



Dairy Briefs

The Latest Information on Dairy Cattle Nutrition



How Low Can You Go: Optimizing Low Forage Rations

Laura Martin, M.Sc

Many producers this fall noticed a much bigger drop in milk production than expected when they started into new corn silage. Much of this drop can be attributed to differences in feed analysis compared to last year's corn silage. Pinpointing the problem is always good but what can producers do to get production back up and how much will it cost them?

A small drop in milk production is usually expected when producers switch over to new corn silage in the fall, especially if forage supply requires them to feed fresh corn silage. The availability of starch in corn silage that has only been in the bunk a couple weeks is much lower than silage that has been fermented for a year. The cows, or more accurately their microbes, notice the difference which generates the "fall slump". As the silage ferments, the starch becomes more available and the cows recover their production.

The issue this year appears to be linked to fibre levels and fibre digestibility rather than only unfermented corn silage. A recent article by John Goeser illustrated the higher fibre levels with lower fibre digestibility in 2013 corn silage than previous years. He shows a 10-15% decrease in fibre digestibility across the US. According to research done by Oba and Allen (1999) for every unit increase in fibre digestibility there is an associated 0.25 kg increase in 4% fat-correct milk (FCM). This drop in fibre digestibility would help explain the drop in milk production seen this fall. Extended fermentation typically doesn't improve fibre digestibility like it does for starch, so this problem may persist until next harvest.

With bunks full of low quality corn silage to feed what options do producers have to get more milk out of their cows? One option would be to replace some of the corn silage with other digestible fibre sources, like beet pulp or brewer's grains. The highly digestible fibre in these feeds can help offset the low digestibility in the corn silage. However, abundant forage stores often discourage producers from purchasing in forage replacements. Storage for these ingredients can also be an issue.

Another option, and one probably most nutritionists used this fall, would be to increase the amount of grain fed to the cows. This would have been the

Cont. >>

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obvious first choice as those feeds would already be available on the farm. Decreasing the total level of forage fed and increasing the grain, or concentrate, portion of the ration provides the cows with easily digested sources of energy. For producers whose corn silage also tested low for starch, this is perhaps the best solution. But many producers are cautious about dropping the forage level. Forage is something that is already on the farm and a lot of producers have to purchase at least some of the grain or protein for the farm. With the current commodity prices, especially with the price of soybean meal being so high, does increasing the concentrate portion of the ration make economic sense?

A comparison of a high (65%) forage diet against a low (50%) forage diet can be seen in Table 1. Both diets are balanced with 50:50 corn silage to haylage and similar energy and protein levels. Using co-products, such as corn gluten feed and cottonseed, in the 50% forage diet, can help keep the rumen healthy when feeding low levels of forage. These diets were run through a Return Over Feed Costs (ROFC) program. ROFC programs allow producers to monitor feed costs and keep track of farm profitability. Using current market costs, the 50% forage diet has a lower feed cost than the 65% forage diet. Assuming both rations provide the same volume of milk at the same value, the 50% forage diet works out to be just over \$0.05/cow/day more profitable than the 65% forage diet. So even though more feed may need to be brought onto the farm this lower forage diet is more profitable.

	65% Forage	50% Forage
Straw (kg)	--	1.00
Haylage (kg)	18.29	12.97
Corn Silage (kg)	18.29	12.97
Dry Corn (kg)	4.62	6.02
Soybean Meal (kg)	1.63	1.44
DDGS (kg)	0.82	0.72
Canola Meal (kg)	0.82	0.72
Corn Gluten Feed (kg)	--	2.00
Cottonseed (kg)	--	1.00
Vitamin/Mineral Premix (kg)	0.671	0.701
Liquid Fat (kg)	0.25	--
Dry Matter Intake	22.52	22.52
Crude Protein (% DM)	17.00	17.00
NDF (% DM)	31.95	31.86
ADF (% DM)	20.29	19.43
Starch (% DM)	22.59	24.59
NE Lactation (Mcal/kg)	1.66	1.67
Milk Production (L)	35.00	35.00
Milk Value	\$ 0.77	\$ 0.77
Feed Cost per Head per Day	\$ 6.09	\$ 6.04
Return Over Feed Cost	\$ 20.89	\$ 20.95
* Costs derived from OMAFRA Weekly Hog Market Facts (Dec 23, 2013), Furst-McNess Daily Market Report (Dec 23, 2013), Corn Silage \$42/T; Haylage \$126/T; Straw \$132/T		

The assumption that milk volume and value is the same is a big one, and realistically the lower forage diet should produce more milk, which is the goal this year. Producing more volume of milk often means a lower

percentage of butterfat. However, increasing production by one litre per cow would allow for a drop in per cent butterfat alone up to 0.25 units before the cost of milk produced per cow per day would be impacted. For example, if the current production is at 34 L at 4.25% butterfat, an increase to 35 L would mean butterfat could drop to 4% and Bessy would still be generating the same income per day.

With fermentation potentially not fixing the low fibre digestibility problem in this year's corn silage, producers may need to consider a long term switch to higher concentrate diets. Transition the cows slowly to higher grain levels to prevent health problems and allow the rumen microbes time to adapt. Feeding more grain should boost milk production and increase profits.

References

Oba, M. and Allen, S.M. 1999. Evaluation of the importance of the digestibility of neutral detergent fibre from forage: effects on dry matter intake and milk yield of dairy cows. J Dairy Sci 82:589-596.



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Mike, Ben, Rose, Jeff Van Miltenburg & Larry Merner

Ben and Rose VanMiltenburg, along with their sons Mike and Jeff, own and operate Miltenview Holsteins Ltd. in Seaforth, ON. They have been dealing with Kenpal and their salesman Larry Merner for the last 23 years.

Once they installed the milking robot they started to feed Kenpal's Robot Pellet. The pellets contain Kenpal's Herbageum Condiment flavouring agent. Ben and Rose said "the Herbageum Condiment makes a huge difference! The cows love it and we won't order feed without it."

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The VanMiltenburg's like working with Larry and Kenpal and haven't switched since they started feeding with Kenpal 23 years ago. Ben adds "If there is something better out there, we haven't found it yet."

Ben, Rose, Mike and Jeff Van Miltenburg
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