

Cyclops[®]



- The highest yielding barley variety available
- Quick-mid maturity, slightly slower than Spartacus CL[Ⓢ]
- Wide adaptation to a range of environments and seasonal conditions
- Erect growing Hindmarsh[Ⓢ] plant type
- Less susceptible to lodging than taller varieties such as Compass[Ⓢ]
- Competitive physical grain quality package
- Has entered the Barley Australia malt accreditation program but is currently deliverable as Barley/Feed

Breeder's comments

Cyclops^ϕ (tested as AGTB0200) has demonstrated exceptional performance across a broad range of regions and seasonal conditions, and has emerged as the clear market leader for barley varieties. Cyclops^ϕ has become the new yield benchmark across the majority of South Eastern Australian regions.

Cyclops^ϕ has a quick-mid maturity, reaching awn peep slightly later than Spartacus CL^ϕ. The short plant type of Cyclops^ϕ is similar to Latrobe^ϕ, Spartacus CL^ϕ and Rosalind^ϕ resulting in reduced susceptibility to lodging compared with taller barley varieties. Head loss is similar to Latrobe^ϕ or Spartacus CL^ϕ, meaning that Cyclops^ϕ is less vulnerable to yield loss during windy conditions around harvest compared with some other varieties.

The physical grain quality and disease resistance package of Cyclops^ϕ is comparable with most other barley varieties currently on the market.

Cyclops^ϕ has been accepted into the Barley Australia malt accreditation program, with stage 1 malt evaluation commencing in 2021. Cyclops^ϕ is deliverable into the Barley/Feed grade.

Seed availability

Commercial quantities of Cyclops^ϕ may be available through AGT Affiliates, or your local retailer. Please consult the AGT website for AGT Affiliate contact details. Cyclops^ϕ is able to be traded between growers upon the completion of a License Agreement as part of AGT's Seed Sharing™ initiative.

PBR and EPR

Cyclops^ϕ is protected by Plant Breeders Rights (PBR) (denoted by the ^ϕ symbol) and all production (except seed saved for planting) is liable to an End Point Royalty (EPR), which funds future plant breeding. Cyclops^ϕ growers will be subject to a Growers License Agreement that acknowledges that an EPR of \$4/tonne + GST has to be paid on all production other than seed saved for planting.

Grain yield

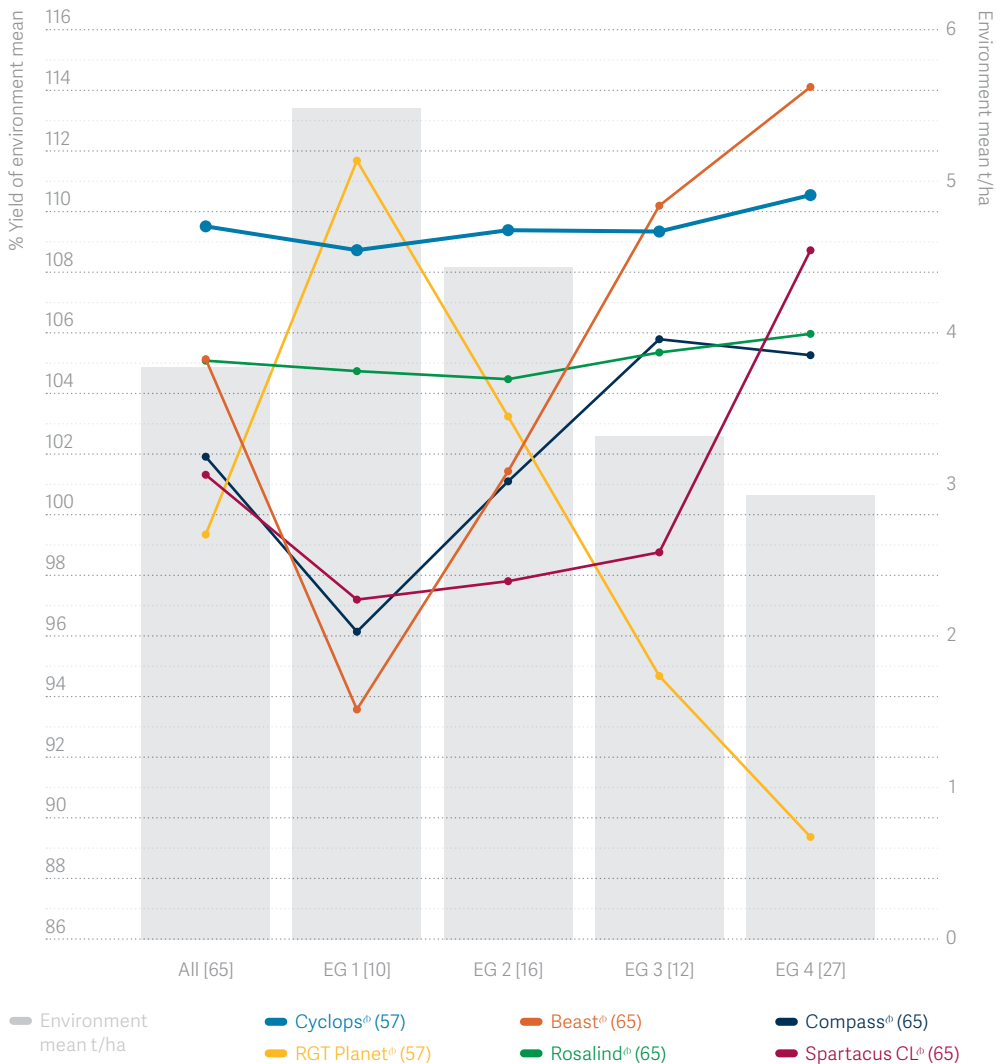
Cyclops[®] has demonstrated an elite level of grain yield combined with wide adaptation to a range of environments and seasonal conditions (Figures 1 and 2). Long-term AGT and NVT data shows that Cyclops[®] has a yield leap over Spartacus CL[®] and Rosalind[®], and improved yield performance relative to RGT Planet[®].

Over four years of testing in AGT trials Cyclops[®] has shown exceptional yield stability, consistently producing high yields across a range of conditions from high yield potential to drier, more stressed conditions.

Three years of head-to-head AGT observations across SA, Vic and southern NSW showed that Cyclops[®] out-yielded Spartacus CL[®] in 26 out of 30 trials (9% yield), and beat Rosalind[®] in 29 out of 30 trials (6% yield).

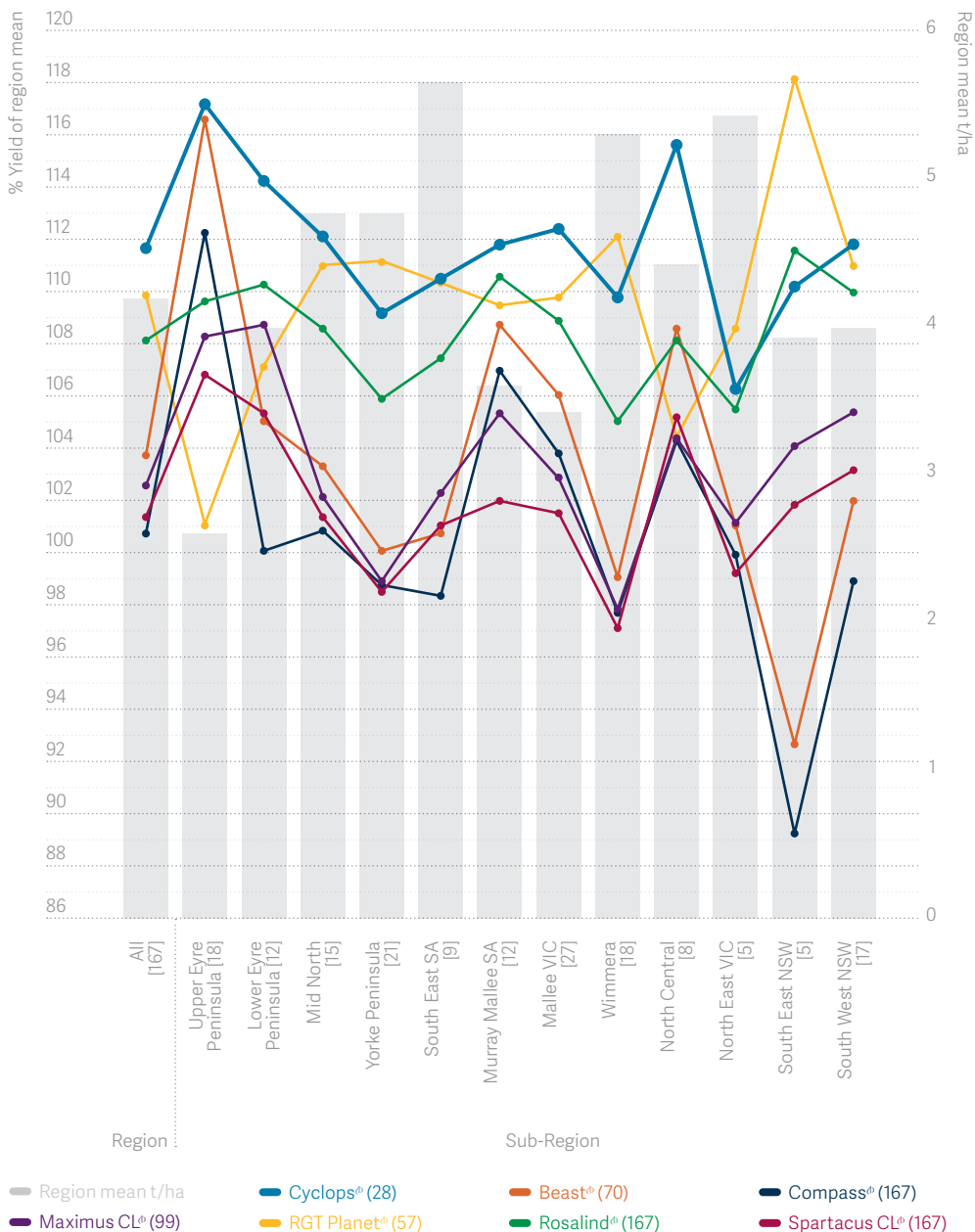
NVT data also underlines the yield versatility that Cyclops[®] offers, consistently ranking as one of the highest yielding varieties across most regions of SA, Victoria and southern NSW.

Figure 1 Grain yield of Cyclops[®] versus comparators across a range of growing conditions – AGT long term data



Source: AGT long term MET analysis, all Australian trial sites 2017-2020.
 [] Total number of trials per environmental grouping
 () Number of trials that each variety was present in across the dataset [65]
 EG Environmental Group, a statistical correlation of performance across 65 trial sites and seasons (2017-2020) where single experiments are grouped based on relative performance of varieties within those trials.
 EG 1 Favourable seasons and environments, with high yield potential
 EG 2 Average style of season, with moderate yield potential
 EG 3 Drier growing season but with a longer, favourable finish
 EG 4 Shorter growing season with terminal drought stress

Figure 2 Grain yield of *Cyclops*[®] versus comparators – NVT long term data

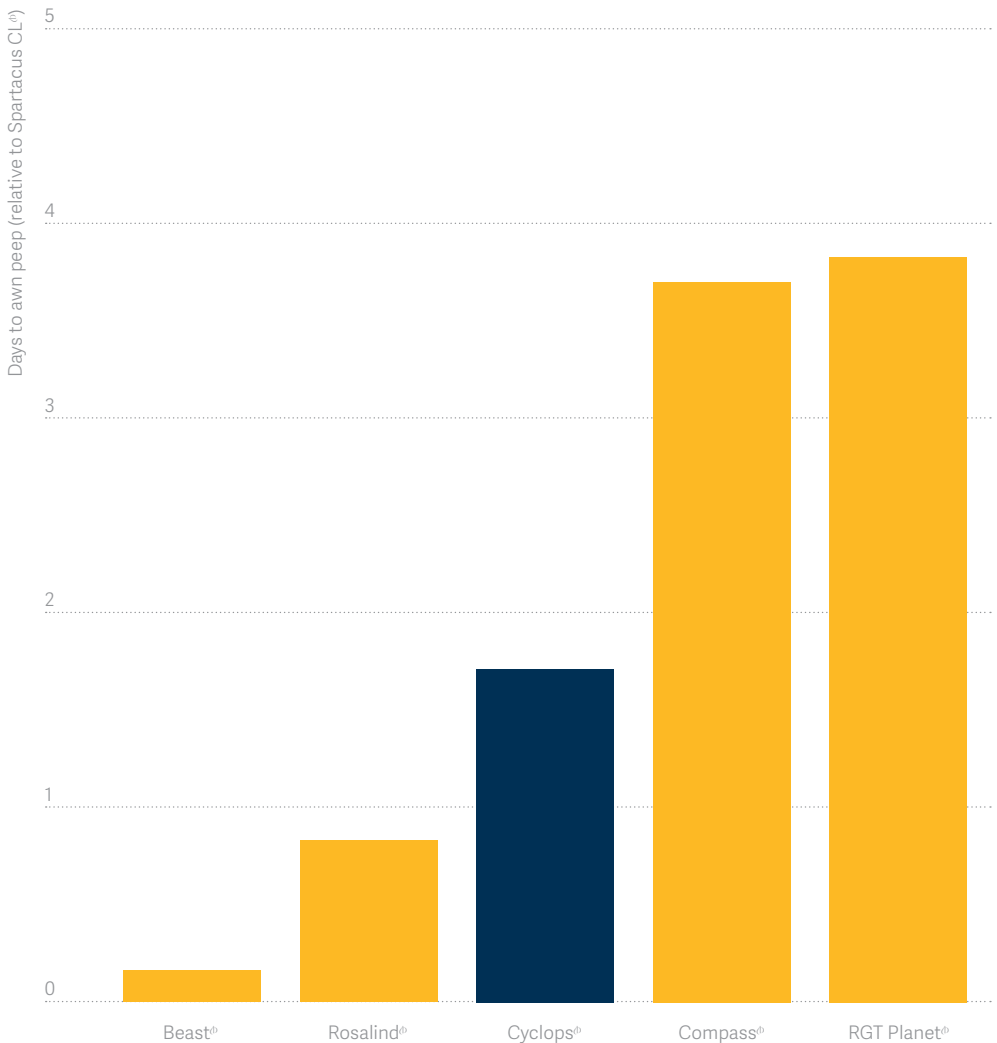


Source NVT main season series long term MET analysis 2016-2020
 [] Total number of trials per region
 () Number of trials that each variety was present in across the SA, Vic and southern NSW dataset [167]

Maturity

AGT data shows that Cyclops[®] reaches awn peep slightly quicker than RGT Planet[®] and a little slower than Spartacus CL[®] and Beast[®].

Figure 3 Awn peep of Cyclops[®] and comparator varieties relative to Spartacus CL[®]



Source / AGT main season barley trials, 2018-2020 (WA/SA, average of 6 trials)

Grain quality

NVT grain quality data suggests that Cyclops[®] offers a great physical grain quality package, producing grain with higher test weight than Compass[®] and RGT Planet[®] and screenings/retention better than RGT Planet[®], Rosalind[®] and Spartacus CL[®].

Figure 4 Test weight of Cyclops[®] versus comparators

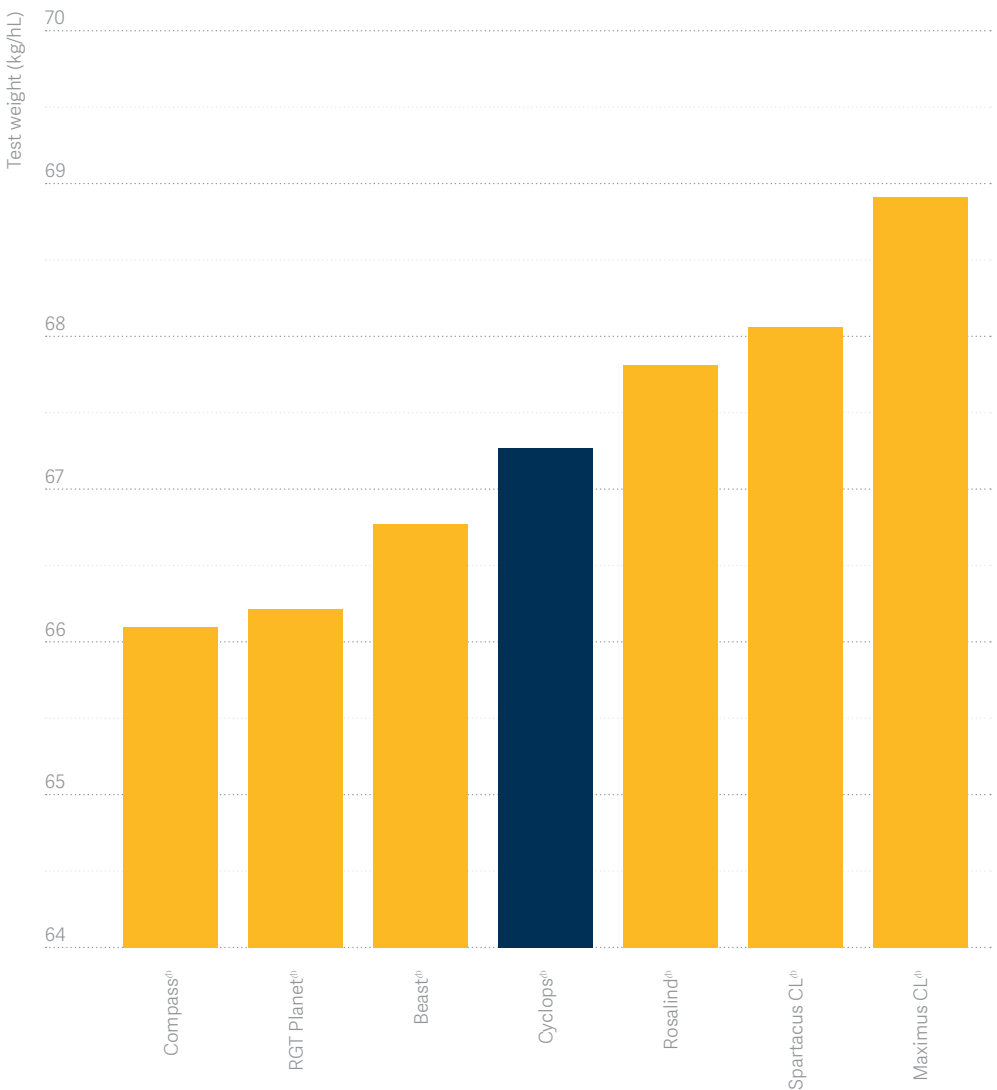


Figure 5 Screenings of Cyclops[®] versus comparators

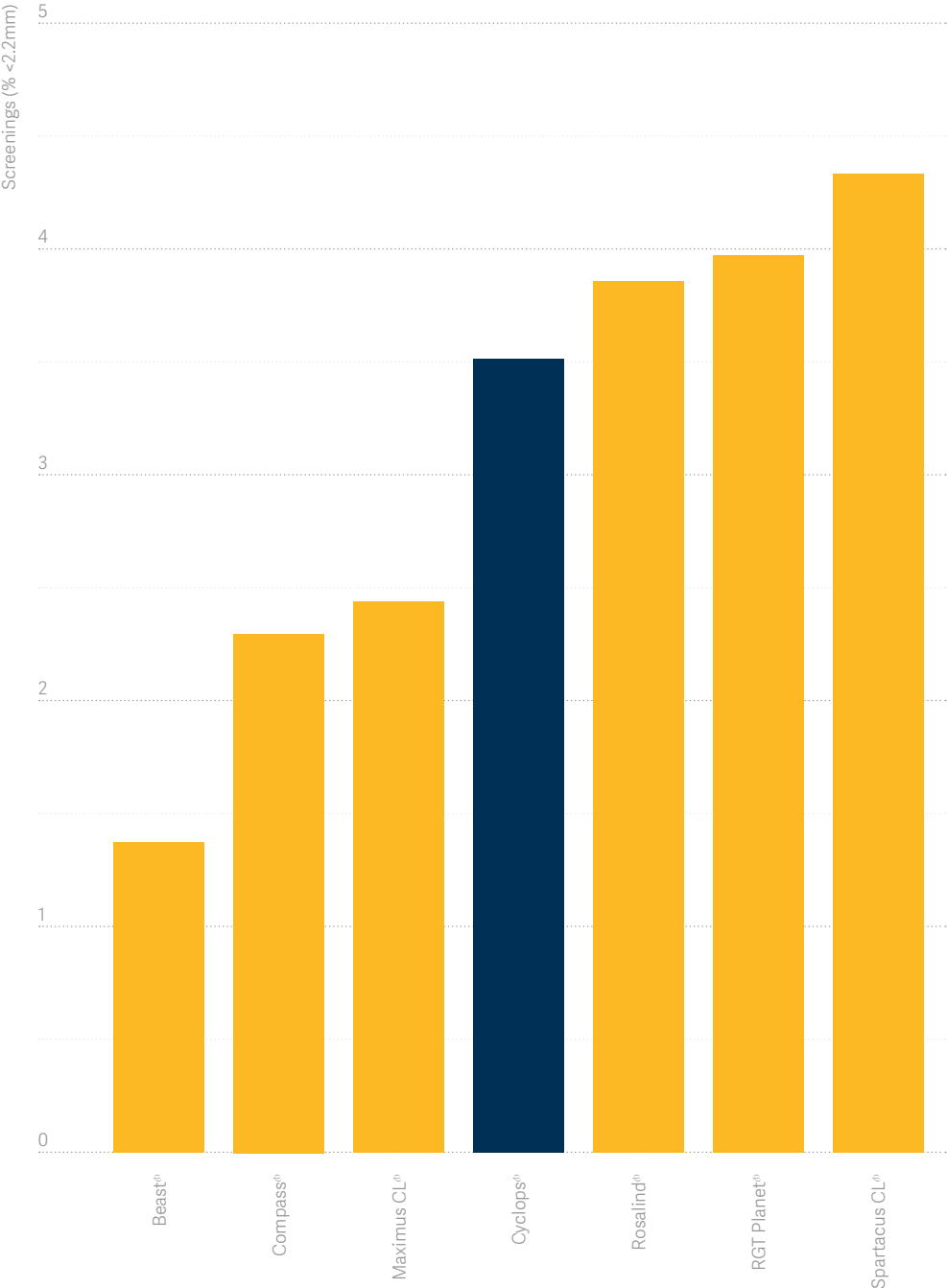
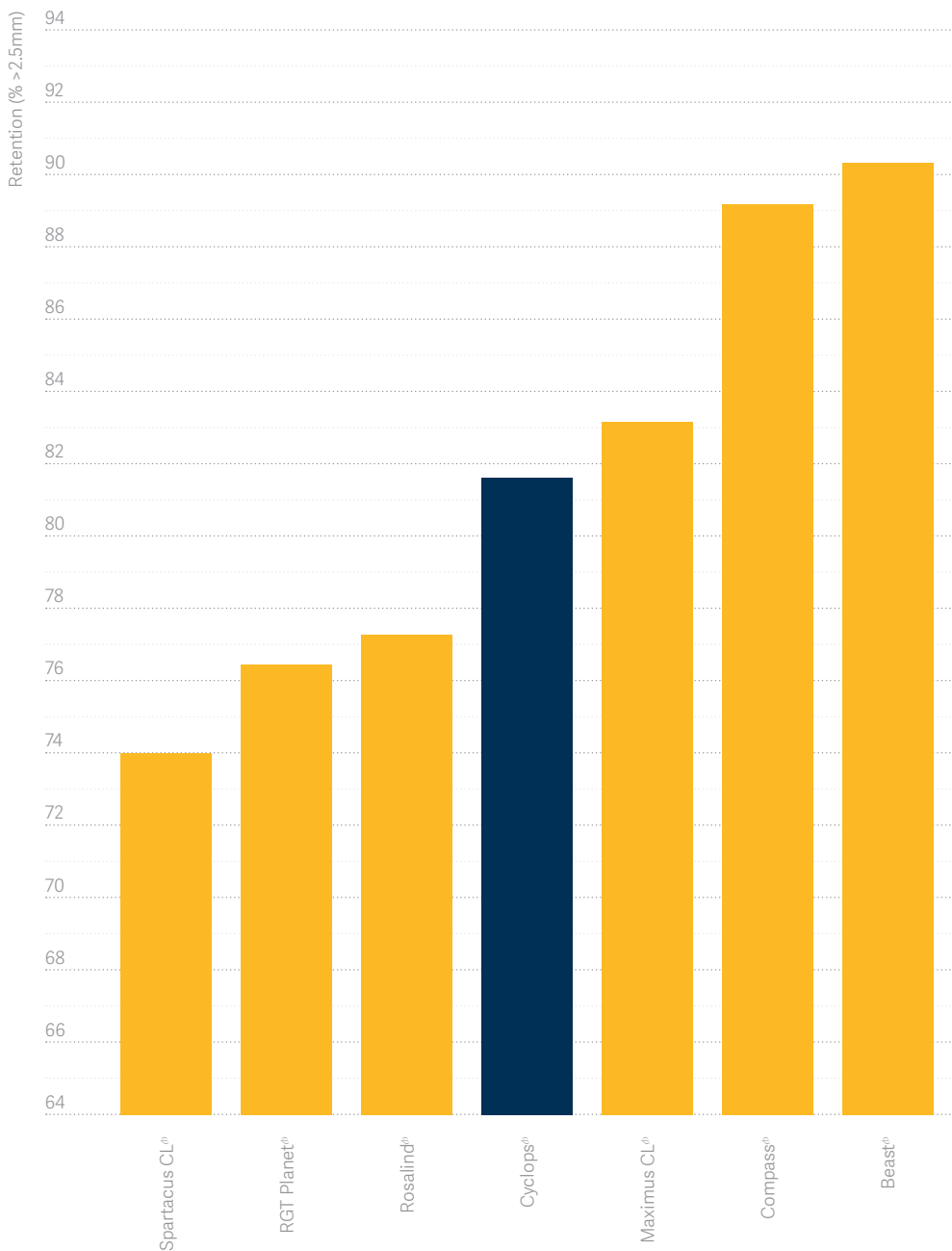


Figure 6 Retention of Cyclops[®] versus comparators



Source NVT main season trial series 2020 (37 trials in South Australia, Victoria and southern New South Wales).

Disease resistance

Table 1 Variety comparisons

Variety	Scald	Leaf rust	SFNB	NFNB	CCN	
South Australia	Cyclops [Ⓞ]	R-S	S-SVS	MS-S	R-MS	S*
	Beast [Ⓞ]	MS-SVS	MR-SVS	MS	MR-S	MR
	Compass [Ⓞ]	MR-SVS	SVS	MS	MR-S	R
	RGT Planet [Ⓞ]	R-MSS	MR-MS	SVS	MR-S	R*
	Rosalind [Ⓞ]	MR-S	MR-MS	MS-S	R-MRMS	R
	Spartacus CL [Ⓞ]	R-SVS	MR-S	S	S-VS	R
Victoria	Cyclops [Ⓞ]	SVS	SVS*	S	MS*	S*
	Beast [Ⓞ]	SVS	S	MSS	MSS#	MR
	Compass [Ⓞ]	SVS	SVS	MS	MS#	R
	RGT Planet [Ⓞ]	MSS	MS	SVS	SVS	R*
	Rosalind [Ⓞ]	S	MS	S	MS	R
	Spartacus CL [Ⓞ]	SVS	S	SVS	S	R
New South Wales	Cyclops [Ⓞ]	SVS*	S	MS*	MR-S*	S*
	Beast [Ⓞ]	SVS	MS-S	MSS	MR-S	MR
	Compass [Ⓞ]	SVS	SVS	MS	MRMS	R
	RGT Planet [Ⓞ]	S	MR-MS	SVS	S	R*
	Rosalind [Ⓞ]	S	MRMS	MSS	MR	R
	Spartacus CL [Ⓞ]	VS	MR-S	SVS	MR-S	R

R Resistant
 MR Moderately Resistant
 MS Moderately Susceptible
 S Susceptible
 VS Very Susceptible

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

A range of reactions is provided (separated with -) where different strains of the pathogen exist and where the variety may respond differently to them



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