

# Water for Profit

## BENCHMARK – IRRIGATING BANANAS IN NORTH QUEENSLAND



WATERFORPROFIT

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

### Crop specifics

Banana plants require careful water management. Under-watering can result in significantly reduced yields, poor fruit quality and sizing. Most banana plants are irrigated using micro-sprinklers, either under tree or full orchard floor. Trickle tape is also quite common with two lines of tape per plant row.

Bananas have shallow and inefficient root systems. Root system depth can range from 30 to 80 cm depending on soil and irrigation type. About 80 percent of the water extracted by bananas comes from the top 30 cm of soil. Hence, their shallow root system rarely requires irrigation past 50 cm depth.

### Crop benchmarks

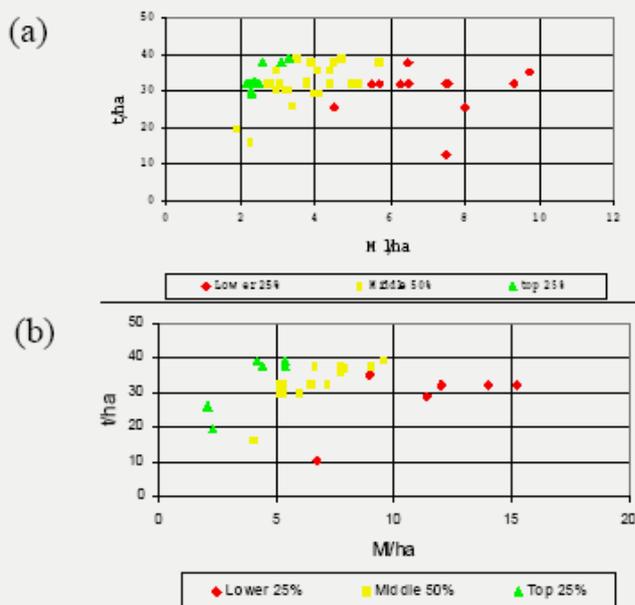
Total applied irrigation varies between wet and dry years in North Queensland. A current industry survey provided the following data on irrigation volumes applied and yields. The total crop water requirement for drip and micro irrigated bananas varies from 2 - 15 ML/ha per year. Best practice yield is in the order of 10 - 40 t/ha (1000-4000 cartons). For overhead irrigation the following can be used as a guide. Survey results showed that application volumes ranged from 7.2 - 19.3 ML/ha and yields varied from 24 - 32 t/ha.

### Best practice guidelines

- A soil moisture monitoring program should be used to schedule both the timing of irrigations and the volume of water to be applied.
- Growers using tensiometers and capacitance probes have increased yields from implementing irrigation scheduling. If used, tensiometers should be installed at a depth of 200 and 450 mm for accurate readings. Irrigation should occur when the shallow tensiometer reads 25 - 40 kPa.

- Plant crop and rejuvenated cut out stands require frequent watering during establishment to ensure high survival rates and growth of ratoon suckers. Best yields and banana size/consistency have been found by keeping the soil moist throughout the year.
- Ensure irrigation system has the capacity to meet seasonal and peak water requirements, regular maintenance and performance evaluations should be conducted.
- 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 bananas under (a) drip and (b) microsprinkler compared to water volume (irrigation) applied



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

