

ALL ABOUT ALMONDS

ESTABLISHMENT



AUSTRALIAN ALMOND VARIETY - CARINA

Carina is high spur bearing with a compact to medium canopy that may suit higher orchard densities. The hull flares away from the shell in a 'banana' fashion and the semi-hard shell reduces kernel quality downgrades and late season bird damage.

KEY POINTS

- ▶ Self-fertile variety
- ▶ Spur bearing
- ▶ Early harvest
- ▶ Early pollinator for Nonpareil



POMOLOGICAL TRAITS

- Growth habit** Spreading
- Branching density** Medium high
- Nut location** Spurs and one year old wood
- Flowering time** Early mid, full bloom 4 days earlier than Nonpareil
- S compatibility genotype** S7Sf
- Pollination** Self-fertile variety. Cross pollination unnecessary. Good level of autogamy.
- Compatible Pollinators** Nonpareil, Monterey, Peerless, Price, Rhea
- Flowering density** High
- Length of flowering** Long, approx. 4 weeks
- Bearing precocity** Precocious
- Cropping capacity** High
- Cropping regularity** Good. Little to no alternate bearing
- Bacterial spot tolerance** Very good
- Harvest season** Early
- Harvest ease** Good
- Husking ease** Good. Hull is easily separated from shell

COMMERCIAL TRAITS

- Nut shape** Ovate
- Kernel size** Medium (1.13 g)
- Crackout percentage** 28.6%
- Shell texture** Semihard shell
- Double kernels** No doubles
- Kernel appearance** Attractive, skin colour light plump kernel
- Kernel composition** Oil 57.4%; oleic acid 62.3%; Vitamin E 53.8 mg/100g oil

GLOBAL ASSESSMENT

Carina is a highly precocious variety that has consistently out yielded the current industry benchmark, Nonpareil by 12% (eight years of yield assessments). It has superior fruit characteristics with a semi-hard shell, fully sealed shell and sweet tasting, lightly coloured kernel. The kernel is less likely to be damaged by insects and moisture due to the fully sealed shell, enabling a higher quality kernel. The semi-hard shell is less likely to result in bird damage during the growing season. It can be used as an early pollinator for Nonpareil, replacing Peerless, Price or Monterey. The growth habit is slightly spreading similar to Nonpareil but crops mostly on spurs. The hull detaches easily from the shell at harvest, a characteristic that may lend itself to in-field de-hulling in the future. Carina is self-fertile and can pollinate itself in single variety orchards.

TRAIT	ASSESSMENT CRITERIA	RATING (/10)	
		NON PAREIL	CARINA
PRODUCTION			
Flowering date	Preferable same as Nonpareil, -3 to +14 days for sf, -3 to +7 for non-sf	5	8
Flowering	Spur bearing, flower to fruit set ratio	6	6
S Incompatibility group	Self-compatible pollen, flower autogamy, bag sf's, bring bees	0	10 (sf)
Precocious	Precocious, first crop year 3, yield to canopy volume ratio	6	8
Vigour	Intermediate to high but must be balanced with fruitfulness	7	7
Growth habit	Upright, limbs at 40° from vertical, non-weeping, no blind wood	8	8
Branching density	No blindwood	6	6
Ease of training and pruning	Non-weeping	8	8
Harvest Time	No later than Nonpareil plus 30 days (i.e. < Monterey)	6	6
Fruit retention - Minimal windfalls	Minimise food safety risk, facilitate shake and catch	6	5
Fruit retention - Minimal mummies	No stick tights	3	3
High yielding	2.5 - 3.0 tonnes/ hectare, yield to canopy volume ratio	7	8
Regular production	No alternate bearing	7	N/A
PEST & DISEASE RESISTANCE			
Rust		6	6
Hull rot		0	3
Bacterial spot		8	8
Anthraco nose		6	6
Monilinia		7	7
NIBF		6	**
Carob moth		0	7
Mites		5	5
Black Peach Aphids		5	5
PROCESSING			
Hulling and shelling ease	Thin hull, easily removed with minimal damage to kernel	8	8
Shell type	Less than or equal to "hard"	5	7
Shell seal	Well sealed to avoid insect damage and mould contamination	0	10
Crackout ratio	Good kernel to waste (hull and shell) ratio	7	8
Roasting	Good after roasting in terms of flavour; flesh colour; life	7	**
Blanching	Easily blanched	7	**
PRODUCT QUALITY			
Double kernels	Less than 5%	7	7
Kernel size/ weight	Minimum 1.24g; optimum range 18-24 kernel per ounce	7	9
Kernel shape	Oval, smooth	8	8
Testa colour	Golden testa; "clean" & "clear"	9	9
Testa pubescence	Smooth, "clean", no "dusty" appearance	9	9
Kernel meat	White, no brown areas	9	9
Staining propensity	Shell and kernel	0	7
Oil content	High but not quantified (Nonpareil 56.5% in 2013 Riverland)	7	8
Flavour	Sweet, strong almond flavour, typical, non-bitter	6	6
Storage life	Shelf life of processed product	6	**

** Yet to be assessed.

MORE INFORMATION

Almond Board of Australia

PO Box 1507
Loxton SA 5333
growing.australionalmonds.com.au
communications@australionalmonds.com.au
P +61 8 8584 7053

PROJECT CODE

AL12015

This project has been funded by Horticulture Innovation Australia Limited using the almond research and development levy and funds from the Australian Government.

Acknowledgements:

Dr. Michelle Wirthensohn,
University of Adelaide

The input and suggestions made by Australian almond processors, marketers and growers.

E.Australian Almond Varieties Carina

Copyright © All material published in this Fact Sheet is copyright protected and may not be reproduced in any form without written permission.

DISCLAIMER

Any recommendations, suggestions or opinions contained in this publication do not necessarily represent the policy or views of the Almond Board of Australia. No person should act on the basis of the contents of this publication without first obtaining specific, independent, professional advice. The Almond Board of Australia and contributors to this Fact Sheet may identify products by proprietary or trade names to help readers identify particular types of products. We do not endorse or recommend the products of any manufacturer referred to. Other products may perform as well as or better than those specifically referred to. The ABA will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.

