



Dairy Briefs

The Latest Information on Dairy Cattle Nutrition



Sweeten Your Rations with Sweet Feed

Laura Martin, M.Sc

Recently the topic of feeding sugar to dairy cows has resurfaced. This isn't new knowledge but it can be overlooked when focusing on on-farm feeds. Cows, and their microbes, have a "sweet tooth" and supplementing lactation diets with sugar can help increase gut health and production.

Dry forages, like hay, can have variable levels of sugars depending on variety and harvest timing. Plants make sugar all day and then consume it at night, so hay harvested in the afternoon should have more sugar than hay harvested in the morning. Fermented feeds may contribute very little sugar to the ration as much of the sugars are used up in the fermentation process. Mature grains have very little sugar and, by harvest time, most of the sugar has been converted into starch. Typical dairy rations, with fermented forages and mature grains, only contain low levels of sugar, about 2 – 4% DM. However, the ideal sugar level in a lactation ration is around 4 – 6% DM. Supplementing diets with a sugar source, like kickSTART, can boost the total level of sugar into the ideal range. Research has shown that the optimal feeding rate for added sugar is 2.5 - 5% of the diet dry matter. Adding sugar works especially well in high corn silage rations and rations that have low fibre digestibility.

Bakery can be a good partial replacement for corn. It is actually higher in energy than corn and is very palatable; however the sugar levels can be quite variable depending on the mixture of bakery products used. Both whey and molasses have high concentrations of sugar and are often used in combination in commercial liquid feed supplements. These two ingredients have different sugar profiles, with molasses having mostly sucrose and whey containing mostly lactose. This combination of sugars works well together in the rumen



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By: Laura Martin, M. Sc, Nutritionist



LIQUID MINERAL SUPPLEMENT FOR DAIRY COWS

ADD kickSTART® NOT WATER

Adding water to TMR rations may make the ration unpalatable . . . add kickSTART® instead!



Molasses is high in sugar, resulting in a tasty source of energy for cows

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to provide energy. kickSTART can help bind the TMR components together to help reduce sorting, which can improve milk production, components and general animal health.

Fibre is digested slowly in the rumen and can take over a day to degrade. Starch is digested faster than fibre but it still takes several hours to degrade which helps provide a steady source of energy between “meals”. Sugars are fermented within an hour. Even though sugars ferment more rapidly than starches, they don’t pose the same risk for rumen acidosis and reduced butterfat. When sugars are broken down in the rumen, they tend to increase the levels of butyrate, and this plays a big role in how sugars benefit the cow.

Butyrate produced in the rumen is used as a fuel for the cells that make up the rumen lining. Butyrate has also been shown to be more effective at increasing the development of rumen papillae (the microscopic projections from the lining of the rumen) than the other volatile fatty acids created during fermentation. This implies that by increasing the levels of butyrate, by feeding sugar, the absorptive surface of the rumen can be increased. Cows with higher levels of butyrate may also be more resistant to subacute rumen acidosis. Multiple studies have shown that feeding sugar at moderate levels does not lower the pH of the rumen. The breakdown of sugar does not contribute to the production of trans fatty acids that are linked to decreasing milk fat levels. Actually, sugars may help reduce the build up of these fatty acids. This, combined with the stable pH, contributes to the higher butterfat levels associated with feeding sugars.

Feeding sugars can also increase feed intake in milk cows. One obvious reason is that it sweetens the feed and, as every producer knows, cows have a sweet tooth. kickSTART contains molasses which has been shown to boost appetite, resulting in higher dry matter intakes. Another reason that cows may eat more is that by increasing butyrate, and lowering propionate, the cows don’t feel full as fast. High levels of propionate are responsible for “telling” the cow that she is full, which is why some diets with high starch levels can reduce intakes because the cows are receiving signals that they need to stop eating.

What sugars really do is feed the rumen microbes. Sugars are used up by the microbes so that the microbes can then turn dietary fibre into energy for the cow. Adding sugar to the diet changes the population of microbes and can increase the production of microbial protein. This microbial protein is then used by the cow and is an excellent source of amino acids that are used to produce milk. When feeding supplemental sugars it is important to ensure that the ration provides enough rumen degradable protein to support the growth of the microbes. If there isn’t enough protein for the microbes to use, the extra energy doesn’t have as big of an impact. This increase in microbes and the potential for increased surface area in the rumen contributes to the

increase in fibre digestion that is seen when feeding extra sugar. The increase in fibre digestion, along with the increased intakes and improved gut health explain why feeding sugars could increase milk production and milk fat.



Satisfying your cow’s sweet tooth, with kickSTART, can increase production in a healthy way. Replacing some of the fast-acting starch in the ration with sugar can increase intakes and milk production. Talk to your Kenpal sales rep about adding kickSTART to your ration today!



Reaping the Rewards of Robotics with Kenpal's Dairy Program

James Smith runs Maple Croft Farms Ltd., a 75 milking cow operation near Wyoming, ON. He switched to Kenpal in 2012, because Larry Merner was highly recommended to him when he was having chronic fresh cow and breeding problems. He has been working with Larry, one of Kenpal's dairy specialists, ever since and he uses Kenpal's line of ruminant vitamin/mineral premixes for his milk cows, dry cows and heifers.



In May 2015, James moved the cows out of the tie-stall barn and into a new robotic milking barn. "When Larry said we could get 40 L/cow I never thought it was possible. We got 40 L, and then we hit 46 L." James started using Kenpal's Robot Pellet before the cows even moved into the new barn. The pellets contain Kenpal's Hergageum Condiment flavouring agent. When asked about Kenpal's Robot Pellet, James says, "My cows really like going to the robot; the herd is always over 3 visits per day. I seldom have any fetch cows."

It's not just Kenpal's products that James likes, the service is great and the staff is knowledgeable. "My sales guy comes out every 2 weeks to look things over," that way any questions can be answered right away.

James looks forward to continuing his relationship with Kenpal and seeing just what quality nutrition can do for his herd.

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