

Managing citrus orchards with less water



Flower bud induction and initiation (mid May to July)

During this stage trees use ~ 6% of annual water requirements.

Moderate water stress at this time can increase flowering.



Flowering & Fruit set (mid September to October)

During this stage trees use ~10% of annual water requirements.

Water stress during this period can reduce fruit set and/or cause excessive fruitlet drop.



Fruit growth stage 1: cell division (November to December)

Over 60 per cent of fruit size is determined during cell division. Small fruit remaining after this stage will be small at harvest.

Trees use ~25% of annual water requirements in this period.

Water stress during cell division can cause **excessive fruitlet drop** and **reduce fruit size**. This is more severe when coupled with temperatures $>35^{\circ}$ C.



Fruit growth stage 2: cell expansion (January – April)

During this period trees use ~ 48% of annual water requirements.

The first few months of this stage is the critical time when fruit cells are expanding and final fruit size is determined. Avoid water stress here.

***** The best window for reducing watering is during late summer and autumn (March/April)*****



Fruit maturity (May onwards)

During this stage trees use ~10% per cent of annual water requirements.

Moderate water stress will have a minimal impact on fruit size but it may bring forward fruit maturity and reduce the shelf life of fruit.

The best strategy for reducing water use at this time is to slightly extend the time between irrigation intervals.



Citrus - Wokalup

Location	Wokalup		
Crop Name	Citrus [CITR]	= 4.4 ML	
Planted Date	N/A (Perennial)	= 0.91 ML	
Irrigation Period	1 Jan to 31 Dec	= 0.8 ML	
Irrigation Efficiency	1.2		

	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Vol (ML)	7.79	1.30	1.13	0.98	0.58	0.30	0.15	0.14	0.35	0.34	0.57	0.83	1.13

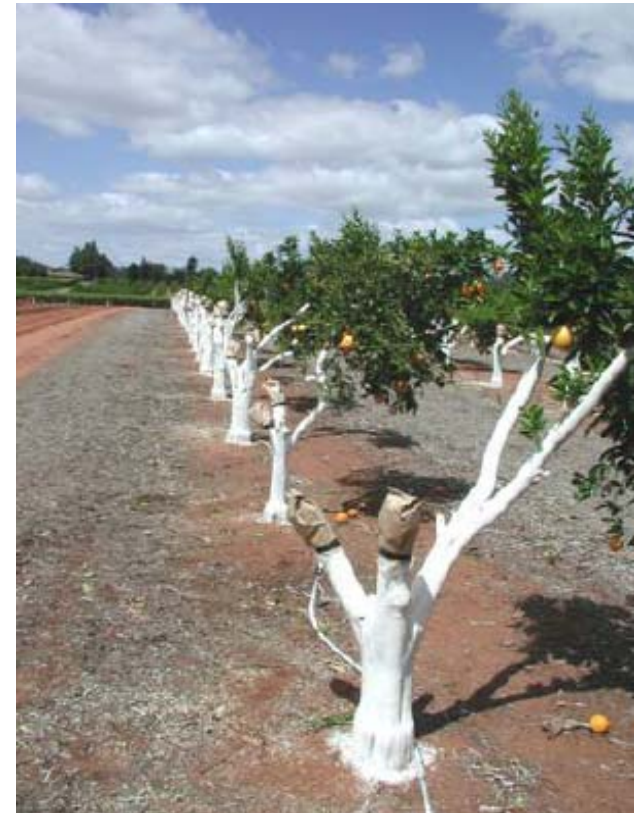
Peak daily water demand may be as high as 5.03 mm in January for this crop.

* Volume based on a Planted Area of 1 Ha and Irrigation Proportion of 0.6

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Water saving steps:

- Do a water budget
- Improve irrigation efficiency
- Install irrigation scheduling devices
- Reduce transpiration (kaolin clay spray)
- Mulch the wetted strip
- Only irrigate the wetted strip
- Reduce crop load
- Reduce canopy



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