# Water for Profit

## BENCHMARK – IRRIGATING LYCHEES

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

Lychees are not considered a drought hardy plant. Lychee growing is conducted predominantly in the wet tropical areas including Sarina, Mackay, Cardwell and Ingham. However, some high quality fruit is produced in the dry tropics at Ayr and Rollingstone. In these areas, wet monsoonal conditions stimulate strong vegetative growth after fruit harvest with a cool dry winter ideal to encourage plant dormancy prior to spring flowering.

The active root zone in lychees is between 0 - 70 cm with a majority of plant water use and nutrient uptake coming from the feeder roots in the top 60 cm of the soil profile. Due to prolonged dry periods in late winter and early spring, irrigation is essential in most years to set a good crop of lychees. Irrigation systems used by the industry include double row drip and under tree mini-sprinklers. Crop water stress from dry conditions can cause a reduction in yields and fruit size and quality. Stress followed by excessive wetting from rain may lead to fruit splitting.

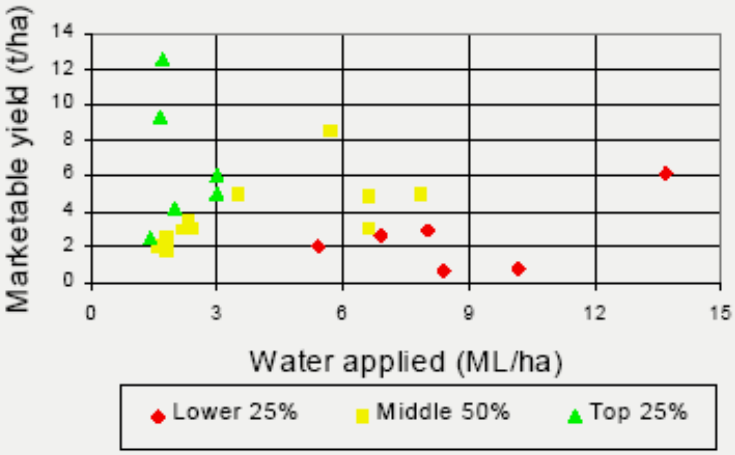
### Crop benchmarks

The volume of irrigation applied varies considerably between wet and dry years. A survey of growers in 2002 found that lychee yields varied from 1.8 - 12 t/ha (approximately 300 - 2500 boxes/ha). Best practice irrigators produced yields of 6 - 12 t/ha with irrigated water applications of less than 3 ML/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 the timing of irrigations and the volume of water to be applied. Soil moisture monitoring and irrigation scheduling can improve fruit size and crop yields by up to 30 percent. Fruit splitting has been reduced by monitoring soil moisture during harvest.
- Irrigation is essential to maintain crop growth during vegetative periods and to set and hold a viable crop during flowering and fruit set. Mini-sprinklers may be used to water in dry/granular fertilisers.
- Drip irrigation is highly effective in heavier soils where a wider wetting pattern is achieved. Pulse irrigation has been used on lighter soils to gain a wider wetted profile within the tree row.
- 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. Automated fertigation, scheduling and maintenance (chlorine and/or acid) systems are widely used.

### Yields of lychees compared to irrigated water 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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