

Numbers prove Rob's efficiency push

CASE STUDY II...

WHO: Rob and Anne and Craig and Jillian Bellert.

WHERE: Norwin, Darling Downs Qld

CROPS: cotton, sorghum with winter barley.

AREA: 530 hectares, Craig runs a 265 hectare block nearby.

EFFICIENCY PAYOFF: A lateral move irrigator installed to realise labour savings has also delivered a yield improvement and water saving over adjacent furrow irrigation.

They're back-of-the-envelope calculations but a new lateral move irrigator has already achieved its payoff in year one, according to its owners, Rob, Anne and Craig Bellert, of the Darling Downs Norwin district.

Using data obtained from actual field measurements by Rob's consultant Jamie Innes of Landmark Pittsworth, the new lateral move irrigator working in a 380 metre-wide field and with a two km run (74 hectare effective area) achieved an Irrigation Water Use Index of 2.78 bales/ML, while the adjacent flood irrigated field realised an IWUI of 1.41 bales/ML — a 50 per cent boost.

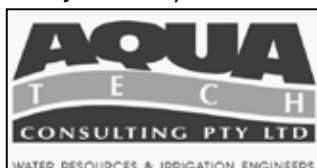
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Rainfall during the year was 443 mm — although values for soil moisture before and after the season were not taken.

The prime motivation for investing in a lateral irrigator, according to Rob, was about family succession and family farm survival.

"The home block was not large enough to sustain two families, so we bought a nearby irrigation block plus a dryland block for my son Craig to farm, so for me to continue growing cotton, a labour saving approach became vital," Rob said. "Labour saving was the initial motivation for the decision.

"When I realised that a two-kilometre run could be achieved by simply changing the direction of water flow, the lateral irrigator idea really took off. It's amazing how years of irrigating one way on your farm blocks your mind to new directions."

He agrees changing water flow 90 degrees to create a two kilometre run was real lateral thought.

The new irrigator runs across a series of fields, all of which have differing histories and has resulted in variable yields in the first year. Yields were from 8.1 bales per hectare to 11.71 bales per hectare on the 74 hectare area.

So not only has Rob achieved the labour savings, the water use efficiency and yield boosts have been the unexpected benefits.

"The adjacent 38 hectare flood irrigated field picked 244 bales (7.1 bales per hectare), while the lateral irrigated field of 74 hectares (9.72 bales per hectare) picked 720 bales," he said.

"That's 34 per cent more per hectare under lateral irrigation."

2006-07 SEASON

This year the Bellert's irrigated 55 hectares of cotton under their lateral irrigator and finished picking in May. Once again the lateral move irrigation system has proved hands down that it is more efficient at Norwin.

Rob said four and a half megalitres per hectare was put on through the lateral and approximately a third more on his furrow irrigated crop, which only yielded half that of the overhead system.

Both paddocks had the same sub-soil moisture at planting and there was zero in-crop rain. A bore pumping 38,000 gallons/hour feeds the lateral, while a 46,000 gallon/hour bore is used for the furrow irrigation.

Yet Rob said, even with the larger capacity bore feeding the flood system, timing was an issue that affected yield and one he avoided with the lateral system.

"We were restricted in our flood irrigation by the capacity of the bore to cover the ground," he said.

"But with the lateral irrigator we did six irrigations back to back on an eight day turn around and kept up with the crop's water needs.

"However this year we had less (55 hectares) under the lateral — any more and we would have been behind there too.

"If things weren't so dry and uncertain, we would definitely move toward more lateral irrigators. After two seasons, it has come up trumps both times."



Peter Bellert says the new lateral move irrigator achieved pay-off on year one.