Livestock Watering Systems

Before making changes in a paddock, consider your whole farm livestock watering system.

Assess your current system:

- What does your current system look like? Are the pipes and water points in the right location?
- What is the current condition of the pipelines and water points? (Eg Corrosion, leaks, age of pipes, erosion etc)
- Map all existing pipelines, dams, tanks and troughs.

Plan your future system:

- Before replacing existing infrastructure map a new water system for the whole property
- Identify the urgent and highest priorities changes then work through implementing the new water system even if it takes a number of years.

Secure a reliable source of water. Are there any alternatives?

Determine how much water maybe required by a mob of stock at one point at one time.

Ensure the water supply / storage will meet maximum requirements:

- enough storage
- correct flow rates into troughs.

Check that the quality meets livestock requirements.

Get advice when selecting pumps, pipe diameters and pressure-rating's to achieve the desired flow rates.

Consider a cost effective system:

- use gravity reticulation to move water
- use central water points and portable systems
- use tanks that can service a number of troughs
- cost of water.

Use monitoring systems to reduce labour requirements of checking water systems.

Use accurate plans

Water Quality

Water quality is an important production driver and can seriously affect pasture intake and animal growth rates.

Water pH - Water for domestic stock used should be in the pH range of 6.5 to 8.5.

For livestock salinity upper limits and daily water requirements please refer in this information pack to the PIRSA Livestock Water Supplies FACT SHEET. This can also be found on line at:

http://www.pir.sa.gov.au/__data/assets/pdf_file/0008/37763/Livestock_Water_Supplies.pdf

Improving Feed Utilisation

Maximum use of pasture (feed) is the aim of grazing management. Management can over come factors that can restrict feed utilisation. Some factors are:

- areas un grazed
- selective grazing
- areas becoming eaten out around water points.

There are a number of strategies that can be used to get animals to better use paddock feed and the following focuses on livestock watering systems.

Setting up a Water Point

How much water is needed?

When estimating how much water should be allowed per animal the following factors must be considered:

- salinity of water
- feed type
- size of animal
- lactating animals
- species of stock
- walking distance
- time of year

Water Budgeting

When using the above consider spillage, evaporation, cleaning, and seepage from dams.

Tanks

Store water in a tank, not in the troughs. Have enough storage for peak demand for a number of days depending on how much risk you want to take. The water stays cooler and cleaner for the stock as well as a reserve supply in case of broken pipes.

Water Troughs

- Location is important for pasture utilisation:
    - centrally located in the paddock is ideal
    - on stony non arable areas (areas less prone to erosion)
    - half way along a fence line to get a natural grazing arc
    - the northern side of the paddock if most of the prevailing winds come from the south

- have the float valve end of the trough facing into the prevailing winds so the dirt and dry matter floats away to the outlet end
- have troughs raised off the ground so the dust can blow under
- 2.4m – 3.6m recommended trough size (don't need long troughs)
- have portable troughs and shift with mobs
- have portable float valves to move from trough to trough.

Flow Rate into the trough - *This is the key*

Mob size (DSE)	Suggested Flow rate L per second
1000-2000	1-1.5
2000-3000	1.5-2
3000-5000	2-3
Greater than 5000	3

Sheep prefer cool clean water

The importance of a good flow rate is:

- Troughs remain cleaner and water cooler if flow rate is sufficient and trough size is small
- Sufficient water can be supplied to large mobs without the troughs getting emptied.

Centrally located water trough

Quick coupling valves or Camlock fittings can be used for quick and easy movement of troughs

Portable water system

This central water point waters 7 paddocks

This tough fills in 60 seconds. Has 50mm float valve and pipe from tank

Animal Behaviour

Points to consider when assessing animal behaviour include:

- Livestock prefer to drink near the float valve.
  to get cool fresh water.
- Stock will rush into the trough if they know that the water
  will run out or a poor flow comes into the trough.
- If water supply is poor stock will camp on the water point.
- Stock have a natural grazing arc from the water point.
- Reduced stress on animals if they have a good water supply.
- Shy drinkers may fail to drink if not enough water is supplied.
- If stock come in as a mob, the dominant animals will drink first and the shy drinkers may move back out grazing with the rest of the mob without having a full drink or drinking at all.
- Stock graze into the wind.

Changing Animal Grazing Behaviour with Water

Consider these points when making changes to animal and grazing management:

- Livestock should be able to come in and get a drink without waiting for water so therefore flow rate is important.
- If livestock know there is always water in the trough they will move a considerable distance to graze away from the trough rather than camping near the trough.
- Stock need to learn how to graze away from the trough and this could take time.
- If livestock know there is always water in the trough they will drink throughout the day and individually or in twos or threes rather than rushing in as one mob to get a drink.
- In larger paddocks water can be used to manipulate grazing if you have multiple water points. For example having one switched on and the other switched off.
- Change the location of the water in the paddock using portable system and T'ing off at various different locations. This will require a pipe line along the side of the paddock
- The trough should be located to allow for the natural grazing arc to maximise utilisation of a paddock.
- Sheep require energy to walk to water therefore if the distance is reduced more energy is available for production. Take the water to the sheep rather than making the sheep go to the water.

Flexibility with a good water supply – Controlled or Rotational Grazing

To maximise production and feed utilisation:

- Don't let water restrict how you graze a paddock.
- Having a good flow rate will allow you to have large mobs and rotate frequently. This improves feed utilisation as less feed in trampled and wasted. More even grazing occurs and tracking and camping is reduced and nutrients are more evenly distributed.
- Rotating stock will result in stock forgetting their preferred grazing sites in a paddock or favourite camping spot.
- By rotating stock, feed remains closer to the trough/water as it is not grazed out over time. The tracking is reduced as the stock spread out closer to the trough to graze as there is fresh feed available.
- Rotating stock will stop animals walking back to their preferred feeding area in a paddock and causing tracking.
- Stock like a fresh paddock rather than being in a paddock with feed soiled by faeces and urine.
- A good livestock system is not a "set and forget system". Monitor feed supply, animal requirements, condition and ground cover to minimise soil erosion.