NSW GOVERNMENT Department of Primary Industries

primefact

# Dolci navel orange

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Figure 1. A Dolci navel orange tree.

Figure 2. Dolci navel oranges.

## Estimated maturity period

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

## Origin

The Dolci navel orange originated from a limb mutation from a Washington navel orange tree on a property at Leeton, NSW, by a member of the Pacific Fresh citrus packing group. Dolci navel has Plant Breeder's Rights (PBR) protection and is managed in Australia by Variety Access.

## Fruit quality

Table 1. Dolci navel orange fruit quality* characteristics.

| | |
|---|---|
| **Skin** | Brown–olive colour, slightly pebbled, peels similar to a Washington navel orange. |
| **Average rind thickness (mm)** | 5.3 |
| **Internal quality** | Sweet taste related to the low acid content of the fruit. Flesh texture is similar to a Washington navel. Consistently high juice content. Good palatability. |
| **Average number of seeds** | 0 |
| **Juice per cent (%)** | 51 |
| **˚Brix** | 10.9 |
| **Acid per cent (%)** | 0.82 |
| **Brix:acid ratio** | 13.4 |
| **Average fruit weight (g)** | 320 |
| **Average fruit diameter (mm)** | 84 |

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

## Comments

- Trees were top-worked at Dareton Primary Industries Institute's southern Australia evaluation site in 2011.
- Fruit for assessment was produced in 2014 and was consistent with the brown skin mutation on the original mother source tree.
- The maturity period is early mid-season and would class the Dolci navel as an early Washington navel type.
- The trade name 'Dolci', which can mean sweet in Italian, was chosen for the marketing program to highlight a positive eating quality.
- The limb mutation is being commercialised as a novelty citrus product, predominantly planted in the Riverina region of NSW.
- Commercialisation is in the early stages and only on a limited scale as market reaction is being sought for the national and international potential of the selection. Initial reaction is usually based on a visual response to the skin colour and often tends to be negative. Fruit tastings have usually overcome this first reaction as eating quality is high at full maturity.

Table 2. Fruit quality of Dolci navel orange top-worked to Valencia orange on Carrizo citrange rootstock, at Dareton Primary Industries Institute, NSW, during 2014–2017. See 'Estimated maturity period' to interpret this data.

| Date | % Juice | °Brix | % Acid | Brix:acid ratio | BrimA |
|---|---|---|---|---|---|
| 23.5.2014 | 53 | 9.6 | 0.86 | 11.2 | 102 |
| 3.6.2014 | 51 | 10.9 | 0.81 | 13.4 | 126 |
| 12.6.2014 | 53 | 10.4 | 0.67 | 15.6 | 128 |
| 26.6.2014 | 54 | 10.5 | 0.67 | 15.6 | 129 |
| 14.7.2014 | 53 | 10.5 | 0.67 | 15.6 | 129 |
| 18.5.2015 | 52 | 10.4 | 0.86 | 12.1 | 115 |
| 29.5.2015 | 48 | 10.7 | 0.79 | 13.6 | 125 |
| 11.6.2015 | 51 | 10.6 | 0.77 | 13.8 | 124 |
| 22.6.2015 | 49 | 11.6 | 0.81 | 14.4 | 138 |
| 6.7.2015 | 49 | 12.0 | 0.71 | 16.9 | 151 |
| 17.7.2015 | 48 | 11.9 | 0.62 | 19.2 | 155 |
| 29.7.2015 | 48 | 11.6 | 0.61 | 19.1 | 151 |
| 6.5.2016 | 49 | 10.5 | 0.74 | 14.3 | 125 |
| 16.5.2016 | 51 | 11.0 | 0.79 | 14.0 | 130 |
| 27.5.2016 | 43 | 11.2 | 0.72 | 15.6 | 137 |
| 7.6.2016 | 46 | 11.4 | 0.74 | 15.5 | 140 |
| 21.6.2016 | 49 | 12.0 | 0.66 | 18.2 | 154 |
| 4.7.2016 | 49 | 11.6 | 0.63 | 18.5 | 150 |
| 5.6.2017 | 52 | 10.6 | 0.98 | 10.8 | 110 |
| 15.6.2017 | 52 | 10.7 | 0.93 | 11.5 | 115 |
| 26.6.2017 | 52 | 10.8 | 0.84 | 12.8 | 122 |
| 7.7.2017 | 51 | 11.6 | 0.86 | 13.4 | 134 |
| Orange minimum standard | 38 | 9.0 | – | 9 | 90 |

**The olive skin colour can relate to a sweet, high-quality eating experience, so harvest timing and internal quality standards for marketing need to be established for this new variety.**

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Variety Access


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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.