

Water for Profit

BENCHMARK – IRRIGATING TOMATOES IN NORTH 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

Tomatoes are sensitive to water stress during flowering and fruit fill. Irrigation management can be used to minimise blossom end rot and improve fruit evenness and size. Keeping the soil waterlogged will prevent adequate calcium uptake and lead to plant stress and associated problems.

The active root zone for tomatoes is between 0 - 60 cm with the majority of plant water use and nutrient uptake coming from the top 40 cm. Soil moisture below 60 cm is normally considered a moisture reserve for tomatoes. Dry down of the 60 cm zone is an indicator of stress in tomatoes and leads to small fruit, poor fruit set and blossom end rot.

Tomatoes are normally grown under plastic mulch using trickle irrigation. Two trickle lines per bed are often used to meet water demand on poorer soils. This encourages a bigger wetted area and root zone for periods of peak water use.

Crop benchmarks

The total crop water requirement is 4 - 6 ML/ha per season with the irrigation requirement of 2.5 - 5 ML/ha, depending on rainfall and allowing for inefficiencies and drainage loss.

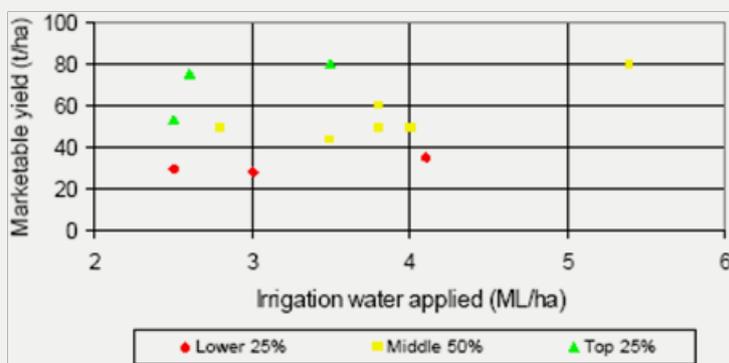
Best practice marketable yield is in the order of 30 - 80 t/ha depending on plant spacings, bed spacings and season (autumn or spring).

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 soil moisture monitoring program should be used to schedule the timing of irrigations and the volume of water to be applied. Growers using tensiometers and capacitance probes have increased yields from implementing accurate irrigation scheduling.
- If used, tensiometers should be installed at depths of 250 and 450 mm. Irrigations should normally occur when the shallow tensiometer reaches 30 - 40 kPa. Lower values (25 - 35 kPa) should be used during fruit fill to minimise stress.
- It is important to encourage root system development in the early stages of crop growth. This will enable fruit to fill out properly and maximise quality during periods of peak water demand.
- 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 tomatoes compared to irrigation water applied (2002 survey data)



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

