

GERMPLASM evaluation network

your trusted research partner for germplasm evaluation



March 2023 – Protocol
(version 1 – 1st March 2023)

SOWING THE SEED FOR A BRIGHTER FUTURE

An Industry Innovations (II) 2025 initiative

Developing higher yielding crops through germplasm technology advances

FAR Australia has been working with breeders to bring new products to the Australian Grains industry since its inception in 2012. It is a trusted development partner for many breeders, assisting with bringing in new germplasm to the marketplace, whilst ensuring the correct management to fulfil the genetic yield potential.

Industry Collaborations

FAR Australia is partnering with industry to independently showcase **germplasm** performance in a series of high productivity **evaluation** trials across the country as part of its Industry Innovations (II) 2025 initiative.

WHAT IS PROPOSED?

FAR Australia ran an extremely successful germplasm evaluation network (GEN) pilot program in 2022 across an established series of trial sites in order to test different germplasm in wheat and barley. The five Crop Technology Centres that test GEN are located in Frankland River WA, Millicent SA, Gnarwarre Vic, Wallendbeen NSW and Hagley Tas.

Once again, the 2023 programme will focus on genetic yield potential and disease resistance. The trials, in wheat and barley, will be managed ‘plus and minus’ fungicide using FAR Australia’s expertise in disease management.

All trial results will be reported to the breeders within 21 days of harvest. FAR Australia will report results of all trials to the wider industry after all breeders have been informed of their results.

This independent initiative delivers a coordinated and independent network of high productivity trials in wheat and barley. The trials will be managed ‘plus and minus’ fungicide with control varieties provided by FAR Australia.

The breeders and FAR Australia will jointly own the results produced. Pre commercialisation breeding lines can be identified by the breeders or a FAR Australia code.

OVERALL OBJECTIVE

To develop independent research results on profitable germplasm developments in wheat and barley, using specific research strategies designed by FAR for the High Rainfall Zones (HRZs) of Australia.

Seed requirements

Entry requirements are a minimum of **one cultivar for a minimum of three centres**. At each centre there will be a need for eight packets of each line for wheat and barley (4 reps untreated and 4 reps fungicide treated). All plots established at 180 seeds/m² unless otherwise stated (excluding WA to be sown at 200 seeds/m²). For later times of sowing in May, seed rates will be increased to 225 seeds/m². A seed request form is attached and can be emailed back.

Minimum dataset:

- Grain yield and quality receival standards, disease scores; other agronomic traits such as lodging will also be measured if appropriate.
- Entries will be compared to two national controls per site:
 - All barley site controls: RGT Planet and Rosalind.
 - Wheat: Scepter and Rockstar (May Sown), RGT Accroc and Illabo (April Sow).
- Each cultivar will be sign-posted with experimental name and your organisation's logo (or kept anonymous if desired).



SITE DETAILS AND PROPOSED SOWING DATES

Wheat and barley trials unless otherwise stated

Site	Target sow date
Frankland River (Albany Port Zone), WA	TOS 1 April 15-25 and/or TOS 2 May 10-15
Millicent, SA	TOS 1 May 5-10 (one sow date)
Gnarwarre, Vic	TOS 1 April 25-30 and/or TOS 2 May 15-25
Hagley, Tas (wheat only) Spring sown barley	April 25-May 5 (one sow date) August 25-September 10 (one sow date)
Wallendbeen, NSW (wheat only)	April 15-25 (one sow date)

COSTS

A minimum of one cultivar of wheat/barley across three sites totalling \$990 plus GST per entry; additional site entries of the same cultivar will cost \$350 plus GST

Should you wish to invest in entries into FAR Australia's Germplasm Evaluation Network, please contact Rachel Hamilton on 0428 843 456 or email rachel.hamilton@faraustralia.com.au



SEED REQUEST FORM - Seed quantities and addresses for dispatch

Seed quantities and addresses for dispatch are outlined below. Please enter in a minimum of three locations for wheat and barley per cultivar and return via email template (see example below), 1.8kg is required per site. There is no limit on entries at this stage.

Barley Germplasm evaluation series: minimum of 3 crop technology centre (CTC) sites

CULTIVAR ENTRY NAME (or coded name)	Breeding Company disclosed on signage (Y/N)	Breeding Company or Industry Partner name	MTA to be sent to FAR Australia (Y/N)	1000 GW (if known)	Germ % (if known)	Vic CTC (kg)		WA CTC (kg)		SA CTC (kg)	TAS CTC (kg)	Total Seed (kg)
						TOS 1	TOS 2	TOS 1	TOS 2			
Wheat_1	Y	BreederX	Y	45	95	1.8	1.8	1.8	1.8	1.8	1.8	5.4kg

Wheat Germplasm evaluation series: nominate a minimum of 3 crop technology centre (CTC) sites

CULTIVAR ENTRY NAME (or coded name)	Breeding Company disclosed on signage (Y/N)	Breeding Company or Industry Partner name	MTA to be sent to FAR Australia (Y/N)	1000 GW (if known)	Germ % (if known)	Vic CTC (kg)		WA CTC (kg)		SA CTC (kg)	NSW CTC (kg)	TAS CTC (kg)	Total Seed (kg)
						TOS 1	TOS 2	TOS 1	TOS 2				
Wheat_1	Y	BreederX	Y	45	95	1.8	1.8	1.8	1.8	1.8	1.8	1.8	5.4kg

Addresses for dispatch

<u>WA</u>	<u>SA/VIC</u>	<u>Tasmania</u>	<u>NSW</u>
Jayme Burkett FAR Australia 9 Currong Street Esperance, WA 6450	Aaron Vague FAR Australia Shed 2/ 63 Holder Road Bannockburn, VIC 3331	Darcy Warren FAR Australia Shed 2/ 63 Holder Road Bannockburn, VIC 3331	Ben Morris FAR Australia 12/ 95-103 Melbourne Street Mulwala, NSW 2647

Plot sizes:

VIC, SA, NSW, WA - 12m plots x 1.575m (outside row to outside row) – 22.5cm row spacing

TAS - 15m plots x 1.4m (outside row to outside row) – 20cm row spacing

Treatment structure: 8 plots per site (4 replicates of untreated and 4 replicates of fungicide treated) all managed for high yield potential, adequate nutrition and lodging control.



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