

Water for Profit

BENCHMARK – IRRIGATING BRASSICA IN SOUTH QUEENSLAND



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

Brassica plants are a shallow rooted crop and are susceptible to water stress during plant establishment (first month) and head development (month prior to harvest). Brassica get 85 percent of their water from the upper 35 cm of the soil profile so an irrigation system that applies water uniformly is essential to eliminate water and nutrient wastage.

Soil water with an electrical conductivity (EC_{se}) higher than 1.7 dS/m can cause yield reductions.

Common problems with under watering are poor establishment, reduced head size and weight, poor quality and, with warm weather, tip burn. Over watering can cause nutrient deficiencies and can increase the risk of diseases such as black rot and club root.

Crop benchmarks

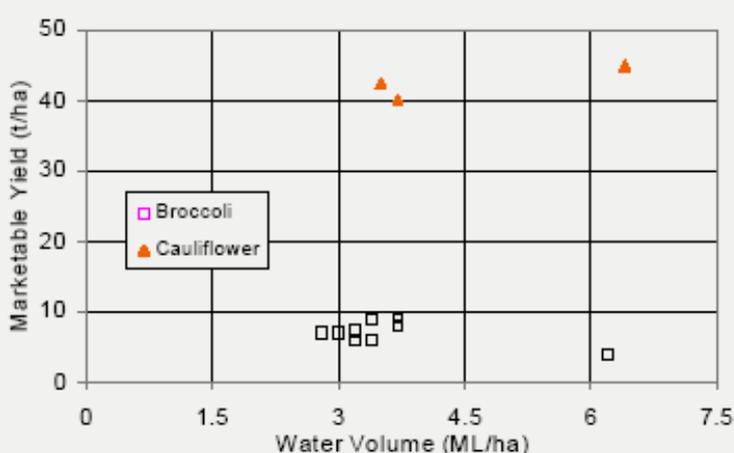
The total crop water requirement is 2.5 - 4 ML/ha per season with an irrigation requirement of 2.5-3 ML/ha for broccoli and 3 - 3.5 ML/ha for cauliflowers. Best practice yield is 7 - 8 t/ha for broccoli and 40 t/ha for cauliflower.

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.
- Adequate soil moisture is required during plant establishment to ensure a uniform plant stand.
- A monitoring program should be used to schedule both the timing of irrigations and the volume of water to be applied.

- If using tensiometers in the monitoring program, they should be installed as a pair at 15 cm and 45 cm depths. For overhead sprinkler systems, irrigation should be applied when the 15 cm tensiometer reaches 30 - 40 kPa for broccoli and cauliflower and 40 - 60 kPa for cabbage. Lower values should be used during periods of high evaporative demand.
- Head size and weight will vary and the number of harvests will increase if an irrigation system with poor uniformity is used.
- 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 brassica compared to total water applied



Best practice information has been obtained from on farm trials and DPI Gattton 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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Queensland Government

