



Department of  
Primary Industries

# Citrus Congress 2024: New Varieties Update

Dave Monks

**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](http://horticulture.com.au)



GOVERNMENT OF  
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Department of  
**Primary Industries and  
Regional Development**





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F2P3

MAIN TRAITS



Uruguay

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- » WIDE HARVESTING PERIOD (JULY-OCTOBER; SALTO, URUGUAY).
- » GOOD PRODUCTIVITY.
- » FRUIT HANGS EXCELLENT ON TREE, KEEPING FIRMNESS AND PEEL QUALITY.
- » FRUITS WITH BRIGHT, WELL-COLORED AND SMOOTH SKIN.
- » OUTSTANDING FLAVOR WITH VERY HIGH (°BRIX:16-20), KEEPING A WELL-BALANCED ACIDITY.
- » SEEDLESS WHEN PLANTED UNDER SOLID BLOCKS.
- » OUTSTANDING POSTHARVEST PERFORMANCE:

BEHAVES EXCELLENT UNDER EXTENDED COLD TREATMENT.  
KEEPS FIRMNESS, FRESHNESS AND FLAVOR AFTER 2 MONTHS,  
SHOWING NO SYMPTOMS OF CHILLING INJURIES.



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# HARVEST CALENDAR

## New Mandarins

Month	March				April				May				June				July				August				September				October			
Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MANDARINS	OKITSU																															
	NANKOU																															
	MARISOL																															
	ORONULES																															
	OWARI																															
					F7P3																											
	CLEMENULES																															
					F4P7																											
	NOVA																															
									F3P8																							
	M. COMÚN																															
													F2P3																			
													W. MURCOTT																			
																ELLENDALE																
																				MURCOTT												
																				ORTANIQUE												

 Commercial varieties of reference.

 New varieties

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**Australia**

# New grafts

2018/19

Sugar Belle mandarin

C4-15-19 mandarin

Pink Marvel (variegated) lemon

Cambria late navel

2019/20

Daisy LS (California) mandarin

Kinnow LS mandarin

2020/21

UF900, UF950, Seedless snack mandarins

HBI02, HBI06 mandarins

Lloyd late cara cara

2021/22

Sunrise mandarin

BA001 lemon

HBI01, HBI05 mandarins

Shiranui mandarin





## New buds

2022/23 – topwork this season

11C017 'Premier' (QDAF) mandarin

12C009 'CB Murcott' (QDAF) mandarin

15C001 (QDAF) mandarin

HBI 01, 12 mandarins

ROYG mandarin

Bingo mandarin

G4 early Cara Cara

Rusty, Langdon and Raven's Choice navels

2023/24 – topwork next season/late this season

Valencia early

Andes, Cultifort, Octubrina clementine mandarins

Benjamin Andes lemon

Bela Bela satsuma

HBI 04, 11, 14, 15, 20 mandarins

RBB7-24 navel

2x red Valencia (one blush, one flesh)

Red Pomelo

Star Ruby Grapefruit

2x RHM irradiated selections

DV Valencia

# Citrus News

ISSUE 4 2023



## PROFIT DRIVERS

International experts lined up to speak at Australian Citrus Congress 2024



## Variety evaluation project extended

By Dave Monks

**On the back of sustained industry support, the levy-funded Evaluation of New Citrus Varieties project (CT22000) has been renewed for another five years.**

For over a quarter of a century, the project has provided independent evaluations of new citrus varieties for industry to make informed business decisions. More than 1,000 citrus growers have engaged with the project over the last five years.

The latest re-contracting has seen the formal inclusion of the Western Australia Department of Primary Industries as a project partner, alongside the New South Wales Department of Primary Industries (NSW DPI).

The West Australian department has been a strong supporter of the project for many years, with growers in the state receiving ongoing exposure to new varieties through Kevin Lacey's demonstration sites, generously hosted on properties in Harvey, Moora and West Ginjin.

The project team evaluates new varieties imported from international breeding and selection programs, along with varieties bred here in Australia or found as chance seedlings through natural, or induced, mutations.

Most international varieties are represented in Australia by third-party variety managers, who look after the rights of the owner for evaluation or commercialisation purposes. A few new varieties are still available without commercial rights



Some of the new varieties on display at the 75th anniversary of the Dareton Primary Industries Institute Open Day in June 2023

(royalties and per-tree fees) but that number has dropped dramatically over the last 15 years, as successful new private varieties have become 'big business'.

Six new varieties were received by the project team based at the NSW DPI's research station in Dareton, Sunraysia, over the 2022/23 season. These varieties were grafted to a range of new rootstocks in a hothouse. These varieties are the Bingo, HB12, CB Murcott, Premier and 15C001 mandarins, along with the Rusty orange.

In the same period, ten varieties were grafted, or re-grafted, to a range of rootstocks with a Valencia orange interstock in the field. Of those, one lemon and five mandarins were grafted for the first time. They are the BA0001 lemon, and the HB101, HB102, HB105, UF Sunrise and Shiranui mandarins.

The Lloyd Ultra Late Cara Cara orange and the UF900, UF950 and Seedless Snack mandarins had additional grafts made.

In the same period (2022/23 season), 13 new varieties have been planted out in the field on a range of new and appropriate rootstocks for evaluation of fruit production and early observations of graft union compatibility. These include the BA0001 lemon, the Cambria orange, and the Shiranui, HB101, HB102, HB105, HB106, Kinnow LS, Daisy LS, UF Sunrise, Seedless Snack, UF900 and UF950 mandarins.

The latest group of varieties introduced on the West Australian evaluation sites include the Honey Bee, HB101, HB102, HB105 and HB106 mandarins, the Lloyd Ultra Late Cara Cara navel and the DV Valencia orange.

All varieties in the program, new or old, can be viewed by appointment.

There are currently more than 40 information sheets available on the NSW DPI website outlining the performance of modern varieties grown at the Dareton research station. Navigate to 'Rootstocks and Varieties' via this link <https://bit.ly/3RyxUNT>

**Dave Monks is a Research Horticulturist with NSW DPI.**

*The Evaluation of New Citrus Varieties project (CT22000) has been funded by Hort Innovation, using the citrus research and development levy, contributions from the Australian Government and co-investment from New South Wales Department of Primary Industries and the Western Australia Department of Primary Industries and Regional Development.*



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E: victoriancitrusfarms@gmail.com  
www.victoriancitrusfarms.com.au



# New mandarins

M4, Kishu, Mojo, Sugar Belle, 88-2, Honeybee, Daisy LS, Kinnow LS



# M4



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit		Brix°	Acid %	Juice %	B:A Ratio	BrimA
M4	Early April	50	1.3	0.3		12.5	0.77	48	16.3	156



# Mojo



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit	Brix°	Acid %	Juice %	B:A Ratio	BrimA
Mojo (12)	Mid May	60	2.2	1.0 (0-8)	12.2	0.74	51	17	153

# Sugar Belle



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit		Brix°	Acid %	Juice %	B:A Ratio	BrimA
Sugar Belle	Colour in May	62	2.4	5.5		13.5	1.6	53	8.6	120

88-2



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit		Brix°	Acid %	Juice %	B:A Ratio	BrimA
88-2	Late May-June	64	3	0.1		12.5	0.7	48	17	155



# M8



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit		Brix°	Acid %	Juice %	B:A Ratio	BrimA
M8	June	~70	2.2	~1		12	0.85	42	14	140





# Kinnow LS



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit	Brix°	Acid %	Juice %	B:A Ratio	BrimA
Kinnow LS	Late Aug/Sept→	57	2.3	1	12-15	0.8-1.2	50-55	13?	145-165

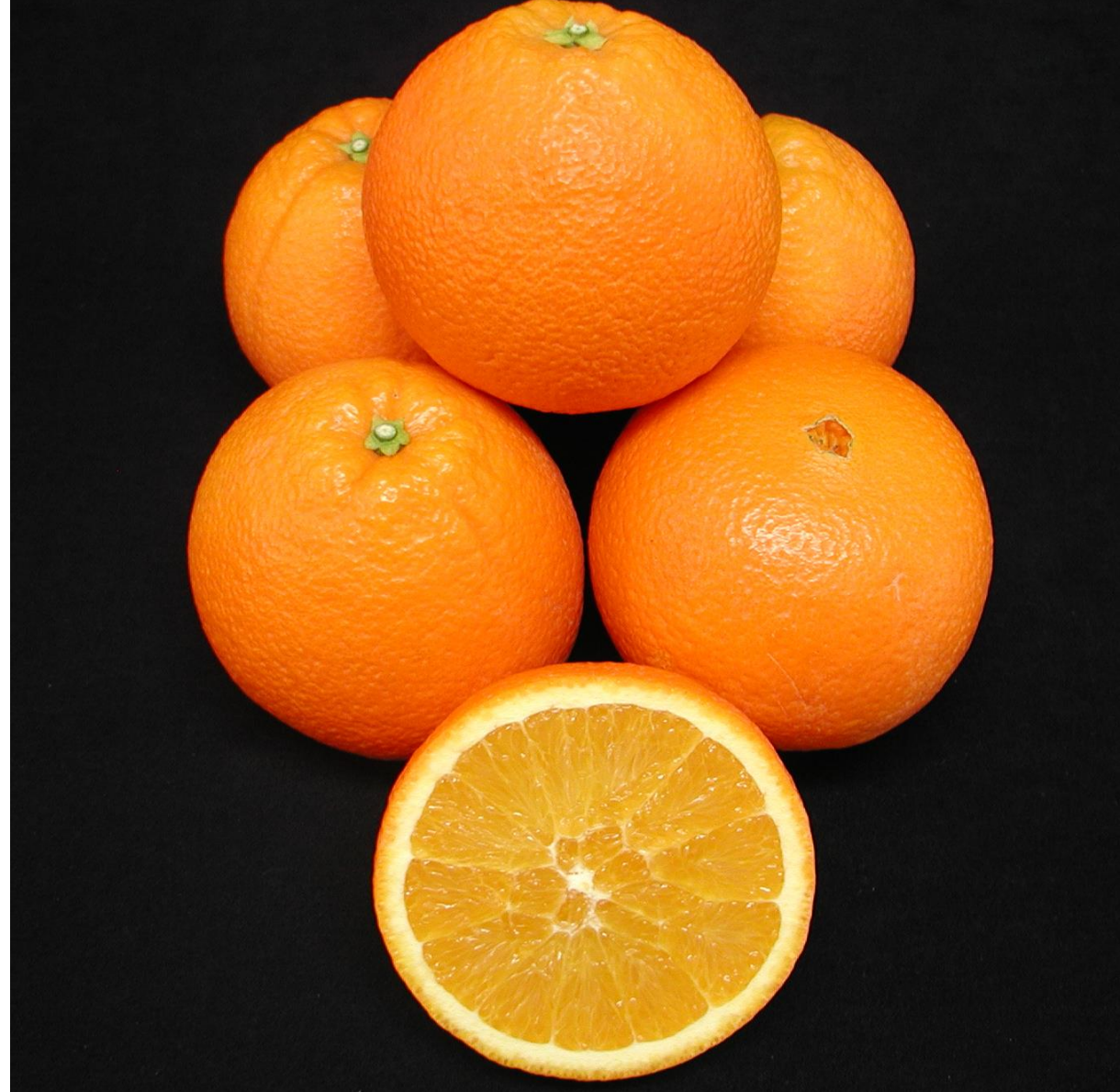
# New navels

Rayno, Palmer, Witkrans, Cambria, and Glen Ora



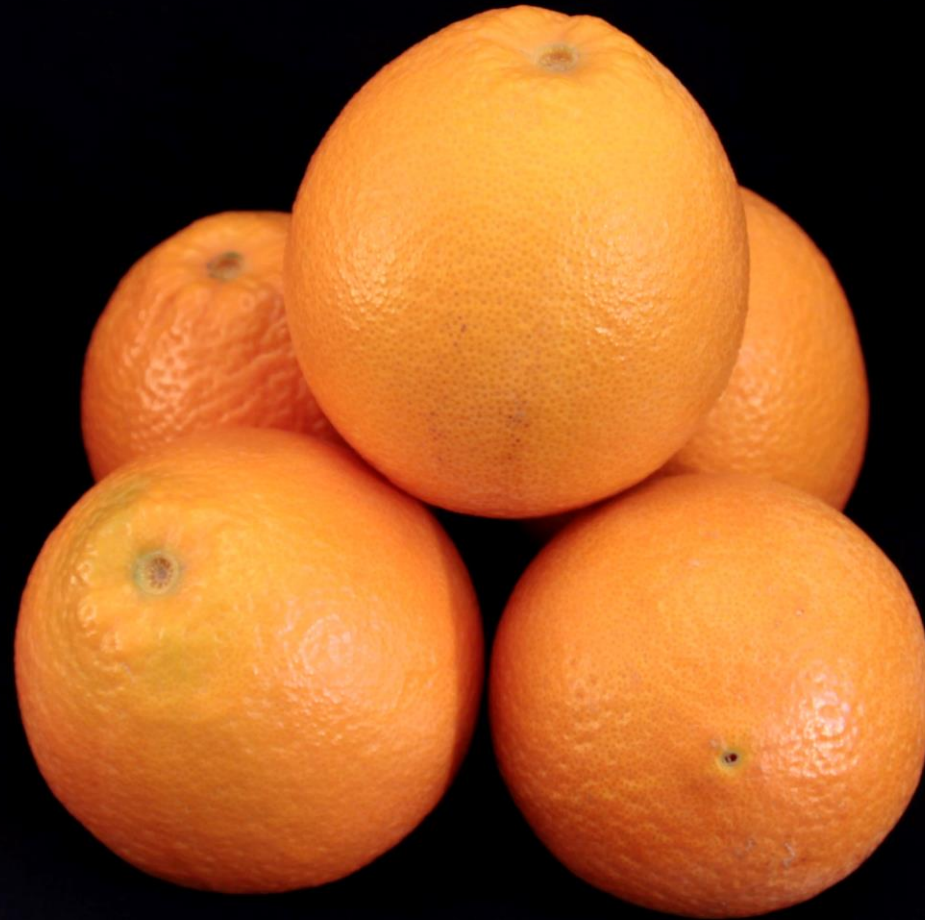


# Palmer



	% Juice	°Brix	% Acid	Brix:Acid	BrimA
Palmer (early June)		12.5	0.95	13.2	142

# Witkrans



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit		Brix°	Acid %	Juice %	B:A Ratio	BrimA
Witkrans	August	72	4.3	0		12	0.9	48	13	135

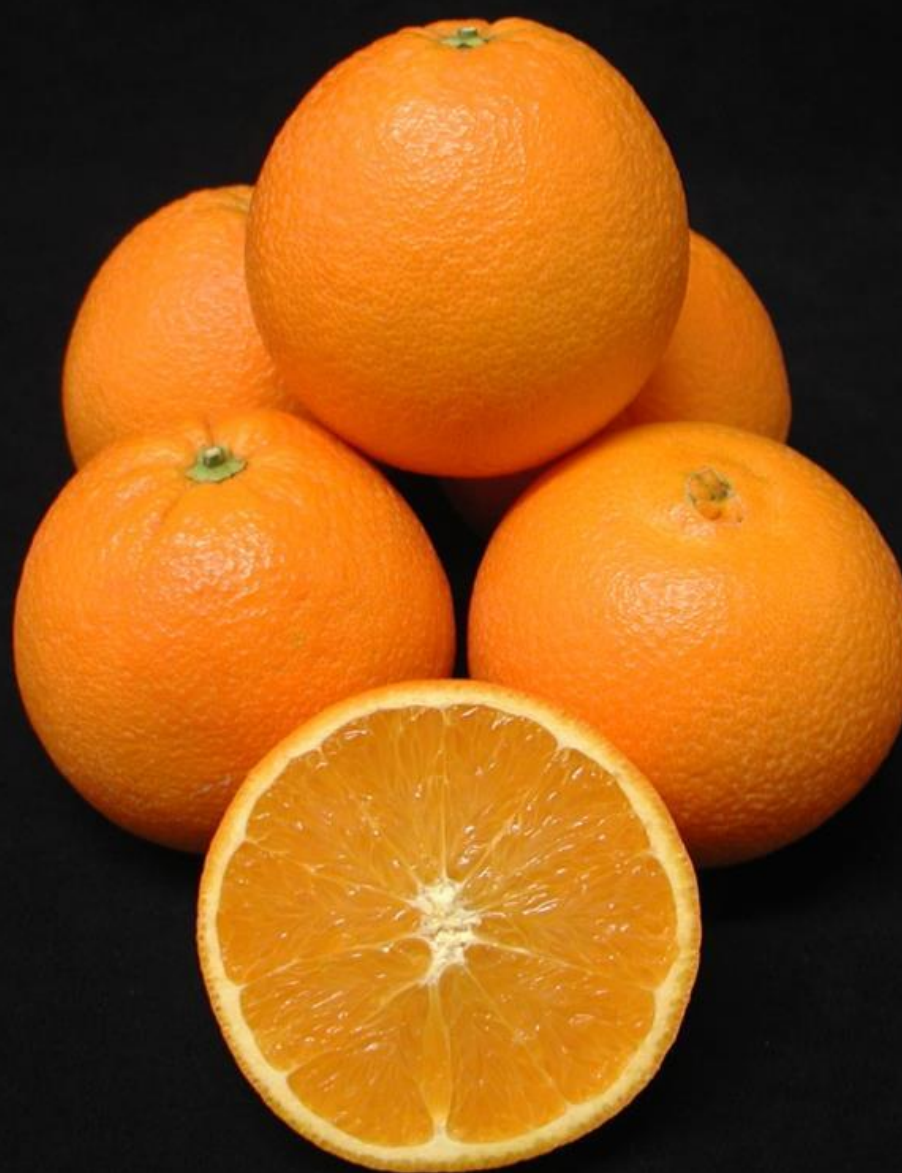
# Cambria

2 years' data



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit	Brix°	Acid %	Juice %	B:A Ratio	BrimA
Cambria	August	70	4	0	10.5	0.95	43	11.5	115

# Glen Ora



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit	Brix°	Acid %	Juice %	B:A Ratio	BrimA
Glen Ora	August	81	4.3	0	11.2	0.9	50	12.8	125



## Early Sicily (C1867) mandarin

March 2020, Primefact 1732, First edition

Dave Monks and Graeme Sanderson, Research Horticulturists, Dareton



Figure 1. An Early Sicily (C1867) mandarin tree.



Figure 2. Early Sicily (C1867) mandarins.

### Estimated maturity period

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

### Origin

Early Sicily was bred in Italy and is a hybrid of Oroval clementine x tetraploid Tarocco orange. It has Plant Breeder's Rights (PBR) protection and is managed in Australia by the Australian Nurserymen's Fruit Improvement Company (ANFIC).

### Fruit quality

Table 1. Early Sicily fruit quality\* characteristics.

Skin	Easy peel, orange, slightly pebbled.
Average rind thickness (mm)	4.4
Internal quality	Highly palatable. Sweet, juicy. Blood orange taste characteristics increase with cool storage.
Average number of seeds	<1
Juice per cent (%)	52
*Brix	11.2
Acid per cent (%)	0.8
Brix:acid ratio	14.1
Average fruit weight (g)	214
Average fruit diameter (mm)	77

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

Google search for "nsw dpi citrus" results in a link to the NSW Department of Primary Industries website. The search results show approximately 119,000 results in 0.40 seconds. The top result is titled "Citrus - NSW Department of Primary Industries" and describes the DPI's role in citrus research and extension in Australia.

A document table of contents with sections: "Post harvest", "Rootstocks and varieties", "Rootstocks", and "Varieties". Under "Rootstocks", there is a link to "Selecting citrus rootstocks". Under "Varieties", there are links to "African Sunset mandarin", "Alkantara mandarin", "Bintangcheng No 2 orange", "Bintangcheng Renbin No 5 orange", and "C1829 mandarin".



	Maturity	Diameter (mm)	Rind (mm)	Seed/fruit	Brix°	Acid %	Juice %	B:A Ratio	BrimA
M4	Early April	50	1.3	0.3	12.5	0.77	48	16.3	156
Mojo (12)	Mid May	60	2.2	1.0	12.2	0.74	51	17	153
Kishu	Early May	45	1.3	0.0	11	0.72	37	15	134
Sugar Belle	Colour in May	62	2.4	5.5	13.5	1.6	53	8.6	120
88-2	Late May-June	64	3	0.1	12.5	0.7	48	17	155
Honeybee	June	69	2.2	1.9	11	0.8	50	14	130
M8	June	~70	2.2	~1	12	0.85	42	14	140
Daisy LS	June	72	3.2	0.9	11	1	48	14	125
Kinnow LS	Late Aug/Sept→?	57	2.3	1	12-15	0.8-1.2	50-55	13?	145-165

Data recorded from top worked Valencia orange trees on Citrange rootstock at Dareton Primary Industries Institute, SUNRAYSIA.



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Rayno	Late May-Jun	70	4	0		12	0.90-1	45	14	140
Palmer	Early June					12.5	0.95	49%	13.2	142
Witkrans	August	72	4.3	0		12	0.9	48	13	135
Cambria	August	70	4	0		10.5	0.95	43	11.5	115
Glen Ora	August	81	4.3	0		11.2	0.9	50	12.8	125

Data recorded from top worked Valencia orange trees on Citrange rootstock at Dareton Primary Industries Institute, SUNRAYSA.



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The logo for 'auscitrus' features the word in a lowercase, italicized sans-serif font. The letters 'aus' are colored in a vibrant lime green, while 'citrUS' is white. A stylized graphic of three leaves, one white and two green, is positioned above the 'i' in 'citrUS'.

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