NSW GOVERNMENT
Department of Primary Industries
primefact

Hadass mandarin

March 2020, Primefact 1726, First edition

Dave Monks and Graeme Sanderson, Research Horticulturists, Dareton

Figure 1. A Hadass mandarin tree.

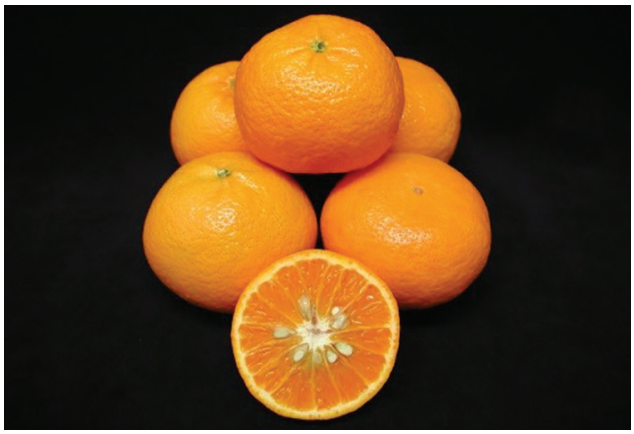

Figure 2. Hadass mandarins.

Estimated maturity period

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sunraysia												

Origin

Hadass was selected in Israel from open-pollinated Ellendale mandarin seedlings. It is a variety developed by the Agricultural Research Organisation (ARO) (Volcani Center) (Israel). It has Plant Breeder's Rights (PBR) protection and is managed in Australia by Variety Access

Fruit quality

Table 1. Hadass mandarin fruit quality* characteristics.

Skin	Relatively easy to peel, orange-yellow, slightly pebbled.
Average rind thickness (mm)	2.9
Internal quality	Dark orange colour with distinctive taste associated with the Ellendale parent.
Average number of seeds	7 in 2015 and 1.6 in 2016, low-seeded if isolated from other citrus with viable pollen.
Juice per cent (%)	45
˚Brix	12.3
Acid per cent (%)	1.1
Brix/acid ratio	11.2
Average fruit weight (g)	137
Average fruit diameter (mm)	68

*Juice quality levels considered adequate for harvest and developed by sequential analysis of fruit from top-worked evaluation trees.

Comments

- Considered to be a late-maturing variety with high eating quality.
- The first fruit produced in 2015 from top-worked Valencia trees did not maintain its condition into late September–October.
- Fruit tended to granulate, with fruit condition deteriorating quickest on trees top-worked to Valencia with a Cleopatra mandarin rootstock. This could be related to the light crop and first fruiting of the variety in the warm Sunraysia region.
- Acid level remains high for a prolonged period.

Table 2. Fruit quality of Hadass mandarin top-worked to Valencia orange on Carrizo citrange rootstock, Dareton Primary Industries Institute, NSW in 2015. See the 'Estimated maturity period' to interpret this data.

Date	% Juice	°Brix	% Acid	Brix:acid ratio	BrimA
22.6.2015	51	10.4	1.37	7.6	81
29.7.2015	50	11.6	1.32	8.8	104
10.8.2015	48	12.4	1.18	10.5	126
20.8.2015	42	12.4	1.01	12.3	138
1.9.2015	46	12.2	1.07	11.4	131
Mandarin minimum standard	35	–	–	–	110

Table 3. Fruit quality of Hadass mandarin top-worked to Valencia orange on Carrizo citrange rootstock, Dareton Primary Industries Institute, NSW in 2015. See the 'Estimated maturity period' to interpret this data.

Date	% Juice	°Brix	% Acid	Brix:acid ratio	BrimA
7.6.2016	49	10.7	1.86	5.8	54
21.6.2016	52	10.7	1.62	6.6	70
4.7.2016	51	11.3	1.60	7.1	81
18.7.2016	52	11.8	1.57	7.5	91
29.7.2016	50	12.0	1.41	8.5	105
11.8.2016	49	11.9	1.34	8.9	108
29.8.2016	49	12.4	1.14	10.9	129
12.9.2016	41	11.9	0.98	12.2	132
22.9.2016	45	12.7	1.06	12.0	140
13.10.2016	32	12.4	0.78	15.9	153
Mandarin minimum standard	35	–	–	–	110

Commercial interest in Australia is low. The need to isolate trees from viable pollen to obtain seedless fruit is too difficult for most citrus growers.

Acknowledgements

Citrus Australia Ltd (CAL)
Department of Primary Industries and Regional Development, WA
Hort Innovation Australia
Variety Access

Hort Innovation Strategic levy investment | CITRUS FUND

This project has been funded by Hort Innovation using the citrus research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au

Reference number: PUB20/132.

The information contained in this publication is based on knowledge and understanding at the time of writing (December 2019) and was generated from field and nursery trees at Dareton Primary Industry Institute, Sunraysia, NSW, unless otherwise stated. Where quantitative data are presented (e.g. % Juice or rind thickness) they are based on measured properties. Where qualitative data are presented (e.g. thorniness or tendency to split), they are based on observations or brief notes recorded in the field.

Because of advances in knowledge, users are reminded of the need to ensure the information upon which they rely is up to date and to check the currency of the information with the appropriate officer of the Department and the user's independent advisor. Any reliance on the contents of the publication (or any part thereof) will be entirely at the user's own risk and neither Hort Innovation nor the Department will be responsible or liable for any loss, damage, cost or expense allegedly arising from any use or non-use of this publication.

Whilst care has been taken in the preparation of this publication, Hort Innovation and the Department make no representations and (to the extent permitted by law) expressly exclude all warranties regarding the accuracy, completeness or currency of the information, recommendations and opinions contained in this publication.