

Water for Profit

BENCHMARK – IRRIGATING HIGH CHILL STONE FRUIT



WATERFORPROFIT

Benchmarking can be an effective way to identify opportunities for improved management. While benchmarking can be conducted on any area of your farming operations, this sheet provides a basis for your irrigation performance.

Crop specifics

Stone fruit are deep rooted trees with the majority of soil moisture extraction occurring in the upper 50 cm of the soil profile. Adequate moisture is required from blossoming to stone hardening. After the stone hardens, the growth of the fruit slows. Reducing the moisture during this period can limit shoot growth and should have no adverse effects on fruit size. Fruit will start to increase in size rapidly approximately six to eight weeks prior to harvest.

Approximately 70 - 80 percent of the total fruit growth occurs during this period and adequate moisture is critical at this period.

Irrigations can be reduced after harvest to encourage shoot growth for the next season. Excessive shoot growth after harvest, however, will lead to large amounts of vegetation and too little shoot growth will lead to poor yield next season. Stone fruit is sensitive to soil salinity with yield reduction occurring when soil water electrical conductivities (EC_{se}) are greater than 1.5-1.6 dS/m.

Crop benchmarks

The total crop water requirement is 7 - 8 ML/ha with the total irrigation requirement 2 - 4 ML/ha. Yields vary with orchard layouts but yields between 10 - 30 t/ha have been recorded.

The table on this sheet summarises the water use benchmarks recorded.

Best practice guidelines

- Ensure the irrigation system has the capacity to meet the seasonal and peak water requirements. Regular maintenance and performance evaluations should be conducted.

- A monitoring program should be used to schedule the timing of irrigations and the volume of water to be applied. Drainage of irrigation water past the active root zone is a common problem in the Granite Belt region.
- Uniformity of application systems is critical in ensuring optimal yields from all trees.
- The critical tensiometer value for stone fruit is approximately 20 kPa during early season and pre-harvest irrigations. The critical tensiometer value can be increased to around 40 kPa from stone hardening until six weeks prior to harvest
- Organic mulching can reduce water requirements substantially
- Water savings of up to 30 percent over the season have been found where trees are under netting.
- Efficient crop water use and high yield potentials can only be achieved if other agronomic factors such as nutrition, disease and pest management are also optimised.

Yields of stonefruit compared to total water applied

	Total water applied (ML/ha)	Marketable yield (t/ha)
Range	6-9	10-22
Average	7.5	16.3

Data reported has been obtained from research reports produced by the DPI and Agriculture Victoria and is gratefully acknowledged.

For more details contact Growcom on 07 3620 3844.

Disclaimer: This information is provided as a reference tool only. Seek professional advice for irrigation specifics.

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Queensland Government

