



## Are your cows drinking enough water?

It is well known that water is the most important essential nutrient for living organisms. For the lactating dairy cow, water is not only important for maintenance of life, but is also essential for growth, reproduction, and lactation. Water constitutes about 87% of milk, and the average lactating dairy cow in Illinois may produce up to 8 gallons of milk per day. Also, a high-producing, lactating cow will spend up to 12 to 16 minutes per day drinking and might drink up to 40 gallons of water per day. Therefore, getting the right quality and quantity of water into the cow is critically important.

### *Water Management*

Water management is often overlooked on dairy farms. When considering how to properly manage water for dairy cows, it is important to keep facility designs and space recommendations, cleaning strategies, types of waterers, and water quality and testing in mind. Currently, the recommendation for amount of water space per cow is 2 to 3 feet of tank perimeter per 15 to 20 cows. Not providing enough watering space for all of the cows in the herd could ultimately lead to decreases in milk production since not all cows will have their water needs met. The water should be no shallower than 6 to 8 inches of fresh water in a trough that is approximately 24 to 32 inches tall. Cows should be able to stick their muzzles into the trough and drink without consuming any air.

Water troughs should be easily accessible to cows as they return from the parlor. Cows will drink 50 to 60% of their daily water requirements immediately after milking, so 1 to 2 feet of trough space in the return alleys should be available per cow released from the parlor at a time. Also, it is important to provide water to cows in conjunction with feeding. Waterers should be present within 50 feet of the feed bunk and out of direct sunlight.

Water troughs should be emptied and cleaned regularly in order to provide high quality water to cows. The recommendation is to clean troughs with a solution containing 1 cup of household bleach per 5 gallons of water once per week. The solution should be thoroughly scrubbed onto the inside of the waterer and then the solution should be removed and replaced with clean water. This regular practice will ensure that cows are getting enough high quality water to sustain the demands of lactation. Generally, if given a choice, cows will choose to drink water that is of a moderate temperature rather than water that is too hot (> 82 °F) or too cold (< 63 °F).

### *Quality Issues*

If the water available for cows is of low quality, such that it is unpalatable in any way, the cow may recognize this and ultimately refuse to drink or drastically reduce her water in-

take. If the water has a high level of dissolved inorganic material, this is referred to as total dissolved solids, or TDS. Having a high TDS value is unwanted as it can be an indicator of poor water quality. Some of the inorganic material that may be present in water samples with a high TDS value are calcium, magnesium, sodium, arsenic, bicarbonate, chloride, fluorine, nitrate, sulfate, and cadmium. Also, high levels of iron and sulfur in drinking water can impact intake, health, and performance. Too much sulfur can be detected based on a rotten egg smell which may contribute to decreased intake.

Another common issue with water quality is the presence of microorganisms, such as algae. If waterers are left under certain conditions, such as warm, sunny weather, ample nutrients, slow moving water, and correct wind, an algae population may grow and thrive and ultimately cause problems when consumed. Some of these issues include decreased feed intake, diarrhea, loss of responsiveness, weakness, and even death. It is very important to clean waterers regularly and keep them free of algae and other harmful microorganisms. It is important to remember that often, the best solution for providing quality water to lactating cows is by regularly cleaning water troughs.

Besides water quantity and availability, TDS, and microorganisms, a few other factors that may influence water intake are mineral ion and protein content in feeds, pH of silage, environmental temperature, and dry matter content of the diet. For more information, please see the video [“Dairy cattle water consumption management”](#) on our YouTube channel: <https://www.youtube.com/user/DairyFocusAtIllinois>.

*–Maegan Weatherly and Dr. Phil Cardoso*