

A Word About Water

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Water is important! It's not just grass that makes beef; it also takes water to help process food during digestion. Water is the most important nutrient and is often overlooked. Water shortage seriously affects the productivity of livestock. A cow eats about 12 kg of forage a day (measured as dry material) and requires 40 to 60 litres of water to digest that forage. Water quantity is one factor affecting livestock performance; water quality is also an important consideration. Livestock prefer to drink clean water. Cattle that drink clean water spend more time grazing and ingest more forage. Cattle gain more weight, when clean water is available to them, compared to watering directly from a pond or dugout. In Agriculture and Agri-Food Canada research trials, clean water produced 23% greater weight gains for yearlings compared with direct access to dugouts or ponds. Calves, with cows drinking clean water, gained 9% more weight than those with cows with direct access to ponds. (*Agriculture and Agri-Food Canada; Effects of Water Quality on Cattle Performance, Willms, W.D.*) This research also suggests water palatability, or taste, determines how much water cattle will drink and how long they will spend drinking, to meet their needs.

When livestock have unrestricted access to surface water they can contaminate that supply. While drinking, cattle will drop a load in that water about 25% of the time. Given a choice, cattle avoid water fouled by even small amounts of manure. Animal manure in water encourages algae growth. A kilogram of phosphorous, derived from animal manure, will spark the growth of 500 kg of algae. Coupled with other nutrient sources, lakes, ponds, dugouts and sometimes rivers and streams can experience large algae blooms. This strongly influences water palatability and some algae may be toxic to livestock.

How can we improve water quality, aid livestock distribution and increase livestock performance? Research suggests that choice can be provided to livestock, often without fencing, by piping or pumping water from surface sources to troughs. In the trials livestock overwhelmingly selected troughs over surface water supply, even though no fences were present to restrict access. When given a choice, cattle drank from a trough eight times out of ten, even if they had access to surface water. Often cattle would walk further to water at a trough than drink from a stream. Some of this must have to do with the difficulty of access to some surface water- wading through mud on the edge of a dugout or negotiating a steep stream bank. It may also be related to animal security and comfort- the ability to see the surrounding area while drinking. Whatever the reason, it seems to work.

Because off-site water changes livestock distribution, it reduces the risk of water contamination and better captures nutrients for plant growth in the pasture. About 65% of the manure produced will be deposited within 30 meters of bedding and loafing sites.

These tend to be riparian areas, so moving water and providing shelter and shade away from streams, ponds, wetlands and lakes will improve water quality. Changing livestock distribution will improve the vegetation in the riparian fringe, which is the zone of critical filtering and buffering. Off-site water is also a way to extend the life of constructed dugouts and ponds, reducing cleaning and reexcavation costs. Conservation of water supply can be another benefit.

If you have surface supplies of water (a stream, river, lake, wetland, or spring) consider building an offsite water system to maintain the supply and the quality. It's good for you, your cattle, and downstream water users. For more information on the information provided in this article, contact Cows and Fish at (403) 381-5538.