Maintaining livestock water quality on small landholdings

Monitoring water quality and quantity is vital to sustain stock condition during summer and to prevent illness and possible death from toxic pollutants.

Seasonal conditions affect the volume of water stock need while water quality influences the volume livestock can drink.

If sufficient water of suitable quality is unavailable, feed consumption, animal productivity and health can decline.

Be proactive and destock well before water or feed supplies run low.

Landholders can protect and improve water quality for stock during summer by:

- shading water sources
- monitoring salinity and pH levels
- cleaning troughs frequently
- preventing algal blooms and water contamination
- maintaining groundcover around dams
- skimming dam surfaces after rainfall and strong wind events
- taking steps to reduce evaporation.

Poor-quality water can reduce animal production, impair fertility and lactation and, in extreme cases, cause animal losses as stock drink less than they need or stop drinking all together.

Salinity affects drinking

Livestock can consume 50–80% more water if it contains more than 2000 parts per million total dissolved salts partly because of taste and partly to dilute or flush the salts from their systems (see Table 1, page 2).

But eventually stock will refuse to drink highly saline water. Surface waters such as dams generally have lower salt levels compared with underground or bore water.

However monitor all water sources to ensure levels are not toxic to livestock.

How much water do animals need?

Water demand changes according to season, age and lactation status of animals.

Water demand also increases when livestock move from succulent green feed to dry feed and supplements and when water salt content is high.

Providing shade and shelter to reduce heat stress will reduce water demand.

Salinity, acidity, algal growth, pollution and toxic elements all affect the suitability of water for stock.

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However monitor all water sources to ensure levels are not toxic to livestock.
It is essential to clean and flush troughs regularly during summer and provide shade where possible to prevent animal losses.

**Acidity or alkalinity**
Water pH below 6.5 or above 8.5 can upset stock digestion.
This can cause animals to reject water, which can depress their appetite and reduce production.

**Deaths** have occurred even when an adequate supply of water is available.
Use alum to correct a high pH or add lime to low pH water.

**Algal blooms**
Algae can contaminate surface water and cause:

- a foul taste
- odour
- stagnation from reduced oxygen levels
- possible stock poisoning.

Warm weather and low surface flows together with high nutrient levels from decaying organic matter, phosphates, industrial waste or sewerage pollution, encourage excessive algae growth in dams and slow-moving streams.
This can result in masses of algae called blooms.

Many varieties of algae can cause blooms that range in colour from green to blue, red, brown, dark green or black.
These can persist for several weeks to months.

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### Table 1 Safe upper limits for salinity levels for water consumption

<table>
<thead>
<tr>
<th></th>
<th>mS/m</th>
<th>mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans</td>
<td>250</td>
<td>1 500</td>
</tr>
<tr>
<td>Alpaca, adult</td>
<td>365</td>
<td>2 000</td>
</tr>
<tr>
<td>Dairy cattle</td>
<td>600</td>
<td>3 500</td>
</tr>
<tr>
<td>Beef cattle</td>
<td>900</td>
<td>5 000</td>
</tr>
<tr>
<td>Lambs, weaners</td>
<td>900</td>
<td>5 000</td>
</tr>
<tr>
<td>Horse, adult</td>
<td>1 270</td>
<td>6 500</td>
</tr>
<tr>
<td>Sheep, adult</td>
<td>1 820</td>
<td>10 000</td>
</tr>
<tr>
<td>Goat, adult</td>
<td>2 500</td>
<td>14 000</td>
</tr>
<tr>
<td>Ocean</td>
<td>5 800</td>
<td>35 000</td>
</tr>
</tbody>
</table>
Algal blooms in farm dams can be difficult to remove but cool, windy weather or increased water flow can reduce algal growth.

Not all blooms are poisonous but blue-green algae can pose a risk to humans and stock.

It is recommended landholders treat blooms as toxic until after testing.

**Polluted water**

Manure and dried vegetation can blow or wash into water storages making water unpalatable to stock.

Bacteria and algae grow rapidly on this material, which reduces oxygen levels and turns the water black and putrid.

A thick scum around the water’s edge can develop making stock access difficult.

Although generally not poisonous, contaminated water can be harmful to young or weak stock and can reduce animal production.

Maintain groundcover around dams or build a sediment trap using straw bales, netting or corrugated iron where groundcover has been reduced.

Skimming debris from the water’s surface within 48 hours of rainfall or a strong wind event can reduce contamination.

Reticulating dam water into troughs can reduce pugging and bogging of dams, but the reticulation system needs to be reliable and able to meet peak animal demands.

Pumped water has higher oxygen levels, which can reduce contaminant levels.

Aquatic plants also help to re-oxygenate dams, but be aware of declared plants and weeds.

It is critical to the condition and health of your stock to monitoring water quality and quantity during summer.

Failure to do so can lead to illness and possible death from toxic pollutants.

Monitor water supplies regularly and take action immediately if water is unsuitable for stock consumption.
Notes

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Noteworthy 8 - Livestock water supplies for small landholders
Noteworthy 42 - Calculating livestock water requirements for small landholders

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