

VETERINARY CALL

by Bob Larson, Kansas State University

Water

Water is vital to livestock, especially during the summer months.

During hot weather, adult bulls, feedlot cattle and lactating cows can require 20 or more gallons of water per day. Both well-water and surface-water sources must provide sufficient amounts and be accessible to all cattle. While unlimited access to ponds or streams offers space for many cattle to drink at once, this type of access causes damage which leads to soil erosion and development of mud holes. Most experts recommend ponds be fenced off and serve as a reservoir for a float-controlled automatic water source with a concrete slab or rock base.

Adequate flow rate and trough size are important to ensure a proper water supply. Cattle with access to water throughout the day require less trough size compared to cattle in pasture situations. Because range cattle usually all drink within a short period of time, the watering system

(pump, pipe diameter, reservoir, etc.) should be able to supply the entire day's supply within four hours.

In addition to providing adequate water, ensure good water quality for your cattle. The factors most commonly considered when determining suitability are levels of nitrate, sulfate, total dissolved solids and the risk of toxins such as blue-green algae.

The total dietary intake of nitrate (water + diet) is more important than the water level alone. Water sources with apparently acceptable nitrite/nitrate levels can be high enough to combine with marginally high levels in the feed to cause health problems.


While water from deep wells with intact casings are usually free of nitrates, water from ponds or shallow wells fed by runoff from heavily fertilized or manure-treated fields can have dangerously high levels.

Sulfate levels in water affect cattle's consumption, weight gain, and feed efficiency. With higher levels of sulfur (usually in combination with high-sulfur feeds), cattle can have a nervous system disease called polioencephalomalacia (also called polio, PEM, or brainer).

Total dissolved solids is a measure of the total amount of dissolved material in the water such as magnesium, calcium and sulfate.

Total dissolved solids in water in excess of 3,000 milligrams (mg) per liter, or 0.3%, may result in diarrhea and water refusal in cattle. Almost all (97.7%) water samples collected for a USDA survey contained total dissolved solids of less than 3,000 mg per liter.

Another important water-quality consideration is blue-green algae blooms (*Angus Journal*, July 2021). Blue-green algae are a type of bacteria that can multiply rapidly (bloom) in stagnant ponds when nitrogen and phosphorous levels are elevated due to fertilizer runoff, abundant sunlight and temperatures greater than 70° F. These blooms have been described as having the appearance of grass clippings, scum, floating mats or spilled paint.

Making sure cattle have access to plenty of good-quality water is one of the most important aspects of animal husbandry. Insufficient space for animals to drink, low flow rates, low storage capacity, and high mineral or toxin content can all discourage water consumption to the point that feed intake is reduced or can directly cause severe health problems. 

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