You don't need me or anyone else to tell you that water is important for livestock and all other living things. The necessity of water is common sense, but what tends to fall by the wayside is just how much of an effect the water quality can have on an animal's ability to thrive and grow.

We don't usually forget about water. We know that a lack of water will dramatically and definitely affect cattle health and performance. What we may forget is that water is a nutrient and has nutritional value that can affect livestock as its quality changes. Water varies in quality of nutritional value from one source to the next, just like feedstuffs that have protein, energy, fiber and minerals. It is important not to take it at face value. In other words, we, as stewards of livestock, should evaluate our water sources and be aware of how they change throughout the year. For example, during the summer, our ponds and tanks experience higher rates of evaporation, concentrating elements in water.

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LIVESTOCK PERFORMANCE ON TROUGH OR POND WATER

In this study comparing the effect of water sources on average daily gain (ADG), cows, calves and steers on pasture gained significantly more pounds per day when supplied with water pumped to a trough vs. drinking directly from a pond (dugout).

Willms, W.D. 1996. Agriculture and Agri-Food Canada and Alberta Agriculture, Stavely, Alberta.
A beef cow can drink up to 5% of her body weight in water per day; a high-producing dairy cow can drink as much as 20%. The quantity of water that animals consume is affected by many factors, including growth, pregnancy, lactation, activity, diet composition, feed intake, environmental temperature and water quality. Water quality and quantity affect feed intake and animal health since poor water quality usually leads to reductions in water, and subsequently a decrease in feed consumption.

**COMMON WATER QUALITY PROBLEMS AFFECTING LIVESTOCK**
- High concentrations of minerals (excess salinity)
- High nitrogen content
- Bacterial contamination
- Heavy growths of toxic blue-green algae
- Accidental spills of petroleum, pesticides or fertilizers

Studies have been conducted to examine the effect of water intake levels on cattle weight gain, and have demonstrated that the more water an animal drinks, the more feed it consumes, leading to greater weight gain. Logic may say: “If I have clean ponds with good, clear water and no excess contamination, I should be in the clear.” But it’s not always that simple.

Research also has addressed the direct effect of water source and quality on gain. The two most common types of watering systems for cattle are:
- A trough fed by a well or a spring.
- An impoundment or pond.

One study conducted in Saskatchewan identified a 9-10% increase in weight gain of steers and calves drinking from water pumped into a trough versus those that drank from a pond. Similar studies have observed as high as a 16% increase in gains for stocker steers with access to clean water.

In the Saskatchewan study, there were no significant differences in water chemistry or biological constituents (minerals, dissolved solids, contamination) between trough water and direct pond water; therefore, these gain increases likely reflect greater palatability and subsequently, greater water intake. The aeration that occurs during the pumping process is thought to be one factor contributing to the increase in palatability of water for livestock. Even further, cattle with access to clean, aerated water have been documented to spend more time grazing and less time resting than those which drink directly from farm ponds.

The bottom line is that even a well-maintained pond rarely, if ever, can compare to water pumped into a trough, as long as the trough water source is good quality and not contaminated. When given the choice, cattle will avoid water contaminated even with as little as 0.005% manure by weight, so your ponds are probably less palatable than you may think. If you’re watering a cow-calf operation, this may not be of any great concern to you. But if you retain your calves or bring in stockers, give your water sources and how you deliver it a second thought. That extra boost in gains per day really adds up, especially in the right market, so ensuring that clean water is available can definitely pay off in the long run.