

Water for Profit

BENCHMARK – IRRIGATING BANANAS



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. Approximately 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

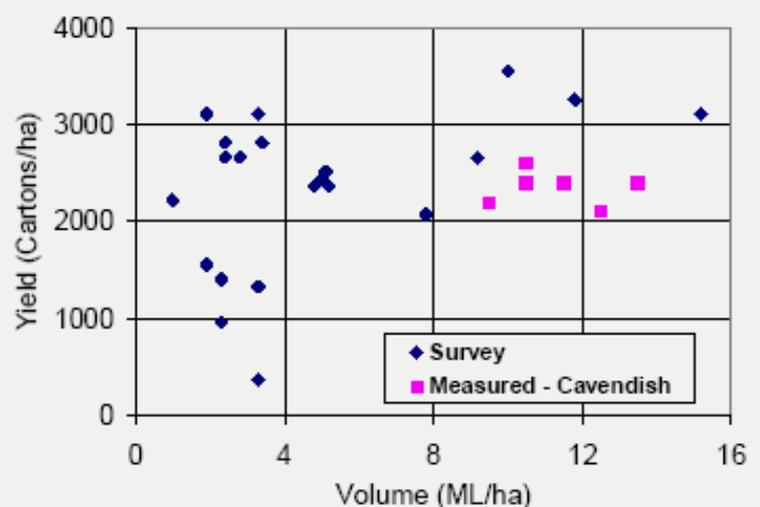
The total crop water requirement is generally between 8 - 10 ML/ha per year for mature plants. Rainfall in the lower Burnett can be irregular and intense with effective rainfall of only 3 - 5 ML most years. Hence, the irrigation requirement for bananas in this region is approximately 5 - 6 ML/ha/yr, allowing for inefficiencies and drainage losses. Best practice yield is in the order of 30 - 40 t/ha (2400 - 2900 cartons) for Cavendish and 10 t/ha (800 cartons) for Ladyfingers.

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 accurate 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.

- A layer of mulch is important to reduce evaporation and increase soil organic matter.
- 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 compared to total water applied (irrigation and effective rainfall)



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.

A Growcom project conducted in collaboration with the Department of Primary Industries and the National Centre for Engineering in Agriculture with funding provided by the Queensland Government's Rural Water Use Efficiency Initiative.

