



Dairy Briefs

The Latest Information on Dairy Cattle Nutrition



Some Short Term Ways to Improve Milk Production

By Pedro Nogueira

Incentive days! Two of the nicest words for dairy farmers. The possibility of shipping more milk and making that extra income; for some farms this will be easy to do either because they are already at their limit or over it, or because they have extra heifers (and barn space) to come in production. For other farms it can be frustrating to have these extra days and not being able to fill them. After all, cows don't just have a switch to turn into high gear or low gear as needed. There are, however, some things that dairy producers can do to try to increase their production. In this article we'll discuss some of them, mainly oriented for short term responses.

Change the ratio of forage to concentrate – If your diet has margin for it, in terms of fiber and carbohydrate levels, sometimes reducing the amount of forage and increasing the amount of grain and/or protein can be enough to get you some extra litres of milk. Ideally the herd would be divided in two groups; high and low production, and this extra energy and/or protein would only be put in the cows with less days in milk.

Increased Milking Frequency (IMF) – Dairy cows respond to being milked more times per day with increased milk production. Increasing milking frequency is probably the fastest and more obvious way to increase milk production per cow on a short term basis, so this would be the ideal candidate to profit from the incentive days. The problem of this practice is the

increased labour and operating costs. Due to this fact, researchers have been investigating if there are key periods in a cow production cycle that respond the most to IMF. It has been established that frequent milking only needs to be implemented for the first 21 days of lactation to



Cont. >>

Inside this Issue...

Short Term Ways to Improve Milk Production

By: Pedro Nogueira



Helps lactating dairy cows combat the effects of heat stress during the hot summer months

Potential Benefits

- Helps replenish lost electrolytes.
- Provides buffering required for the maximum production of rumen bugs.
- Promotes dry matter intake and helps increase ration digestibility.
- Helps improve milk production during hot weather.
- May help reduce breeding problems during heat stress conditions.

CALL YOUR KENPAL SALES REP TODAY FOR MORE INFORMATION

Volume 4, Issue 5
July 2011

see long-term benefits on milk production efficiency. Researchers at University of Maryland conducted a study with 3 groups of cows: one group was milked 4x daily during the first 21 days after calving. This group was compared with another group milked 2x daily from day 1 to day 3 (to allow 2x/day milking during the milk withdrawal period) and then also 4x a day until 21 days in milk. Finally a third group used as control was milked 2x daily from calving to drying off. After 21 days in milk all cows were milked 2x daily until they were dried off. The interesting thing is that the IMF during these first 21 days in milk caused a persistent milk yield increase throughout the entire lactation. Milk yields were 37.8, 37.6 and 34.5 kg/head/day during week 1 to 44 for the respective treatments described above.

Another group from University of Illinois, did the same thing but this time a group of cows was milked 6 x/day during the first 21 days, and then switched back to the regular 3x/day schedule of this dairy. This group was compared against the rest of the cows that had the regular 3x/day milking during the whole lactation. Milking times were 0600, 1400, and 2200 h for all cows, and 6x cows were milked an additional 3 times at 0800, 1600, and 2400 h. Compared with 3x cows, higher milk yields persisted for 6x cows for the first 7 months of lactation, indicating a persistent effect of early lactation milking frequency on milk yield potential for that lactation. Average 305 days production was 12,255 kg for 3x versus 13,373 kg for the 6x group.

As a conclusion, during this period of extra incentive days consider changing milking frequency, at least during the first 21 days of lactation for the greatest impact on production.

Use of feed additives/ingredients – Although feed additives are sometimes viewed as band-aids to cover up for poor management, they really should be viewed as tools to enhance a productive response. They can have different modes of action like modifying rumen environment, impact milk yield or its components, improve immunity/health or improve reproduction/fertility. On the other hand, they can be expensive so it's important to have information from independent research supporting the additive's claims and evaluating its benefit to cost ratio. Nevertheless, now may be a good time to try some of the different additives on the market, especially those which claim increases in milk production and/or in milk components. Here are some products to consider:

- Rumen Buffers – Mainly sodium bicarbonate, sodium sesquicarbonate, potassium carbonate and magnesium oxide. Their objective is to keep rumen pH stable, control acidosis and potentially have a positive effect on milk fat production and in milk production;
- Yeast Culture/Yeast Products – Yeast culture and their fermentation products stabilize the rumen environment and improve fiber digestion. They maintain or increase dry matter intake and milk fat percent. Most benefits are seen in high producing cows or cows in early lactation.
- Supplemental Fat – When used properly, added fat usually maintains or slightly increases milk fat percent, makes relatively little change in milk protein percent and increases milk production. The net result is increased production of milk protein and non-fat solids. Rumen protected fat can be a very valuable additive especially in diets with poor energy forages and/or high starch levels.
- By-Pass Protein Sources – Depending on the diet and its feeds, high quality by-pass protein, like fishmeal or heat treated soy products for example, may be good ingredients to try. Especially in farms having haylage with lower than normal quality (burnt or too wet, for example), an improvement in the quality of protein can be beneficial and its cost paid back by increased production and/or components.
- Monensin –A review of several studies published in the Journal of Dairy Science in 2008, indicates that monensin use in lactating dairy cattle significantly decreased dry matter intake by 0.3 kg, but increased milk yield by 0.7 kg and improved milk production efficiency by 2.5%. Monensin decreased milk fat percentage

Cont. >>

0.13%, but had no effect on milk fat yield; however, there was significant heterogeneity between studies for both of these responses. Milk protein percentage was decreased 0.03%, but protein yield was increased 0.016 kg/d. Dr. Mike Hutjens considers it as having a benefit to cost ratio of 5 to 1 and recommends feeding it to dry cows (to reduce metabolic disorders) and lactating cows (for feed efficiency) while monitoring milk components.

Short dry periods – This strategy allows to immediately obtain more milk, normally rich in constituents, with no negative effects on the following lactation. The standard 60 days dry period was appropriate at the time it was established, but it may be susceptible to change today. The current population of dairy cows has a different genetic pool and producers are using more advanced technologies. Lactation is more persistent, and cows do milk more at drying off. Overall, available information suggests that higher production cows at the end of second or greater lactation can have a reduced dry period of 40 days, without loss of milk in the next lactation.

According to Cornell researchers, the best candidates are cows that are still producing more than 23 kg (50 lbs/day) of milk and who are not carrying twins. Expect that some cows will have low production of colostrum – be prepared to supplement with excess colostrum from other cows. A longer lactation can mean more milk and greater income.

Maximize milk component production – With the current value of milk fat and milk protein it should be a priority to try to maximize its production. Although the major driver of fat and protein yield is overall milk yield, component percentages are also important. Researchers from University of Cornell summarize some of the issues involved with milk component production saying that low milk fat suggests passage from the rumen of unique unsaturated fatty acids that directly inhibit milk fat synthesis and that there is opportunity either in ration formulation (unsaturated fats, carbohydrate balance, forage quality issues) or in ration implementation (dry matters, amounts fed, sorting, etc.). In the case of milk protein, levels below 3.0% suggest that rumen fermentation and microbial protein synthesis is not being maximized, or there are opportunities to improve amino acid balance by use of blended proteins or protected amino acids. The general timeline for the impact of ration changes on milk components is 10 to 14 days after implementation of the change.



EXTRA MILK PROTEIN PAYS

IT PAYS TO FEED YOUR COWS TO PRODUCE HIGH PROTEIN MILK



KICKS RUMEN BUGS INTO HIGH GEAR, HELPING TO BOOST MILK PROTEIN.



BBB PROGRAM - KENPAL'S PREMIER DAIRY COW PROGRAM



HIGH QUALITY BYPASS PROTEIN HELPS GIVE AN EXTRA BOOST TO MILK PROTEIN.

KENPAL CARES, BRINGING YOU...

- **QUALITY PRODUCTS**
- **KNOWLEDGE**
- **COMMITMENT**
- **SERVICE**

It pays to use top nutrition!



CONTACT KENPAL OR YOUR LOCAL KENPAL SALES REPRESENTATIVE TODAY
 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 • www.kenpal.on.ca

Cont. >>

References:

"Modified Dry Periods in Dairy Cattle: Implications for Milk Yield and the Transition Period". 2011 eXtension.

"A Window of Opportunity: Frequent Milking During Early Lactation". Jackson Wright. Cornell University, Cooperative Extension. 2010.

"Ten key herd management opportunities on dairy farms". Tom Overton, Larry Chase, Jason Karszes, Mike Van Amburgh, and David Galton. Department of Animal Science and PRO-DAIRY. Cornell University.

"Hot Topic: Effects of Frequent Milking in Early Lactation on Milk Yield and Udder Health". G. E. Dahl, R. L. Wallace, R. D. Shanks, and D. Lueking. J. Dairy Sci. 87:882-885. 2004.

"Milk Yield and Mammary Growth Effects Due to Increased Milking Frequency During Early Lactation". S. A. Hale, A. V. Capuco, and R. A. Erdman. J. Dairy Sci. 86:2061-2071. 2003.



SILO GUARD® II FORAGE ADDITIVE FOR ALFALFA & CORN SILAGES & BALED HAY

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



**VALUE OF DRY MATTER SAVED
- TREATMENT COST
= DOLLARS SAVED**

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

WE APPRECIATE YOUR BUSINESS

Published by:



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 • www.kenpal.on.ca