



Water Quality for Livestock

Why it Matters

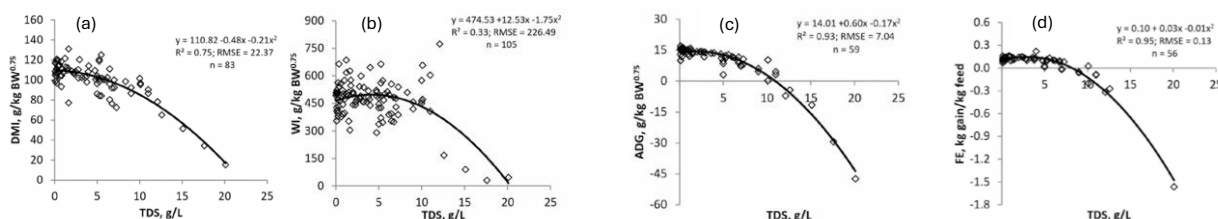
- Water quality is a major driver of livestock performance
- Poor-quality water reduces intake, affecting growth, wool production, reproduction, digestion, thermoregulation and immune function
- Livestock are particularly sensitive to salinity, sulphates, taste, odour, stagnation and contamination

'Good' vs 'Poor' Water

- Poor water: warm, stagnant, dusty, contaminated, high sediment or organic load, blue-green algae present
- Good water: fresh, cool, clean, low sediment and free from algae and contaminants

Key Indicators

- Total Dissolved Salts (TDS): measures actual salt load and is used diagnostically
- Electrical Conductivity (EC): provides a rapid estimate of salinity and is practical for routine monitoring
- Salinity is a key driver of livestock drinking behaviour
- High TDS water reduces dry matter intake (a), water intake (b), average daily gain (c) and feed efficiency (d)



López et al., 2021. A meta-analytical evaluation of the effects of high-salt water intake on beef cattle. *J Anim Sci*. 2021

Livestock	Total dissolved solids (mg/L)		
	No adverse effects expected	Livestock may initially be reluctant to drink or have some scouring, but should adapt without any production losses	- Production losses and decline in animal health and condition expected. - Livestock may tolerate for short periods of time if introduced gradually
Dry mature sheep ^a	0-4,000	4,000-10,000	10,000-13,000
Lambs ^b			5,000-10,000
Lactating ewes			3,800 ^c
Beef cattle ^a	0-4,000	4,000-5,000	5,000-10,000

^aAustralian New Zealand Guidelines for Fresh and Marine Water Quality 2023; ^bMaking More From Sheep. *Water Quality for Sheep*

^cAgriculture Victoria 2016. *Managing farm water supplies*



Water Quality for Livestock Long-Term Trial

SA Discovery Farms

- Research aim:** understand water quality effects on intake, behaviour, LW, BCS, ADG, reproduction and health

SA Discovery Farms

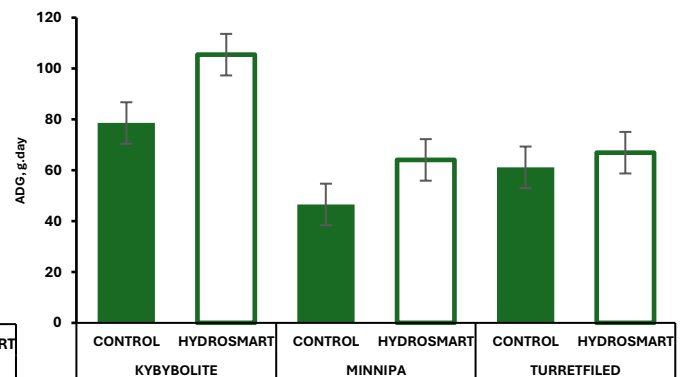
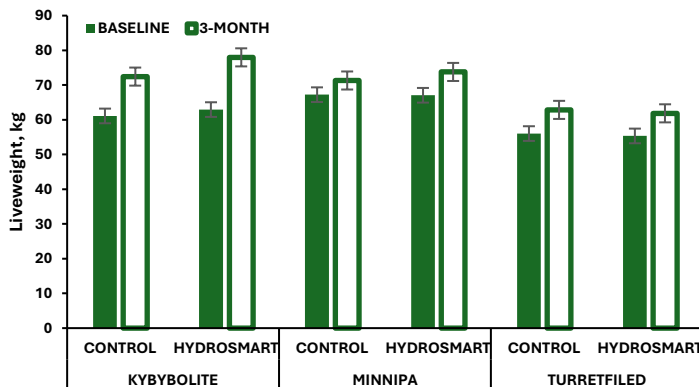
- Minnipa ($n = 193$ ewes)
- Turretfield ($n = 200$ ewes)
- Kybybolite (Struan) ($n = 231$ ewes)

Treatments

- Control: existing farm water, mains supply
- Hydrosmart “shuttle”: water conditioning unit installed on trough
- One replicate of each treatment

3- monthly Animal Measures

- LW, BCS
- Reproduction (pregnancy rate, marking and weaning rate)
- Water sampling (TDS, EC, pH,
- Health marker (blood sample subset $n = 20$ / treatment group)
- Trough visitation frequency



On-Farm Validation 2026 to Late 2027

- 2 producer sites per region
- High TDS values for Hydrosmart unit (suitable for bores TDS > 3000 mg/L)
- Aerator for water trough
- Data collection capabilities:
 - LW, BCS
 - Pregnancy scanning and conception rates
 - Known water quality
 - Marking and weaning rates
 - Paddocks to accommodate Ag tech
- Commence mid to late 2026 for 12 months

