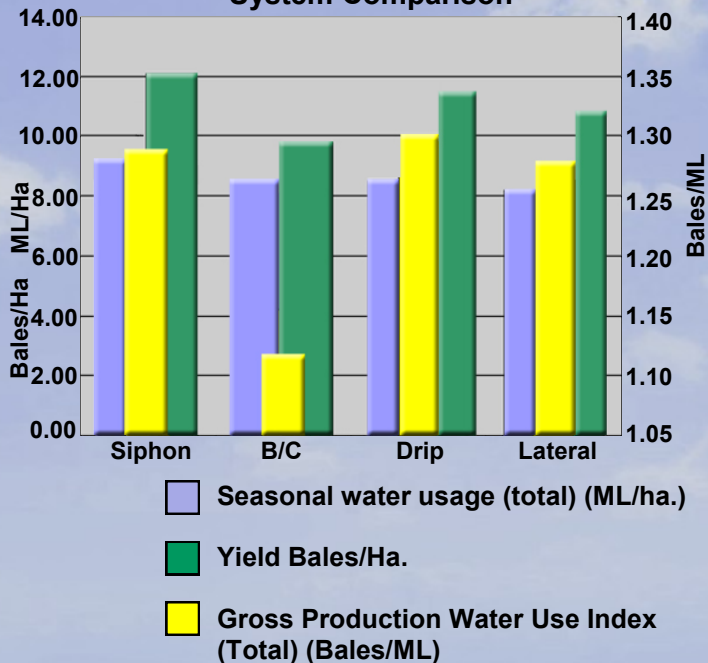


System Comparison



Significant water savings can be made from simple alterations to furrow irrigation systems. These alterations often require minimal capital outlay and can significantly increase water use efficiency. For more information contact Gwydir Valley Irrigators Association Inc.

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Australian Government
National Water Commission
Raising National Water Standards Program

"Improving irrigation in the Australian cotton industry"

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Furrow/Siphon Irrigation



This information has been prepared by the Gwydir Valley Irrigators Association (GVIA) to help growers make more educated decisions on their irrigation practices and in turn maximise their productivity per megalitre.

GVIA aimed to provide accurate comparative information by conducting an on farm trial on the water use efficiencies of four relatively common irrigation systems used across Australia and around the world.

The four systems that were trialed were lateral move, bankless channel, drip irrigation and furrow/siphon irrigation. Furrow/siphon irrigation was also recorded as a control on which to benchmark results.

The trials were undertaken in conjunction with Sundown Pastoral Company at "Keytah" 45km west of Moree NSW.



For a full report on trial results contact:

Gwydir Valley Irrigators Association Inc.

Chairman: Ian Cush CEO: Michael Murray

Ph 02 67521399 Mob 0427 521399
gvia@gvia.org.au www.gvia.org.au

Furrow / Siphon / K28:

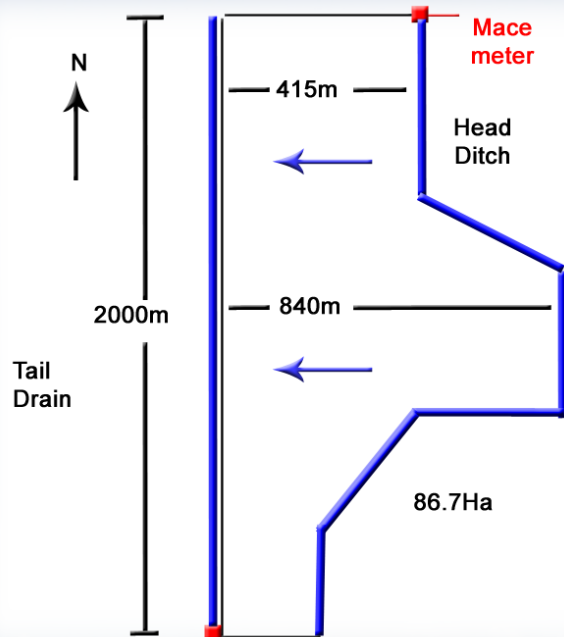
Yielding over 12bales/ha the furrow field had a solid season. It is a good representation of other furrow systems in the Gwydir Valley. Having a mixture of longer and shorter runs helped represent a wider variety of current irrigation farms.

GVIA are happy this system provided strong comparative results.

Technical Information:

| | |
|----------------------------|-------------------------------------|
| Area: | 86.7 Ha |
| Plant spacing: | 30" |
| Pressurizing cost: | N/A |
| Installation cost: | \$800 - \$1200/Ha |
| Monitoring method: | Total water on less total water off |
| Sowing date: | 1/10/2009 |
| Picking date: | 27/4/2010 |
| Applied water per hectare: | 5.22 ML/Ha |
| Yield: | 12.06 bales/Ha |

Field Layout:



In-season Considerations:

Experience:

- For 20+ years the 'Keytah' team has been perfecting furrow irrigation to maximize cotton production with water available.
- They have become very efficient - worth considering when comparing these results with the other three systems.

Germination:

- Early season issues with germination may be a result of sowing seed too deep.
- By mid-January crop filled out well and this is reflected in the strong yield.

Water measurement:

- Mace meter on field K29 broke down at start of season.
- All water off-field measured with flume meters.
- Each irrigation five flume readings taken on varying rows of different lengths, including a wheel track in each irrigation

Defoliation:

- Field defoliated in two areas – K28 South & K28 North (due to plant development).
- Yields combined and divided by total hectares to give yield/ha figure.

Irrigation water dates and water applied:

| | Water On (ML) | Water Off (ML) | TOTAL ML | TOTAL ML / HA |
|-------------------------|---------------|----------------|---------------|---------------|
| 23/11/09 | 101.9 | 37 | 64.9 | 0.75 |
| 13/12/09 | 90.46 | 36 | 54.46 | 0.63 |
| 14/1/10 | 90.5 | 29 | 61.5 | 0.71 |
| 22/1/10 | 94.3 | 31.5 | 62.8 | 0.72 |
| 29/1/10 | 95.35 | 30.5 | 64.85 | 0.75 |
| 11/2/10 | 96.8 | 26.2 | 70.6 | 0.81 |
| 23/2/10 | 100.8 | 27 | 73.8 | 0.85 |
| Total for season | | | 452.91 | 5.22 |

