

Evaluating Water Quality

Famo Flier

Water is simultaneously the most important and most overlooked nutrient for all livestock. Poor water quality can negatively affect multiple animal aspects including growth, general productivity, and reproduction. Death is also a possibility if water is severely contaminated and/or restricted. It is critical that water quality is monitored regularly to support optimal animal performance.

Many operations utilize well water. Depending on location, well water can vary in quality dramatically. It is important when gathering water samples for assessment to test each location to account for possible variations. Depth of the wells, time of year and even rainfall can have significant effects on quality.

While waiting for water sample lab analyses to return, there are some on-site evaluations that can be conducted. First, smell the water. Smelly water (rotten egg scent) is indicative of high sulfur content. Sulfates are a strong trace mineral antagonist. This means that the sulfates prevent the body from absorbing ingested minerals. If the sulfur is high enough it can be toxic to the animal and induce polio.

High levels of manganese can cause palatability issues. While not toxic, it will limit water consumption. Black staining in sinks, etc. is indicative of high manganese water. In Minnesota and Wisconsin, high manganese occurs occasionally. More frequently high iron is the issue. While not toxic, iron can reduce palatability and acts as a trace mineral antagonist. High iron can be determined by rust staining in sinks, etc.

High salinity seriously affects water consumption. It also devastates mineral intake. Cattle may not eat mineral when salinity is high. Alternative options need to be considered in these situations. Lick tubs (such as MinLic) work well in these conditions where traditional granular minerals would fail.

Good quality water is often taken for granted when in actuality it has the potential to make or break an operation. Make sure to routinely check water quality and ensure that the products being fed best match the conditions. Operations with water containing high levels of trace mineral antagonists should consider using a performance mineral containing more bio-available minerals (Zinpro Availa-4). Operations with high salinity should look at moving to a lick tub to encourage more consistent mineral intake.

Remember that in addition to needing quality water, access needs to be a priority as well. An adequate number of waterers should always be available and accessible.

Factors affecting water quality

1. Salinity – measure the amount of salt in the water (includes sodium chloride and other salts).
2. Hardness – the amount of calcium and magnesium in the water. Reacts with soap to create soap scum.
3. Total Dissolved Solids – single value that combines hardness and salinity.
4. Nitrates – typically nitrates are measured in forages, but high nitrate water can also occur. High levels of nitrates can result in nitrate poisoning which can be fatal.
5. Blue-Green Algae – ingesting this toxic algae bloom can result in death within 24 hours. The bloom can occur very quickly so water sources should be monitored. Algae appears blue/green but can turn a dark green/brown during hot days at the surface of stagnant water.

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