Variety Trials](#) (2016–2020).

- denotes no data available

**Table 6: Mallee and Wimmera (Kabuli) chickpea results. NVT long-term predicted yield expressed as a percentage of mean yield.**

Mean yield illustrated by colour gradient from lowest to highest, comparable on an annual basis.

	MALLEE						WIMMERA					
Year		2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Mean yield (t/ha)		1.52	1.44	0.48	1.42	1.86		1.49	1.75	1.40	1.27	1.75
	No. trials	2	2	2	2	2	No. trials	3	3	3	3	2
Almaz <sup>Ⓛ</sup>	10	95	100	87	95	94	13	113	102	98	92	97
Genesis™ 090	10	99	106	110	101	98	13	115	109	107	104	96
Genesis™ Kalkee	10	68	91	96	94	100	13	91	105	96	95	86
PBA Magnus <sup>Ⓛ</sup>	10	84	99	109	102	94	13	105	105	96	96	94
PBA Monarch <sup>Ⓛ</sup>	10	96	95	106	103	101	13	78	93	94	100	105
PBA Royal <sup>Ⓛ</sup>	10	101	106	99	99	95	13	124	108	105	98	96

Data Source: [National Variety Trials](#) (2016–2020).

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# VETCH

Vetch is a multi-purpose crop, grown mostly as a break crop, in rotation with cereals, in a wide range of soil types. Common vetch varieties are versatile, providing crop for grain production, early grazing as green pasture or for dry grazing, hay production or green and brown manure. Grain vetches are grown in lower to mid-rainfall cereal areas of southern Australia, with grain yields similar to pea yields in these areas. Vetch is valued for benefits to subsequent cereal and oil seed crops in the rotation. These benefits are usually greater than from other pulses, particularly in lower-rainfall areas. On sandy soils vetches provide better soil protection than peas and provide better stubble retention in the soil.

Grain from Morava®, Studenica®, Volga® and Timok® can be used without limit to feed all ruminants, and up to 20 per cent in the diet of pigs. These varieties possess less toxin in grain compared with Blanchefleur and Languedoc.

Forage vetches (purple vetch or woolly pod vetch) are used only for hay, green manure or mid to late winter feed for grazing and grow successfully in areas of 400 to 650mm of annual-rainfall.

Vetch grain is not suitable for human consumption, and grain from woolly pod vetch varieties cannot be used to feed livestock.

## NEW VARIETIES

There are now new varieties for 2022.

## DISEASE UPDATE

Resistance ratings are an extremely important part of integrated disease management. In 2020, Agriculture Victoria conducted the first disease screening for two key vetch diseases (botrytis grey mould and ascochyta blight) in many years. The vetch resistance ratings were updated based on these screening results. Vetch is not part of the NVT ratings process, but the same approach was used

in the vetch ratings as is used for NVT ratings in other pulse crops.

A successful integrated disease management plan will include paddock rotation, good agronomy, selecting a more resistant varieties, seed treatments, in-crop monitoring, fungicide applications and rotation of fungicide actives. The other important factor is the end use of a vetch crop (grain, hay, feed, manure etc.) and it is important to factor this in when assessing the cost of disease management strategies.

RM4 woolly pod variety is susceptible in early growth stages to redlegged earth mite and lucerne flea, like all other vetch varieties. RM4 is also susceptible to blue green and cowpea aphids from early growth through to pod maturity, as well as to native budworm during pod formation and filling, as are the other common vetch varieties.

## HERBICIDE TOLERANCE

### COMMON VETCH

No differences between common vetch varieties to registered herbicides to control broadleaf weeds. No differences between varieties to registered herbicides for grass weed control.

### PURPLE VETCH

Flumetsulam herbicides can be used to control some broadleaf weeds in Popany. All herbicides registered for use on crops must be used according to the label.

### WOOLLY POD VETCH

As this species is a poor competitor with weeds early in the season, care should be taken with paddock selection and herbicide choices. There is little difference in variety tolerances to registered herbicides.

## MORE INFORMATION

[grdc.com.au](http://grdc.com.au)

■ [Vetch Southern region – GRDC GrowNotes™](#)

[agriculture.vic.gov.au](http://agriculture.vic.gov.au)

■ [Agriculture Victoria Pulse Disease Guide](#)

[extensionaus.com.au/FieldCropDiseasesVic](http://extensionaus.com.au/FieldCropDiseasesVic)

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## VARIETY DESCRIPTIONS

Varieties have been listed according to type and in alphabetical order, not in order of preference. The agronomic characteristics in these descriptions are provided as a guide only and have been compiled from observations of breeders, agronomic research projects and/or seed companies.

When selecting a variety, growers are encouraged to consider their individual farm and paddock situation along with marketing requirements and access to markets. In addition to data supplied below, growers should seek locally relevant agronomy results published through Online Farm Trials, GRDC updates and various grower group publications.

(<sup>1</sup>) denotes Plant Breeder's Rights apply.

## COMMON VETCH (*VICIA SATIVA*)

### LANGUEDOC

Languedoc is an early flowering and maturing variety recommended for low (<350mm) rainfall areas. Susceptible to lodging, harvest can be difficult under certain conditions. Languedoc generally exceeds Blanchefleur's grain yield in areas with less than 350mm rainfall. Its hard seed content is generally around 5 to 10 per cent. Highly susceptible to rust. Languedoc grains possess 1.0 to 1.6 per cent of anti-nutritional level (BCN). Languedoc is an old variety; seed sources may be hard to find and rely on farmer-to-farmer trading. Where possible newer disease-resistant varieties should be grown. No EPR.

### BLANCHEFLEUR

Blanchefleur is a mid-maturing variety, with white flowers and reddish brown/mottled seed with orange cotyledons. Very susceptible to rust. Blanchefleur is well suited to above 350mm rainfall areas, where rust is not a regular problem. Export market opportunities of orange cotyledon varieties like Blanchefleur are limited to small bird seed markets in Europe, and seed for grazing and green

manure crops only. Blanchefleur grains possess 0.9 to 1.6 per cent of anti-nutritional level (BCN). Blanchefleur is an old variety; seed sources may be hard to find and rely on farmer-to-farmer trading. Where possible newer disease-resistant varieties should be grown. No EPR.

### MORAVA®

Morava® is a rust-resistant, late-flowering vetch variety with 100 per cent soft seeds. Grain yield is superior to other vetches in the high-rainfall (>420mm) areas, and to Blanchefleur and Languedoc in all other areas in the presence of rust. It has large seed and is more resistant to shattering than other vetch varieties. Morava® produces higher herbage yields than all other common vetch varieties. It is later flowering and maturing than Blanchefleur and grain yield will be reduced in environments with dry finishes. Anti-nutritional level (BCN) levels of Morava® are 0.65 per cent. Seed available from Barenbrug. No EPR.

### RASINA®<sup>(1)</sup>

Rasina® is soft-seeded vetch and replaces Languedoc and Blanchefleur in low to medium-rainfall areas for grain production. Resistant to rust, but moderately susceptible to ascochyta blight and susceptible to botrytis grey mould. Not expected to replace Morava® in higher-rainfall districts or for hay production. Rasina® has a dark brown speckled seed coat with dark beige cotyledons. The level of anti-nutritional factors is 0.6 to 0.8 per cent. No EPR.

### STUDENICA®<sup>(1)</sup>

Studenica® is a very early flowering and maturing variety (flowering between 85 to 90 days) with white flowers. Anti-nutritional level (BCN) levels are similar to Morava®. It has the best winter growth and vigour of all common vetch varieties and is more tolerant to frost than other varieties. It is targeted at mixed farmers in low-rainfall areas (<350mm) looking to fill the winter feed gap or late planting for spring fodder and hay. Its strength is its winter growth, where it puts on significantly more bulk/dry matter prior to September than other varieties. Grain yields for Studenica® are comparable to other varieties, in most areas, winter growth and ability to produce early fodder/grazing which sets it apart. Winter growth/vigour of Studenica® was assessed in August at two low-rainfall sites in Victoria and South Australia during 2018. Studenica® produced a minimum of 0.8 tonnes of dry matter over other common vetch varieties. This variety is expected to completely replace Languedoc in rotations. Seed available from S&W Seed Company. No EPR.

**TIMOK®<sup>(1)</sup>**

Timok® is a multipurpose vetch variety, suitable for grain/seed and hay/silage production in medium to high-rainfall (>380mm) areas. It is high yielding common vetch variety. Good early establishment and a soft-seeded variety. Timok® is targeted at medium to high-rainfall regions but will still perform for grain production in low-rainfall environments. Toxin levels in the grain are around 0.57 per cent. Seed available from S&W Seed Co. No EPR.

**VOLGA®<sup>(1)</sup>**

Volga® is high-yielding grain/seed variety for low and mid-rainfall areas. Particularly suited to shorter season areas. Earlier flowering and maturing than Blanchefleur which results in earlier nodule development. Early maturity may limit yield potential relative to longer growing season varieties in high-rainfall areas. Volga® has high grain and herbage yields. Well suited to situations where the season finishes sharply. Suitable in many soil types; with pH 5.8 to 9.4. Moderately susceptible to ascochyta blight. Toxin levels are around 0.54 per cent. Volga® seed size is very similar to Morava® seeds. Seed available from Barenbrug. No EPR.

## PURPLE VETCH (VICIA BENGHALENSIS)

**NEW – BENATAS™**

Benatas™ is a cool season, soft-seeded purple vetch variety, an alternative to Popany in longer growing regions. Tolerant of moderate waterlogging, it is suitable for rainfall areas between 350 to 800mm. Suitable for pasture, hay/silage and green manure crop. Bred by Tasglobal Seeds and marketed by Stephen Pasture Seeds. No EPR.

**POPANY**

Popany is a late maturing variety. Suitable for mid to high-rainfall (>400mm) areas for hay/silage. Grain yield is significantly lower than yields from common vetch varieties, along with a smaller seed size and seeding rates should be lowered accordingly. Grain from this variety can be used as a bird feed mix with other recommended grains. Seed coat is black with distinctive white hilum. Popany has the best tolerance of all vetches to waterlogging. No EPR.

## WOOLLY POD VETCHES (VICIA VILLOSA SSP.)

*Note: Grain from woolly pod vetches cannot be used to feed livestock.*

**CAPELLO®**

Lower in grain yield compared with common vetches, but higher in dry matter production in rainfall areas greater than 450mm. Grazing from 10-node stage to podding only. Not recommended for grazing earlier than this and once plants begin to develop seeds in pods. Not suitable for hay/silage in areas receiving less than 400mm of rainfall annually. Capello® is a selected soft-seed variety from Namoi but has been prone to dormant seeds. Seed available from Barenbrug. No EPR.

**HAYMAYKER PLUS®**

Lower in grain yield compared to common vetch varieties, but higher in dry matter production in high-rainfall areas. Grazing from 10-node stage to podding only. Soft-seeded variety, however prone to dormant seeds. Seed available from Barenbrug. No EPR.

**RM4®<sup>(1)</sup>**

A multipurpose variety, used for hay/silage, grazing, green/brown manure or for seed. Suitable for a range of soil types. RM4® produces high levels of dry matter with good early establishment. Considered a soft-seed variety although a small percentage may be dormant. Early maturing. Significantly higher in dry matter production in rainfall areas of less than 400mm, but suitable for rainfall areas of 400 to 600mm. Performs better for grain production in sharp-finishing seasons compared to other woolly pod varieties. Seed available from Barenbrug. No EPR.

**Table 1. Vetch adaptability for Victorian rainfall zones.**

Vetch varieties listed by end usage. The characteristics in this table are provided as a guide only and have been compiled from data from South Australian Crop Sowing Guide (2020), observations of the breeder, agronomic research projects and seed companies.

Variety	Rainfall zone				
	<350mm	350 to 400mm	400 to 450mm	450 to 600mm	>600mm
<b>GRAIN</b>					
Blanchefleur		✓	✓		
Morava®		✓	✓	✓	✓
Rasina® <sup>ⓓ</sup>	✓	✓	✓	✓	
Studenica® <sup>ⓓ</sup>	✓	✓	✓		
Timok® <sup>ⓓ</sup>	✓	✓	✓	✓	✓
Volga® <sup>ⓓ</sup>	✓	✓	✓		
<b>HAY/SILAGE/GRAZING AND GREEN MANURE</b>					
Benatas™		✓	✓	✓	✓
Blanchefleur	✓	✓			
Capello®			✓	✓	✓
Haymaker®			✓	✓	✓
Morava®	✓	✓	✓	✓	✓
Popany		✓	✓	✓	✓
Rasina® <sup>ⓓ</sup>	✓	✓			
RM4® <sup>ⓓ</sup>	✓	✓	✓	✓	✓
Studenica® <sup>ⓓ</sup>	✓	✓	✓		
Timok® <sup>ⓓ</sup>	✓	✓	✓	✓	✓
Volga® <sup>ⓓ</sup>	✓	✓	✓		

Data Source: Stuart Nagel, South Australian Research and Development Institute (Reviewed 2021).

**Table 2: Agronomic characteristics and disease ratings<sup>#</sup> of vetch varieties.**

Variety	Maturity	Yield potential	Dry matter	Flower colour	% of pod shattering	% of hard seeds	Rust*	Ascochyta blight	Botrytis grey mould
<b>COMMON VETCH VARIETIES</b>									
Blanchefleur	mid	high	mod	white	5-10	5-10	VS	MS	S
Morava®	late	high	high	purple	0	0	R	MSp	VSp
Rasina® <sup>ⓓ</sup>	early-mid	high	mod	purple	0-2	0	R	Sp	Sp
Studenica® <sup>ⓓ</sup>	very early	high	high	white	0-2	0	R	MRp	Sp
Timok® <sup>ⓓ</sup>	mid	high	very high	purple	0-2	0-2	R	Sp	Sp
Volga® <sup>ⓓ</sup>	early	very high	high	purple	0-2	2-5	R	MRMSp	Sp
<b>PURPLE VETCH VARIETIES</b>									
Benatas™	late	low	very high	purple	low	low	-	Sp	MRMSp
Popany	very late	low	high	purple	20-30	5-10	R	MRp	Sp
<b>WOOLLY POD VETCH VARIETIES</b>									
Haymaker Plus®	late	low	very high	purple	5-10	20-30	R	S	VS
Capello®	late	low	very high	purple	5-10	15-20	R	MRp	Sp
RM4® <sup>ⓓ</sup>	mid	mod	very high	purple	2-5	2-5	R	MRp	Sp

Data Source: Stuart Nagel, South Australian Research and Development Institute (2021), Agriculture Victoria Pulse Disease Guide (2021).

<sup>#</sup> = Vetch is not included in the NVT, ascochyta and botrytis grey mould ratings are from Agriculture Victoria. \* Ratings from breeder.

p = provisional ratings – treat with caution. R = resistant, RMR = resistant to moderately resistant, MR = moderately resistant, MRMS = moderately resistant to moderately susceptible, MS = moderately susceptible, S = susceptible, VS = very susceptible.

- denotes no rating available.

No variety with an R resistance rating is immune to disease, and a fungicide application may be required under severe disease pressure.

**Table 3. Grain and dry matter yield for vetch varieties.**

This table has been compiled from independent trials with a five-year average over five different trial sites in South Australia.

Variety	Grain yield (t/ha)	% of Blanchefleur	Dry matter yield (t/ha)	% of Morava®	Dry matter (t/ha)	% of Capello®
COMMON VETCH						
Blanchefleur	1.82	100	-	-	-	-
Morava®	1.84	102	4.94	100	-	-
Timok® <sup>1</sup>	2.18	120	5.20	105	-	-
Volga® <sup>1</sup>	2.44	134	5.39	109	-	-
Mean yield	2.07	-	5.06	-	-	-
WOOLLY POD VETCH						
Capello®	-	-	-	-	6.23	100
Haymaker Plus®	-	-	-	-	6.26 (2009-12)	100.4
RM4® <sup>1</sup>	-	-	-	-	6.71	107.7
Mean yield	-	-	-	-	6.40	-
PURPLE VETCH						
Popany	-	-	-	-	5.28 (2009-12)	84.75

Data Source: Stuart Nagel, South Australian Research and Development Institute (Reviewed 2021).

- denotes no data available

**Table 4. Hay yields of common vetch varieties from low-rainfall cropping environments.**

Data compiled from independent trials over three years at four different sites in South Australia.

Variety	2014	2015	2016	3yr Ave
HAY YIELD (t/ha)				
Studenica® <sup>1</sup>	2.24	3.09	2.19	2.51
Rasina® <sup>1</sup>	-	2.86	2.21	2.54
Timok® <sup>1</sup>	2.13	3.15	2.08	2.45
Volga® <sup>1</sup>	2.26	3.06	2.45	2.59

Data Source: Stuart Nagel, South Australian Research and Development Institute (Reviewed 2021).

- denotes no data available

**Table 5. Plant density and recommended seeding rates for vetch.**

End use	Common vetch		Woolly pod vetch		Purple vetch	
	Plant density (plants per sq.m.)	Sowing rate (kg/ha)	Plant density (plants per sq.m.)	Sowing rate (kg/ha)	Plant density (plants per sq.m.)	Sowing rate (kg/ha)
Grain	40-60	40-50	40-50	25-40	40-50	25-40
Hay/silage	50-70	50-60	50-60	30-45	50-60	30-45
Grazing	50-70	50-60	50-60	30-45	50-60	30-45
Green manure	60-70	55-65	60-70	45-50	50-60	30-45

Data Source: Stuart Nagel, South Australian Research and Development Institute (Reviewed 2021).

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# NOTES

[illegible]



	INTRO
	WHEAT
	BARLEY
	OAT
	TRITICALE
	CANOLA
	FIELD PEA
	LENTIL
	FABA BEAN
	LUPIN
	CHICKPEA
	VETCH
	NOTES

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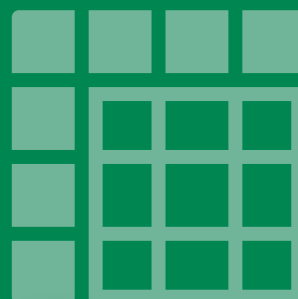
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