



PARTNER UPDATE



SA DISCOVERY FARMS

Researching innovative solutions to future climate challenges
for South Australian cropping, livestock and mixed farms

PROJECT TITLE: Water quality in extensive sheep grazing systems

PROJECT LEAD: SARDI

INDUSTRY PARTNERS: MacKillop Farm Management Group, Agricultural Innovation & Research Eyre Peninsula (AIR EP), Barossa Improved Grazing Group (BIGG), Hydrosmart

Water quality is a major driver of livestock performance. Poor water quality can reduce intake with negative impacts on growth, wool production, reproduction, digestion, regulation of body temperature and immune function.

SARDI Senior Research Officer, Dr Alyce Lowe is leading a project investigating how water quality, water source and water treatment technologies impact livestock production, health and behaviour. The project will generate comparable water quality, health and production data across three climate regions to assess the influence of water treatment technologies under real world grazing conditions.

Trial sites have been established at SA Discovery Farms at Turretfield, Minnipa and Struan. Comprehensive water quality analysis at each site has recorded key indicators including total dissolved salts, electrical conductivity and pH.

The Hydrosmart “shuttle” – a solar powered water conditioning unit has been installed on water troughs at each site. Mobs of ewes at each site were randomly allocated into two treatment groups – Hydrosmart treated water or untreated existing farm water.

Preliminary live weight (LW), body condition score (BCS) and average daily gain (ADG) measurements were collected from livestock when each site was established. When measurements were taken again three months later, animals with access to Hydrosmart shuttle treated water generally had higher LW and slightly higher BCS and ADG.

On-farm validation of Hydrosmart units will be conducted on two producer sites in each region commencing in mid to late 2026 and run for 12 months.

Funding from Landscape SA is supporting the intensive monitoring technologies, including radio frequency EID race readers for animal trough visitation data, temperature loggers for climate and in trough water temperature monitoring, and 4G solar powered cameras to monitor water usage and livestock interactions at each site.



The Hydrosmart water conditioning unit installed on a trough at SA Discovery Farm at Struan (left) and SARDI Senior Research Officer Bianca Agenbag taking livestock measurements (right).