

## TDE 3 (Tahoe Gold) mandarin

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Figure 1. A TDE 3 (Tahoe Gold) mandarin tree.



Figure 2. TDE 3 (Tahoe Gold) mandarins.

### Estimated maturity period

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

### Origin

The TDE 3 is a hybrid triploid selection of (Temple tangor × 4n Dancy mandarin) × Encore mandarin bred by the University of California, USA. TDE3 has Plant Breeder's Rights (PBR) protection and is managed in Australia by Nu Leaf IP Pty Ltd.

### Fruit quality

Table 1. TDE 3 mandarin fruit quality\* characteristics.

Skin	Relatively easy-peel, deep orange-red colour, pebbled. Fruit slightly flattened, some with a small 'neck'.
Average rind thickness (mm)	3.5
Internal quality	High juice content and increased °Brix level in 2011. A juice content as high as 60% was recorded from fruit grown at the South Australian evaluation site. °Brix levels at harvest in 2012 peaked at 11.7, with acid content between 0.67% and 0.84% depending on rootstock.
Average number of seeds	1.8
Juice per cent (%)	58
°Brix	12.1
Acid per cent (%)	1.0
Brix:acid ratio	12.1
Average fruit weight (g)	203
Average fruit diameter (mm)	81

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

## Comments

- TDE 3 is the smallest of the TDE hybrids.
- TDE 3 is the earliest maturing of the TDE hybrids with a relatively short period on the tree before rind deterioration ('puffiness') begins to occur.
- Rind condition is coarse on young top-worked trees in the hot and dry Sunraysia environment. Tree age and milder climates are reported to improve rind condition of the TDE hybrids.
- Harvest °Brix levels were higher in 2011 and ranged between 10.8 and 13.2 depending on rootstock and site. °Brix levels were lower in 2012 and ranged between 11.0 and 11.7 depending on rootstock.
- Young field-grown and top-worked trees have a similar thorny habit to TDE 2. The thorny nature of TDE 3 will require specific management to establish a limb framework early in the life of the tree to assist fruit thinning and harvest activities. Thorniness is said to decrease with tree age.
- TDE 3 is the most difficult of the three TDE hybrids to harvest as a large proportion of the fruit is within the canopy and requires pushing into the tree to remove the fruit. This feature may exclude the variety from becoming commercial in Australia. Pickers needed strong protective clothing and gloves to lower the risk of thorn injury.

Table 2. Average yield per tree\* on trees top-worked to Valencia orange.

Rootstock	Average yield per tree (kg)		
	2010	2011	2012
Citrango	32	133	21

\*Average yield per tree results are from a small number of evaluation trees and should only be used as a general indication of the variety's potential yield.

**There is no commercial interest in TDE 4 in Australia.**

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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.

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