



# Dairy Briefs

## The Latest Information on Dairy Cattle Nutrition



### Water: The Forgotten Nutrient Laura Martin, M.Sc

Water is the most important nutrient for dairy cows; however, water quantity and quality are often overlooked when it comes to routine maintenance. High producing dairy cows require more water per kg of body weight than any other land mammal. When quantity or quality of available water is poor, production and health can suffer.

Water consumption in dairy cattle is influenced by a lot of factors: milk production, dry matter intake, activity level, environment (i.e. temperature), diet composition and water quality. Total water intake for lactating cows is 4 – 4.5 kg per kg of 4% FCM produced. The majority of water consumption (70-97%) comes from drinking water, with most of the remainder coming from water present in feeds. Even though some water is provided in feed it really doesn't impact drinking water consumption unless the ration is very wet (>70% moisture) and



then drinking water intakes will decline rapidly. For the average cow that means that for every kg of milk she produces she needs to drink 3 L of water.

Most cows prefer to do the majority of their drinking after exiting the milking parlour. Cows will consume as much as 50 –

60% of their daily water intake after milking, if given the chance. It is a good idea to have 1 – 2 ft of trough space per cow in the return alley from the parlour so that there is room for the cows to drink as they exit the parlour. For the rest of the barn, water troughs should provide 3 – 4 inches perimeter length per cow. As cows are designed to lower their heads to eat and drink, troughs ideally should be about 2 ft from the floor.

Cont. >>

Inside this Issue...

*Water: The Forgotten Nutrient*

By: Laura Martin, M. Sc, Nutritionist



**ORDER SILO GUARD® II  
NOW AND SAVE!**



**SILO GUARD® II  
FORAGE ADDITIVE  
FOR ALFALFA,  
CORN SILAGES  
AND BALED HAY**

Volume 7, Issue 12  
November 2014

69819 London Road, RR #1, Centralia, Ontario, Canada, N0M 1K0

Tel: (519) 228-6444 or 1-800-265-2904 • Fax (519) 228-6560 • Email [kpalen@kenpal.on.ca](mailto:kpalen@kenpal.on.ca) • [www.kenpal.on.ca](http://www.kenpal.on.ca)

Dairy cows prefer to drink warm water unless it is very hot outside. Water recycled from the parlour's plate cooler can be a great source of warmed water provided that the supply available is enough to keep a minimum of 3 inches in the bottom of the trough and is clean. Water troughs should be cleaned (emptied and scrubbed) on a regular basis, preferably daily but at minimum weekly. If you wouldn't drink the water out of the trough don't expect your cows to drink it either.

While dirty troughs can cause water quality to decline there are other aspects of water quality that should also be considered when it comes to drinking water. Odour and taste are the easiest things to check on farm. If it smells (rotten eggs, fecal matter) or if it has an off taste (salty, metallic) then cows will probably reduce their intakes. It is also a good idea to periodically test water for the presence of minerals, compounds and bacterial contamination. Most water test results come with a legend of acceptable values for livestock water but there are few to keep a close eye on.

High iron in water is probably the most frequently reported problem when it comes to drinking water. Concentrations greater than 0.3 ppm in drinking water can cause problems for dairy cows. High iron may cause a metallic off-taste to the water, reducing intakes. Also iron-loving microbes can form slimes in pipes and troughs reducing water flow. The iron found in water is much more available to animals than the iron found in feeds. Water-soluble iron bypasses the regulatory checks that help prevent iron toxicity in animals. Iron toxicity can reduce immune function, increase retained placentas and mastitis, cause diarrhea and decrease growth in heifers.

Sulfate is a biologically active anion that in high enough levels can reduce water intakes and milk production. Sulfate especially affects fresh cows and can reduce feed intakes and increase displaced abomasums and retained placentas. The concentration in drinking water should not exceed 1000 ppm.



Nitrates are as much a concern in water as they are in feeds. Nitrates can contaminate water sources through surface runoff from crops or pastures. High nitrate levels, over 20 ppm for nitrate-nitrogen, can have a negative impact on reproduction. Nitrates in feeds and water are additive, so care should be taken if feeding high nitrate feeds that the water supply will not compound the issue.

Microorganisms in the water supply are also a concern. For outside holding ponds, summertime algae blooms are a concern as they can cause anorexia and diarrhea in animals that consume the contaminated water. Fecal organisms, like E. Coli, are mostly found in fouled water rather than in the water source itself. Proper sanitation of water troughs and drinkers can greatly reduce this problem. Build up of bacteria in holding tanks can also be reduced with a regular cleaning and maintenance schedule.

Solutions for water filtration can be expensive or are not practical on a farm scale. If the problem is chronic within the water supply, this may be the only option to provide safe drinking water for the



**Designed specifically to allow for greater feed intake, increased feed efficiency and improved milk production in feed cows.**

### **HELPS GET FRESH COWS OFF TO A GOOD START**

peakSTART® is ideally suited for starting off high-producing dairy cows. Getting fresh cows off to a good start in lactation will help maintain their peak production right through to dry-off. By targeting the cows that matter, costs can be reduced and potential income increased.

### **FEATURES AND POTENTIAL BENEFITS**

- Safe to handle.
- Easy to use - top dress or mix in grain mix or TMR.
- Provides buffers and binders.
- Contains yeast source, shown to help increase fibre digestion and increase feed intake.
- Provides Niacin which is a B-vitamin shown to increase peak milk production and reduce incidence of ketosis
- Includes an organic, bioavailable source of zinc shown to help reduce mastitis and improve foot health.



**Gives fresh cows extra energy and the essential nutrients for a speedy recovery from calving.**

### **WHEN TO USE microbiSTART**

microbiSTART® can be used to get fresh cows back on feeds smoothly with minimal problems. Research has shown that cows that recover quickly are bound to have less metabolic problems such as milk fever and related disorders. It should be fed immediately after calving and may be continued for up to two weeks, depending on the cows' condition.

### **POTENTIAL BENEFITS**

- Provides an immediate source of energy for the rumen bugs and the animal.
- Stimulates fibre-digesting bacteria by providing nutrients for these rumen bacteria.
- Provides potassium for maximum activity of the rumen microbes.
- Helps restore body fluids lost after calving.
- Provides the buffering capacity required for maximum activity of the rumen bacteria.
- Promotes dry matter intake and increases ration digestibility.
- Increases energy balance in early lactation cows.
- reduces excessive weight loss during early lactation.

herd. Chlorination of water followed by an Activated Carbon Filter (ACF) is an effective method to cover most problems on farm. The chlorination kills microorganisms and reduces off odours and colours while the ACF captures minerals, metals, pesticides and other undesirable compounds. While chlorination of the water source is recommended, using chloride tablets in water troughs is not. This can cause spikes in chlorine that may impact water intake.

This often overlooked nutrient has many functions in the dairy cow, the most noticeable one being its role in creating a saleable product – milk. Milk is 87% water and if intakes are limited milk production will also be limited. Access to clean, plentiful water should be available to the whole herd to ensure that every cow's production is optimized.



**ORDER SILO GUARD®II NOW AND SAVE!**

## WHY FIGHT THE FORAGE BATTLE?

Let Mother Nature Solve the Problem With the Help of  
Silo Guard®II Forage Additive For Alfalfa, Corn Silages And Baled Hay

**Take advantage of these great discounts from  
Kenpal's Early Booking Program for Silo Guard®II**

## DISCOUNTS AVAILABLE

Ordered By:	Paid For By:	Discount
December 31, 2014	January 7, 2015	9%
March 31, 2015	April 7, 2015	6%
After April 1, 2015	Standard Terms	3%



**DRY GRANULAR PRODUCT OR READY-TO-USE LIQUID • APPLICATORS • TECH SUPPORT**

**WE APPRECIATE YOUR BUSINESS**

69819 London Road, RR #1, Centralia, Ontario, Canada, N0M 1K0

Tel: (519) 228-6444 or 1-800-265-2904 • Fax (519) 228-6560 • Email [kpalen@kenpal.on.ca](mailto:kpalen@kenpal.on.ca) • [www.kenpal.on.ca](http://www.kenpal.on.ca)