

Water for Livestock

Fact Sheet series for the
Small Rural Landholder

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Issue

Many farming properties in southern Victoria rely heavily on rainfall runoff to fill surface dams which then are accessed by livestock for their daily water needs.

These dams were in some instances constructed many years ago and may over time have become unreliable water storages due to:

- livestock traffic degradation;
- sediment build up;
- faecal contamination;
- losses from seepage and evaporation;
- insufficient run-off from water catchments; and
- long term seasonal variability

Dam location

Farm dams are often located in open paddocks with little shelter from the winds and hot weather which leads to the loss of water through surface evaporation. A small dam 20 metres long by 20 metres wide has a surface area of 400 metres square. Over a couple of hot summer days 15mm of surface water could be lost from the dam which equates to approximately 6000 litres.

During the summer months when an adequate supply of good drinking quality water is critical, these levels of evaporation demonstrate that most of our water losses are to the atmosphere rather than from livestock consumption

Experience suggests that dams constructed across creeks and drainage lines, where livestock have direct access to water, will be contaminated. This results in polluted sediments entering our local streams and impacting on water quality across sub-catchments.

Water quality

Simple observations show that on hot days cattle will walk out into a dam to drink. This may be an attempt to cool down but is also possibly because the water on the edge of the dam is warm, muddy and heavily contaminated with faeces.

These conditions are further compounded by higher levels of nitrogen (N) and phosphorous (P) which leads to algal blooms forming around the water's edge. So it is not surprising that livestock are prepared to venture into the deeper water to drink.

Water / feed ratio

We also know that, particularly during the warmer months of the year, there is a direct correlation between how much an animal drinks and how much feed it will eat. In practical terms, if water quality is poor then cattle will only drink what they need to survive. The less they drink the less pasture, hay or silage they will consume. So you may have good quality feed available and be expecting your cattle to be gaining weight but instead they are losing weight or doing poorly. So, if you want your livestock to grow to their potential you need to provide clean drinking water.

How to improve water quality

The best approach is to allow livestock to have direct access to dams and install alternative reticulated system using pipes and troughs. Dams need to be fenced off and new vegetation, including local native species, planted above the dam as well as allowing grasses to grow back. This will have the effect of filtering incoming water to the dam reducing contaminated sediment and turbidity, thereby cleaning up the water and vastly improving water quality.

Don't plant trees on the dam bank as tree roots may interfere with the integrity of the dam wall causing leakage; however, they could be planted below the dam bank. By surrounding the dam with native vegetation this will also significantly reduce evaporation from the water's surface.

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Water for Livestock

COMMON GROUND



Key livestock / water considerations

- Livestock prefer to drink from troughs
- Poor water quality will reduce feed intake and performance
- Larger herds require larger trough capacity
- Stock reliant on trough water need to be monitored daily during summer months
- Trough height is important when sheep and cattle are sharing the water point
- Warm surface waters combined with faecal contamination leads to algae blooms



This project is supported by South Gippsland Landcare Network through funding from the Australian Government's National Landcare Programme.

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How to improve water quality

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If your dam capacity has substantially reduced over the years because of sediment and livestock traffic eroding the edges, it may be worth cleaning the dam out with an excavator prior to fencing and revegetating.

Installing a reticulated water supply

The type of system required for a property will depend on a number of factors including the topography, availability or not of power, property size and number of livestock.

This will likely require some specialist technical advice to determine such design aspects as type and size of pump, tank size for storage if required, polypipe diameter and trough capacity.

Modern plastic based products now available for installing a trough based livestock supply means it may well be within the capacity of some landholders do much of the installation work themselves.

Trough size is important because it needs to have sufficient capacity to supply the needs of the type of cattle and size of herd; and meet the maximum requirements during those peak summer periods.

Example: water demand calculation

For example beef cattle could require up to 100* litres per head on a hot dry summers day and could be drinking 25 litres at one time during the day so a herd of 20 may need 500 litres to be satisfied.

Where possible a header tank placed at an elevated location to most of the property will allow water to be pumped to the tank from where it can gravity feed to the troughs in each paddock.

Once moving to a trough based system it becomes more important to regularly check for faults or leaks to ensure cattle don't go without water.

A properly designed and installed trough system where dams are protected and enclosed with native vegetation can improve livestock production and health, enhance the biodiversity of natural ecosystems and significantly improve the visual amenity of the property.

Resource notes

Department of Primary Industries (2012). Managing Farm Water Supplies. Accessed at <http://www.depi.vic.gov.au/agriculture-and-food/farm-management/soil-and-water/water/farm-water-solutions/technical-resources/managing-farm-water-supplies-in-drought>



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