

7. South East Barley National Variety Trials

SARDI New Variety Agronomy Team

Two NVT barley trials were sown in the South East (SE) region of South Australia (SA) in 2018. The Keith trial was sown on the 16th May and the Bordertown trial site was sown on the 6th June. Long term yield performance (2014 – 2018) from the trial sites are shown in Tables 1 and 2. Both sites experienced frost conditions and extreme heat conditions throughout the flowering period. Interpret results with caution.

Full NVT data including individual site yields and grain quality can be accessed online at www.nvtonline.com.au. All NVT data shown is sourced from this site and varietal information is sourced from the 2019 SARDI sowing guide (<https://grdc.com.au/resources-and-publications/all-publications/publications/2019/south-australian-crop-sowing-guide>).

General Comments around SE NVT Trial Results in 2018

Since publication of the 2018 sowing guide, Banks has been released and Spartacus CL and Compass are now accredited Malting varieties. Feed variety Maritime, malt variety Buloke, niche malt varieties Southern Star and Charger have been excluded as they are generally considered outclassed. The decision to grow either a malting, food or feed variety may depend on one or more factors, including:

- Market demand and malting varietal storage segregations in bulk storage facilities
- The difference in payments between malting and feed grades compared to yield differences
- The likelihood of producing a malting grade barley within malt receival specifications;
- Disease resistance and agronomic considerations

Data and guidance on the most suitable barley varieties for sowing in South Australia in 2019 can be found in the 2019 SARDI sowing guide (<https://grdc.com.au/resources-and-publications/all-publications/publications/2019/south-australian-crop-sowing-guide>).

Net form net blotch remains a significant disease threat to barley production across South Australia and growers should refrain from growing barley on barley or planting highly susceptible varieties unless a vigilant fungicide strategy is planned. Newer releases Spartacus CL+ and RGT Planet are also highly susceptible to spot form net blotch and will need an appropriate fungicide strategy.

Cereal cyst nematode levels should be carefully monitored where there is a history of growing susceptible varieties such as Schooner, Scope, Buloke, Oxford and Gairdner. Seed dressings which have activity on powdery mildew should be applied to all varieties susceptible to powdery mildew. Hindmarsh, Latrobe, Spartacus CL+ and Rosalind are more susceptible to loose smut than other varieties and an appropriate seed smuticide in addition to foliar control of powdery mildew should be considered.

The full SARDI cereal disease guide should always be consulted when selecting varieties and can be found at: http://pir.sa.gov.au/research/services/reports_and_newsletters/crop_performance

The South East NVT long term yield performance for the barley trial at Keith is shown in Table 1 and for Barley in Table 2. Varieties are listed in alphabetical order.

Table 1: NVT Keith barley variety trial long term (2014 – 2018) yield performance.
Accessed on line at <https://app.nvtonline.com.au/>.

Variety	Mean Yield t/ha	2014	2015	2016	2017	2018
		2.86	1.92	6.13	4.41	4.54
	# Trials	1	1	1	1	1
Alestar	1	-	-	-	-	100
Banks	4	-	111	102	104	105
Bass	5	97	93	99	95	96
Biere	2	-	108	82	-	-
Bottler	3	-	-	106	101	99
Buff	1	-	-	-	-	102
Capstan	5	89	80	112	98	96
Commander	5	97	100	102	102	100
Compass	5	119	129	93	101	107
Explorer	5	103	99	102	102	101
Fairview	2	-	-	-	95	92
Fathom	5	106	110	105	98	101
Flagship	1	99	-	-	-	-
Fleet	4	98	101	-	97	98
Flinders	5	98	95	94	97	97
Gairdner	4	91	86	89	90	-
Granger	5	98	94	99	100	99
Hindmarsh	5	116	125	93	102	106
Keel	4	109	114	-	96	101
La Trobe	5	114	121	96	102	105
Macquarie	2	84	77	-	-	-
Maltstar	1	-	-	-	-	98
Navigator	5	80	71	107	95	91
Oxford	5	87	77	106	101	96
RGT Planet	3	-	-	116	106	105
Rosalind	5	118	123	103	106	109
Schooner	3	95	97	-	91	-
Scope	5	99	100	95	97	98
Spartacus CL	5	117	128	93	104	108
SY Rattler	3	101	98	88	-	-
Topstart	5	89	81	106	103	98
Westminster	5	84	74	99	95	92
Wimmera	2	89	83	-	-	-

- not sown

Table 2: NVT Bordertown barley variety trial long term (2014 – 2018) yield performance.
Accessed on line at <https://app.nvtonline.com.au/>.

Variety	Mean Yield t/ha # Trials	2014	2015	2016	2017	2018
		3.23	1.33	6.12	6.19	6.10
		1	1	1	1	1
Alestar	1	-	-	-	-	101
Banks	4	-	116	104	104	103
Bass	5	100	101	96	98	98
Biere	2	-	129	85	-	-
Bottler	3	-	-	108	105	103
Buff	1	-	-	-	-	102
Capstan	5	97	75	107	103	103
Commander	5	104	92	99	97	101
Compass	5	114	153	93	99	99
Explorer	5	94	102	108	108	103
Fairview	5	88	60	102	99	98
Fathom	5	116	129	97	98	101
Flagship	1	101	-	-	-	-
Fleet	5	113	109	93	93	99
Flinders	5	94	96	96	98	96
Gairdner	4	94	89	87	90	-
Granger	5	92	90	103	103	100
Hindmarsh	5	109	143	95	100	99
Keel	4	113	135	-	95	97
La Trobe	5	110	137	96	100	100
Macquarie	2	99	76	-	-	-
Maltstar	1	-	-	-	-	103
Navigator	5	95	53	100	94	99
Oxford	5	84	56	109	104	102
RGT Planet	3	--	-	119	115	110
Rosalind	5	108	141	108	110	106
Schooner	2	105	104	-	-	-
Scope	5	101	103	94	95	97
Spartacus CL	5	109	142	97	101	100
SY Rattler	3	86	94	98	-	-
Topstart	5	83	58	112	107	104
Westminster	5	86	58	99	97	97
Wimmera	2	94	79	-	-	-

- not sown

Alestar is a variety currently undergoing malt accreditation, with a similar maturity to Commander, and is targeted for the medium to high rainfall regions of SA. Alestar has demonstrated a yield improvement compared to Westminster. More evaluation is required for its adaptation to SA. Seed is available through Elders and through selected seed partners (EPR \$3.00/t GST ex).

Banks is a mid-late maturing barley currently undergoing malting accreditation. Banks has been developed by Intergrain and targeted for the medium to high rainfall environments. Banks is rated R-MRMS to net form net blotch resistance and is moderately susceptible to spot form net blotch. Its long term yield performance has been 4 – 7% above Commander in most SA districts. Seed is available for planting in 2019 from Intergrain Seedclub members and resellers (EPR \$4.00/t GST ex).

Compass has been developed by the University of Adelaide as an early – mid season maturing accredited malting quality variety. It is closely related to Commander but is higher yielding. It has a similar growth habit to Commander but is earlier flowering with typical May sowing and improved net form net blotch resistance. Compass has similar straw strength to Commander and will be prone to lodging in high yielding environments. Compass is now susceptible (SVS) to a new strain of leaf rust in SA. Compass has shown good physical grain quality with high retention and low screenings and low-moderate test weight. Seed is available from Seednet (EPR \$3.80/t GST ex).

Flinders is a malting accredited variety developed by Intergrain. Segregation and marketing opportunities for malting are currently limited in SA. It is a mid – late maturing variety with variable resistance to leaf rust and is susceptible to spot form net blotch, scald, and CCN. Flinders is approved for farmer to farmer trading and seed is available through Intergrain Seedclub members (EPR \$3.80/t GST ex).

GrangeR is a high yielding variety accredited for malting in 2013. It is mid maturing and targeted for areas with more than 400mm rainfall. GrangeR has good levels of resistance to powdery mildew and is rated MR – MSS for net form net blotch, variable resistance to leaf rust and leaf scald and susceptibility to spot form net blotch. Segregation and marketing opportunities for malting are currently limited in SA. Seed is available from Heritage Seeds (EPR \$/t GST ex).

La Trobe is a malting accredited variety released from Intergrain in 2014 with early maturity and semi dwarf growth habit and plant architecture very similar to Hindmarsh. Its yield and agronomic performance in SA NVT since 2013 has also been very similar to Hindmarsh with slightly higher yield. La Trobe is resistant to CCN but susceptible to spot form net blotch, rated MR-MS to net form net blotch and shows variable resistance to leaf rust and leaf scald. La Trobe seed is approved for farmer to farmer trading and seed is available through Intergrain

RGT Planet is a direct introduction from Europe bred by RAGT seeds. RGT Planet is currently undergoing malt evaluation in Australia. RGT Planet is a mid-season flowering variety similar to Commander or slightly earlier from May sowing dates. RGT Planet was included in NVT SA for the first time in 2016 and was the highest yielding variety across the state for that season. RGT Planet has shown the highest potential yield compared to other currently available barley varieties particularly in the medium to high rainfall zones. RGT Planet is susceptible to spot and net form net blotch. Quality data suggests RGT Planet has a lower test weight than Commander and has a greater tendency for small grain screening under sub optimal grain fill conditions. Seed is available via Seed Force broadacre commercial partners (EPR \$4.00/t GST ex).

Rosalind is a feed quality variety released by Intergrain in 2015. It has been evaluated in SA NVT since 2014 and has demonstrated broad adaptation to low yielding environments and very high relative yields in high rainfall environments. Rosalind has a Hindmarsh plant type and is slightly faster to develop than Hindmarsh when sown in May. Rosalind has excellent straw strength and standability. Rosalind has resistance to CCN, net form net blotch, leaf rust, and variable resistance to powdery mildew and leaf scald but susceptibility to spot form net blotch. Rosalind seed is approved for farmer to farmer trading and seed is available through Intergrain Seedclub members (EPR \$3.50/t GST ex).

Spartacus CL+ is a malting accredited imidazolinone tolerant barley developed by Intergrain and released in 2016 with a similar plant type and flowering behaviour to Hindmarsh and LaTrobe. Within SA NVT during 2014 - 2017, Spartacus CL has also exhibited similar agronomic performance for grain yield and disease resistance profile including resistance to CCN and susceptibility to loose smut. Yields have averaged similar to Compass across most districts and slightly higher in higher yielding districts. Spartacus CL has consistently averaged more than 15% above the widely grown imidazolinone tolerant Scope CL and has improved grainsize. Seed is available for sowing from local resellers and Intergrain Seedclub members (EPR \$4.25/t GST ex).

Westminster is a mid – late maturing variety with medium – tall, stiff straw. Malting accreditation was completed in March 2013. Westminster has now shows variable resistance to net form net blotch and leaf scald, has good resistance to black point but is susceptible to spot form net blotch. Westminster is well suited to the SE of SA and higher rainfall environments. Contact GrainSearch for details on obtaining seed for 2019 (EPR \$3.00/t GST ex).

Note: End Point Royalties (EPR's) payable for 2019-20 are quoted from 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.

