

LIVE STOCK

>>> Julius Ruechel, GRASS-FED CATTLE

An effective rotational grazing hinges on cattle having access to an adequate supply of clean water. Water is required to digest food and flush out toxins produced during digestion and is a significant component of weight gain: 70 percent or more of cattle's total body mass is water. If water intake is restricted, appetite decreases to maintain the balance between food intake and water processing so all digestive waste can be flushed from the system. Water also allows the immune system to function properly by flushing from the body stress and disease toxins and other by-products of a functioning healthy immune system. In other words, in cattle, weight gain and good health are tied to the amount and quality of water they consume.

HOW MUCH WATER DO CATTLE NEED TO DRINK

The quantity of water required by cattle changes dramatically throughout the season depending on growth rates, moisture in the food, lactation, summer heat, access to shade, and humidity.

DAILY WATER CONSUMPTION BY LIVESTOCK

CLASS	AVE. LITERS PER DAY
Dry cows and heifers	22L – 56L
Lactating cows	41L – 68L
Bulls	26L – 71L
GROWING CATTLE	
181kg	13L – 37L
272kg	19L – 54L
363kg	22L – 66L



WATER

Lessons from the head.

Let me tell you about a water system I spent many sleepless nights trying to repair. One part of the family farm I was managing was a 242ha summer pasture some distance from the main farm. It was divided into a wagon-wheel grazing rotation around a single central water corral, which was supplied by one mile of underground pipe from an artesian well at the property boundary. The grazing cell had just been switched from a 120-cow and calf pair summer range, with part of the land set aside for grain production, to be used exclusively as a summer stocker grazing operation for more than 350 stockers.

The stockers weight gains on this property were disappointing, however and were getting worse. The grass was remarkably lush, the soil showed no nutrient deficiencies, no fault could be found in the mineral program, and there was an abundance of unused grass – so what was the problem?

The water trough was always full and seemed to be working properly, but one day I happened to arrive for a pasture check when the whole herd was drinking at the water corral. There was quite a bit of pushing and shoving around the trough, which the cattle had drunk to the bottom. Although water was still flowing into it, the sides were bone dry, telling me that the cattle's thirst dramatically exceeded the water supply's flow rate. This realization was the proverbial light bulb moment during which all of the cattle's behaviour and weight gain issues become clear to me.

The water was flowing into the trough at 13L per minute. The cattle had to wait at the trough all day to get a turn at the water, and even then, it was simply not enough to meet the demands of high weight gain. They simply could not drink enough water to eat more.

The flow from the well had slowed. After I cleaned out the well and added a pump, the flow returned to its original volume of 23L per minute at the trough, which had been adequate for the previous, smaller herd. Still the problem persisted. The stockers continued to drain the trough faster than the well

could refill it, so the cattle spend their whole day in the water corral, pushing and shoving to get their turn, instead of grazing in the pasture. The corral was turning into a muddy, manure-filled fly magnet and all of the valuable nutrients from the field were quickly accumulating around the water trough.

Although pumping increased the well's flow, only a fraction of the well's capacity was actually reaching the trough. The underground lines had been sized for the smaller herd. The narrow pipe diameter created tremendous friction losses to the water pressure over the long distances that the water was flowing. Replacing the underground lines over that great distance to meet the peak water demand was not feasible, for it would have required digging up a public road separating the well from the rest of the property. The only other option I had was to create water storage at the corral.

The problem was solved by installing a giant aboveground water tank that gravity-fed water to the trough at over 151L per minute. The well might take all day to fill the tank, but when the cattle came to the trough to drink, every last one of them got their fill in minutes.

The change in the behaviour of the cattle was remarkable. Water ceased to be a limited resource. Their weight gains skyrocketed and the dominant animals no longer felt the need to control access to the water trough because water was no longer in limited supply. Soon the stockers began to drift into the corral one at a time to drink, after which they immediately turned around and left. They no longer felt the need to rush to the trough together to ensure that the first arrivals didn't deplete the water. The corral dried up, the flies disappeared, the manure stayed in the fields where it belonged, and health concerns such as pinkeye and foot rot all disappeared because the animals no longer spent the day surrounded by flies and with wet muddy feet.

This process taught me the difference between a clean water supply and an adequate clean water supply capable of meeting the cattle's demands.