

Water for Profit

BENCHMARK – IRRIGATING BEETROOT IN SOUTH QUEENSLAND



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

Beetroot is a shallow rooted crop that extracts approximately 60 percent of its moisture requirements from the top 20 cm of the soil profile and 80 - 85 percent of its required moisture from the top 30 cm. It is salt tolerant and can handle electrical conductivities (EC_{se}) of soil water up to 4.0 dS/m without suffering yield losses. Beetroot is more sensitive to salt during establishment than at any other time during their season and the EC_{se} should be less than 3.0 dS/m.

Under irrigation of beetroot decreases yields due to moisture stress while over irrigation can cause reduced yields due to disease problems including Pythium and Rhizoctonia and boron deficiency that cause "pitting".

Crop benchmarks

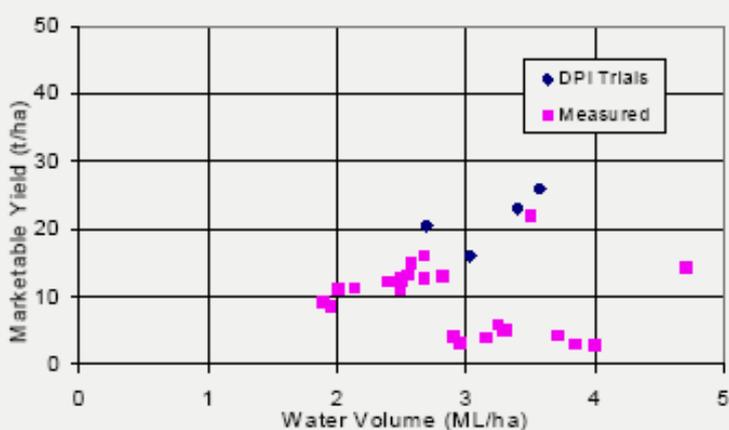
The total crop water requirement for beetroot is 2.5 - 3.5 ML/ha per season with a total irrigation requirement of approximately 2.2 - 3.0 ML/ha, allowing for inefficiencies and drainage losses. This should produce a crop yield of approximately 16 - 24 t/ha for baby beets and 30 - 40 t/ha for slicing beetroot.

Best practice guidelines

- Ensure the irrigation system has the capacity to meet seasonal and peak water requirements. Regular maintenance and performance evaluations should be conducted.
- Uniformity of application systems is critical in machine harvested crops. Uneven application of water will lead to yield variations in the field and wastage of water and nutrients past the active root zone.

- Adequate soil moisture should be maintained during plant establishment to ensure a uniform plant stand.
- 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.
- A monitoring program should be used to schedule both the timing of irrigations and the volume of water to be applied.
- For overhead systems, irrigations should be applied when the soil suction reaches a maximum of 40 - 50 kPa. Lower suction values should be used during periods of high water demand.
- Yield variations occur naturally due to poor quality seed and variable germination rates.

Yields of beetroot compared to total water applied



Best practice information has been obtained from on-farm trials and DPI research reports 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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