Water for Profit

BENCHMARK – IRRIGATING SWEET POTATO

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

The profitability of sweet potato production can be heavily influenced by irrigation management. They are especially sensitive to water stress during tuber initiation and bulking up.

Appropriate irrigation application during tuber initiation is vital as water stress during this time will result in fewer tubers per vine being produced. Water stress during sweet potato bulking can also cause problems with tuber size, quality and crop evenness as well as making the crop more susceptible to common problems such as growth cracks and deformities.

Sweet potatoes have a shallow root system. Approximately 80 percent of the water is extracted from the upper 30 cm of soil depending on irrigation system (e.g. sprinkler or trickle) and management.

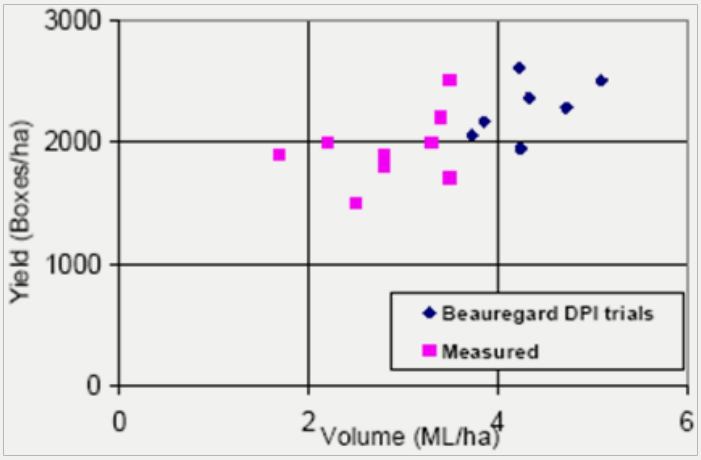
Crop benchmarks

The total crop water requirement is 2.5 - 3.0 ML/ha per season with the irrigation requirement of approximately 3.0 ML/ha, allowing for inefficiencies and drainage loss. Best practice yield is in the order of 2000 - 2800 boxes/ha for 18 kg boxes (35 - 50 t/ha) with variation mainly attributed to vine quality and seasonal conditions.

Best practice guidelines

- Ensure irrigation system has the capacity to meet seasonal and peak water requirements, regular maintenance and performance evaluations should be conducted.
- 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 by improved irrigation scheduling.
- Plants are propagated using cuttings so they must be kept moist until roots are established.
- If used, tensiometers should be installed at depths of 250 and 450 mm. Irrigations should be applied when the shallow tensiometer reads 40 - 60 kPa.
- Lower tensiometer numbers (30 - 40 kPa for the shallow tensiometer) should be used during tuber initiation (first 40 days).
- Sweet potatoes prefer drier soil during bulking up and prior to harvest. This has been shown to improve colour/ quality of produce at harvest.
- Efficient crop water use and high yield potentials can only be achieved if the agronomic factors such as nutrition, disease and pest management are also optimised.

Yields of sweet potato compared to total water applied



For more details contact Growcom on 07 3620 3844.

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.

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