

BARQUE

A NEW feed quality cereal eelworm resistant barley for South Australian barley growers

Summary

- Barque is a high yielding, midseason maturing, feed quality barley. (Tested as WI2868).
- Barque is related to the successful variety, Galleon and has similar resistance to Cereal Cyst Nematode.
- Barque has superior yields to Galleon in most situations in South Australia and should be considered as a replacement for Galleon.
- Barque has moderate resistance against most races of Leaf Scald and moderate resistance to Powdery Mildew and Net Blotch (spot form).
- Barque is moderately intolerant of boron toxic soils, is intolerant of manganese deficient soils and appears to be better adapted to light soils than Galleon.
- Barque has much larger grain than Galleon and is similar to Galleon in other grain quality attributes being not suitable for malting.



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Breeding

Developed and released by the South Australian Barley Improvement Program from a cross between Triumph and Galleon and registered under PBR in February 1997. 1998 seed for sowing is subject to a seed royalty surcharge (administered by the ABB) which will not apply in following seasons.

Grain yield

Barque has a clear advantage over Galleon and most current feed varieties regardless of district and rainfall as shown in tables 1 and 2.

Table 1: Yields of Barque, Galleon, Skiff, Chebec and Mundah as a % of Schooner according to agricultural district, in the period, 1992-1996 (SAFCEP data, weighted average).

Variety	Agricultural district		
	Yorke Pen.	Upper & East Eyre Pen.	Lower Eyre Pen.
Barque	107	111	109
Galleon	102	104	104
Skiff	108	109	107
Chebec	101	101	101
Mundah	108	111	106
Schooner	100	100	100

	South East	Murray Mallee	Mid North
Barque	105	109	109
Galleon	101	102	104
Skiff	105	108	113
Chebec	99	100	100
Mundah	105	107	106
Schooner	100	100	100

Limited evaluation of Barque on sandy soils of low fertility indicates that it may be better adapted than Galleon although not as suitable and high yielding as Mundah, Yagan and Chebec in these situations.

Table 2: Yields of Barque, Galleon, Skiff and Chebec as a % of Schooner according to annual rainfall (SAFCEP data 1992 to 1996).

Variety	Annual rainfall (mm)		
	<350mm	350-450	>450mm
Barque	107	111	116
Galleon	100	105	107
Skiff	104	110	123
Chebec	99	104	97
Schooner	100	100	100

Plant characteristics

Barque has midseason maturity like Galleon, thus providing good adaptation over a wide range of environments. Barque has similar straw strength to Galleon and averages 50 mm longer straw, providing improved harvesting ground clearance, particularly in low rainfall areas. Similar to Galleon, Barque retains awns under some conditions and is mostly resistant to head loss.

Disease resistance

In most situations, Barque provides improved protection against Leaf Scald, over and above Galleon and has moderate resistance to powdery mildew and net blotch (spot form) similar to galleon. Barque is slightly more susceptible to Leaf Rust than Galleon. like Galleon, Barque offers good resistance to Cereal Cyst Nematode (Cereal eelworm).

Leaf Scald	Mod. resistant#	like Skiff and better than Galleon
Powdery Mildew	Moderately susceptible	like Galleon
Leaf rust	Susceptible	like Chebec, Skiff
Net Blotch (spot form)	Moderately resistant	like Galleon
Cereal	Susceptible and mod. tolerant	like Galleon

#susceptible to some isolates of the fungus.

Grain quality

Barque has larger grain than Galleon and Chebec while screenings levels are similar to galleon. Barque has similar digestible and metabolisable energy values to Galleon and other feed quality varieties.

Table 3: Summary of grain quality characteristics on samples from variety trials in SA. (SAFCEP data).

	Protein (%)	Screening (%) <2.2 mm	1 000 grain weight (g)
Barque	11.8	4.8	45.4
Galleon	12.2	4.9	42.4
Chebec	12.1	4.7	42.1
Schooner	11.9	4.1	41.7

Herbicide reaction

BLimited evidence indicates that Barque and Galleon may have less tolerance to Banvil M and 2,4-D Amine. Barque has also shown greater tolerance to Diuron/MCPA than Galleon while response to other commonly used herbicides is similar to other varieties.

Soil Nutrient Requirements

Barque is similar to Galleon in being very sensitive to manganese deficient soils. Use of manganese enriched seed, nutrient seed coatings and manganese foliar sprays may contribute substantially to alleviating these stress conditions.

Limited experimental data suggests that Barque may have superior zinc efficiency than Galleon, Mundah, Skiff and Schooner.

Sowing

Barque is well suited to a range of sowing dates, although maximum potential yields occur when Barque is sown early..

Table 4. Yields of Barque, Galleon, Chebec and Skiff as a % of Schooner according to sowing time. (SAFCEP data, 1993-1996)

Variety	Sowing time		
	May	June	July
Barque	109	101	NA
Galleon	97	87	96
Chebec	95	99	108
Skiff	127	109	112
Schooner	100	100	100
<i>No. of obs.</i>	<i>15</i>	<i>56</i>	<i>6</i>

Sowing rates should achieve a minimum plant density of 145 plants/m². Weight of grain sown should relate to seedbed conditions, germination % and grain weight, which is generally larger than other varieties like Galleon, Skiff, and Chebec.

Compiled by

Rob Wheeler, SA Field Crop Evaluation Program, SARDI.

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Seed availability

The ABB, in conjunction with the Australian Field Crops Association, has taken on the responsibility of commercialising Barque. Seed sales will be through a range of AFCA members and details are available through the ABB Grainline 1800 018 205.

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South Australian Field Crop Evaluation Program SARDI

GPO Box 397 ADELAIDE, SOUTH AUSTRALIA 5001
Telephone: 08 8303 9480 Facsimile: 08 8303 9378
International Code +618