Water for Profit

BENCHMARK – IRRIGATING SWEET CORN

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

Sweet corn can handle hot and dry climates if suitable soil moisture is available.

Approximately 60 percent of its moisture requirements are extracted from the top 20 cm of the soil profile and 80 percent from the top 40 cm.

Sweet corn is relatively tolerant to moisture deficits during the vegetative and ripening periods of growth. However, water stress during tasselling and silking may lead to low yields. Water stress during cob development will reduce the grain size and subsequent yields. Waterlogging should also be avoided during tasselling, silking and cob development as it can cut yields by up to 50 percent. During periods of water shortages, water may be saved during the vegetative and ripening periods. Sweet corn is moderately sensitive to salinity. Yields will be affected when the electrical conductivity (ECse) of the soil water exceeds 1.7 dS/m.

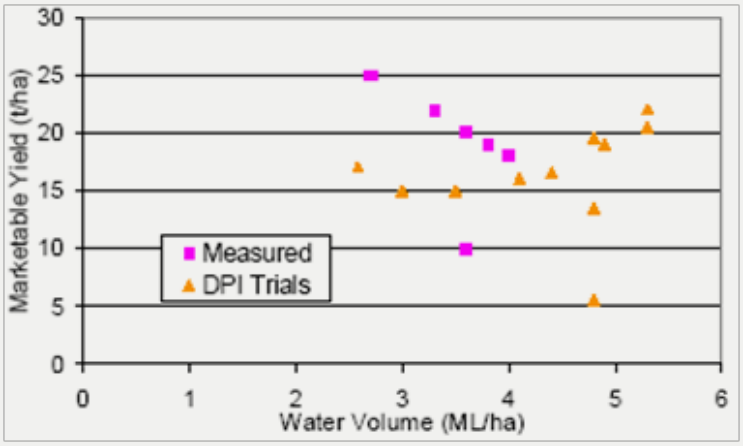
Crop benchmarks

The total crop water use requirement is approximately 3.4 - 3.7 ML/ha per season with an irrigation requirement of approximately 3.4 - 4.0 ML/ha, allowing for inefficiencies and drainage loss. Best practice yield should be approximately 15 - 20 t/ha.

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 monitoring program should be used to schedule both the timing of irrigations and the volume of water to be applied.
- Adequate soil moisture should be maintained during plant establishment, tasselling, silking and cob development. Water stress during these periods can be disastrous for yields.
- For overhead systems, irrigations should be applied when the soil suction reaches a maximum of approximately 50 - 60 kPa pre-silking and 40 - 50 kPa during the pollination and cob development phases. For drip systems, irrigations should be applied when the soil suction reaches a maximum of 20 - 25 kPa resulting in applications of smaller amounts and greater frequency than overhead systems.
- Uniformity of application systems is important for machine harvested crops.
- 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 sweet potato compared to total water applied



Best practice information has been obtained from on-farm trials and DPI research reports and is gratefully acknowledged.

For more details contact Growcom on 07 3620 3844.

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