

## Do you know what uneven irrigation can cost you?

Systems checks are essential for smarter irrigation

**Did you know?** Efficient farm practices that improve productivity and profitability also reduce greenhouse gas emissions.

### Smarter Irrigation for Profit

Recent work through the DairySA-managed Smarter Irrigation for Profit project has shown that production losses from uneven watering due to incorrect sprinkler uniformity can be \$15,980 annually.

Spring is a great time to tackle irrigation system maintenance. Irrigation problems are not always apparent during the cooler times of year, but once summer heat arrives, your system will be providing a lifeline to your plants.

The 'catch can' test to identify uneven watering was done on a 40 hectare pivot south of Mount Gambier with results showing over-watering on the first 60 metres of the pivot and another section in the middle, totalling 5.64 hectares.

Under-watering was evident on the end 70 metres of the pivot (14.5 hectares), so only half the total pivot area was watered somewhere near correctly, which in the 2015/16 irrigation year (including required drainage for salt management) was 7.52ML/ha.

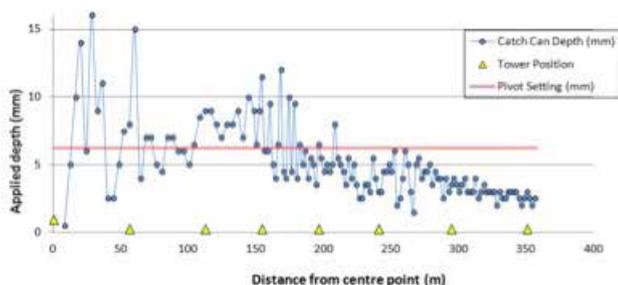


Image acknowledgement: Tim Powell, Integrated Irrigation

This is how the losses stack up:

	Over-watered area (5.6ha)	Under-watered area (14.5ha)
ML of water wasted	16.51ML	-
ML of extra water needed	-	40.34ML
% water wasted or needed compared to the pivot settings	39%	37%
Likely production loss due to over or under watering (conservative)	25%	25%
Lost production Oct–April (212 days) if assumed production should be 75kg/ha/day	22.3 tons	57.6 tons
Lost production if feed valued at \$200/ton	\$4,460	\$11,520
ML/ha water applied	10.45ML/ha	4.73ML/ha

Total **conservative production losses** for this pivot are estimated at **\$15,980 per year** in feed value.





### Four tips for wisely using your water allocation

#### At the start of the season:

- › Do the sums and budget your water use – use the Water Use Efficiency Tool (available at <http://www.dairysa.com.au/soil-water-more.aspx> )
- › Check your infrastructure – get the water distribution uniformity correct. If you are struggling for time remember that your irrigation supplier can conduct system checks and catch can tests on your behalf.

#### During the irrigation season:

- › Monitor water use – know your water budget, make sure you have enough for the season
- › Monitor soil moisture – measure it, keep it right.

*The cost of being wrong can cost you anywhere from \$2,240–\$4,480 per lap in excess water usage charges.*

### Irrigation system maintenance – pre-start checks

Service power units and before starting up check electrical systems, pumps, piping and intakes, pivot gearboxes and drivelines. It also pays to inspect the anchor bolts and grease the pivot point.

Operate the power unit and pumping system to fill pipes and bring centre pivot up to operating pressure.

Check pressures at:

- › the pump
- › pivot point
- › end of pivot.

#### Always check pressure with pivot parked in same spot.

With pivot fully operational:

- › Check the system flow rate and compare to design flow rate on sprinkler chart
- › Verify flow meter is working properly
- › Walk the pivot looking for malfunctioning sprinklers, including clogs, worn impact plates, missing sprinklers, etc.
- › If possible, verify each sprinkler matches the sprinkler specified in the sprinkler chart
- › Consider performing a ‘catch can’ test to evaluate water application uniformity
- › Visually verify regulators are working properly
- › Replace missing or malfunctioning regulators
- › Take note of any leaks anywhere in the system and repair
- › Verify centre pivot operates with towers in proper alignment
- › Test safety circuits to verify proper performance
- › Check tires for wear, cracking, low pressure, etc.
- › Make sure all lugs are tight
- › Test the control panel settings for auto-stop, auto-reverse and end gun coverage areas.

#### Make sure end gun watering angles are set properly.

### For further information on the Smarter Irrigation project contact:

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