



# Dairy Briefs

## The Latest Information on Dairy Cattle Nutrition



### High Production Yields Profits

By: Pedro Nogueira

Recently, in the April 2010 issue of Dairy Herd Management magazine, there was a note about a study from Kansas State University. According to the study researchers found a wide range of profitability among farms. The interesting thing though is that the milk price was not the most significant determinant for profitability. The most significant determinant for profitability was total milk produced per cow. What the magazine reported is that the correlation between profitability and milk price over time is not particularly strong because of the influence that cost has on profit. "When analyzing why some producers are more profitable than others, milk production is a much stronger indicator of profit differences than price or cost," say study authors.

This study again confirms the importance of high milk production per cow, to dilute fixed costs. In one of the last volumes of "Advances in Dairy Technology", Jean Brisson from Valacta presented a comprehensive study on benchmarking in Canada, comparing the top and bottom Quebec herds.

Some of the information that Valacta collects through its work is summarized in Table 1. It analyses different aspects of the dairy enterprise always comparing the top 20 % with the average and the bottom 20% of herds studied. Of the several tables available, we indicate here one related to feed costs (data from slightly more than 3000 Holstein herds in Quebec).

**Table 1.**

Parameter	20% high production	Average	20% low production
Milk Value (\$/cow/year)	6602	5591	4455
Feed costs (\$/hl)	14.58	15.69	17.18
Concentrates cost (\$/hl)	8.60	8.83	9.08
Concentrates dry matter (kg/cow/year)	2949	2583	2083
Feed efficiency (kg milk/kg d.m.)	1.28	1.15	1.04
Forage milk (kg/cow)	2870	2334	1845
Std milk/concentrates ratio	2.91	2.83	2.85

Valacta, Dec. 31, 2006

Cont. >>

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**Living with lower milk prices**

**By: Michael Hutjens**



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Mike, Andrew, & Ed

**The Van Engelen Family, Van Engelen Dairy Farms Ltd.**

Brothers Ed and Mike Van Engelen, along with Ed's son Andrew, own and operate Van Engelen Dairy Farms Ltd. in Thedford Ontario. The Van Engelen's milk 350 cows, and have been working with Kenpal Farm Products Inc. for about 30 years. They are especially happy with Kenpal's BBB program.

Kenpal's BBB program is a premier dairy milk cow program that is flexible because every farm is unique and not all cows have the same feed requirements. It starts with the base vitamin/mineral supplement and builds from there. Kenpal's BBB Program includes Buffers, Binders and Bypass.

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Van Engelen Dairy Farms Ltd. looks forward to continuing with the success they have found in feeding Kenpal's programs.

Mike, Ed and Andrew Van Engelen  
Van Engelen Dairy Farms Ltd.  
Thedford, Ontario

We can see that the top 20% herds feed around 900 kg/cow/year more concentrate than the bottom 20%. Even feeding more concentrate, the feed costs per hectolitre are lower for these herds due to the higher production per cow (it takes less cows to produce 100 litres of milk and consequently feed costs are lower). At the same time these herds have more "forage milk" than the bottom ones (forage milk is the level of production allowed by forages, without any supplemental energy and protein). This combination is interesting. Sometimes on the farms we see a tendency to increase indiscriminately the amount of forage relative to concentrate, but the fact that these farms combine extra concentrate with good quality forage puts in evidence that high producing cows, even with the best quality forage, have a limit to the amount of milk production they can produce only with forage. After that limit they have to eat concentrate to increase milk production.

When evaluating alternatives, producers may consider that **keeping feed costs low is not the final objective, profitability is.** Another table published in a DHI publication (The

Catalyst, Nov/Dec 2007), showing the revenue over cost of production per cow demonstrates that higher production dramatically improves returns (Table 2):

**Table 2: Revenue over cost of production/cow (assuming 3.8% Fat, 3.3% Protein)**

305 Milk (kg)	Revenue	Std Cost*	Net
5,000	\$3,146	\$2,496	\$650
7,000	\$4,404	\$2,900	\$1,503
9,000	\$5,662	\$3,305	\$2,357
11,000	\$6,920	\$3,709	\$3,211

\* Standard cost includes feed, overhead and interest on quota – excludes debt, depreciation, management/owner salary and profit. In "Dealing with high feed costs" The Catalyst, CanWest DHI, Nov/Dec 2007.

Of course we should always aim to reduce feed costs, due to the fact that they represent the single most important cost in milk production. But remember, if you lower your feed costs but also lower your milk production, you're not making any gains.

**References:**

- "Production key to dairy profitability". Dairy Herd Management. April 2010.
- "Dealing with high feed costs". The Catalyst. Canwest DHI, Nov/Dec 2007.
- "Benchmarking: what the top and bottom herds in Canada are doing". Jean Brisson. Advances in Dairy Technology (2008) Vol 20: 3-13.

The following is an article written by Michael F. Hutjens, for the Hoard's Dairyman publication in USA. We thought you might be interested in reading this article as it outlines some key points about keeping costs down.



## Living with lower milk prices

Key factors will be forage quality, strategic use of by-product feeds, and watching benchmarks. Do not sacrifice performance, herd health, or reproduction.

by Michael F. Hutjens

**S**ome owners and managers had advantages compared to others going into the 2009 low milk prices with higher feed prices and other economic pressures.

- Midwest dairy producers had ample supplies of forages and corn produced on the farm. This advantage reflects their crop-growing skills, but they may not have captured higher market prices if they sold feed.



### HUTJENS

The author is an extension dairy specialist at the University of Illinois, Champaign-Urbana.

- Others had not expanded or modernized as others had and had paid down debt. They avoid big bank and interest payments. Stable land equity allowed lines of credit to extend compared to dairy cows that lost 25 to 50 percent of their value.

- Modest-sized dairy farms use family labor as their main resource.

- With herd sizes under 150 cows, some people could qualify for the full MILC program. Not using BST resulted in 25 to 65 cents per hundredweight for some people.

- Some people culled the bottom 25 to 30 percent of their herd to reduce losses and save feed for the remaining herd.

It was important that people not make short-term decisions to save a nickel while leading to a long-term loss of a dollar. Here are examples of key decision choices that could have backfired:

- Reduce or remove minerals and vitamins. It can save 6 cents (heifers) and 20 cents (lactating cows) a day. Because minerals do not immediately reduce milk yield, some people thought this may be a prudent move. However, when mineral deficiencies occur six months later (reduce immunity, slower growth, and declining fertility), it results in large negative economic impacts.

- Short-changing heifers. Holstein heifers must gain over 1.7 pounds per day if they are expected to calve at 23 to 24 months weighing 1,250 pounds after calving. The cost of delayed calving is \$2 per day.

- Cutting back on vitamins and minerals can lead to a rise in somatic cell count. For example, removal of organic trace minerals, feeding less vitamin E, or cutting back on energy will lead to a loss of 2 to 2-1/2 pounds of milk per 1-point rise on linear somatic cell score.

- Anything that leads to an increase in days open will cost \$2 per day (over 120 days) to \$8 per day (over 180 days). This could be related to negative energy balance due to removal of fat, limiting dry matter intake, or removing effective feed additives.

- Dropping an accelerated heifer feeding approach can reduce milk yield in the first lactation by 1,100 pounds.

Focus on additives that return 3 to 10 times the out-of-pocket cost of the feed additive. (For example, a buffer returns 30 cents in added milk for a 6-cent investment). My priority list of recommended feed additives ranked in order are: monensin (an ionophore), yeast-based products, silage inoculants, organic trace minerals, rumen buffers, and biotin. Each owner/manager and nutritionist should consider the value of these when making decisions.

Shifting from a one-group TMR to multiple TMRs may be an alternative. Feeding a ration higher in forages to lower-producing cows can

Table 1. Target feeds, level of intake (pounds of dry matter), and feed benchmark values\*

Feed ingredient	DM (lbs.)	Cost (lbs./DM) (\$)	(Cost/day) (\$)
Forage	28	0.06	1.68
Grain-energy	10	0.07	0.70
By-products	6	0.10	0.60
Protein supplement	5	0.10	0.50
Min/vit/additive	1	0.40	0.40
Consultant	na	na	0.10
<b>Total</b>	<b>50</b>	<b>0.80</b>	<b>3.98</b>

\*Holsteins producing 70 to 80 pounds of milk

save 75 cents or more per day and can improve metabolic health of late-lactation cows. High-producing cows may need more nutrients to replace lost body weight in late lactation. Heifers may need added nutrients for growth. Another consideration is whether the one-group TMR contains expensive nutrient sources (such as inert fat, amino acids, added fat/oil, rumen-protected choline, or high-quality rumen-undegradable protein sources) that are needed by high-producing cows. The more expensive your ration, the more you should consider more than one TMR.

When you make changes, cows will respond (actually "talk" to you). Monitor these cow measurements to determine whether your change led to lost income or higher costs:

- Target 8 to 14 mg/dl MUN to avoid lost nitrogen while maintaining milk protein.

- Your milk protein and milkfat test levels should meet or exceed breed averages.

- Your management level milk or 150-day milk should be holding steady, if not improving.

- Consider fecal scoring to make sure manure is not too solid or too loose. (The range should be from 2.5 to 3.5 units.)

- Look for benchmark changes. (Table 1.)

- Strive for herd feed efficiency between 1.4 and 1.7. Each change in 0.1 point change in feed efficiency is roughly worth 24 cents per cow per day.

- Determine feed cost per pound of dry matter. A cost of 8 to 9 cents per pound of dry matter reflects the cost of feed ingredients selected when building and balancing the ration.

- Feed cost per hundredweight (\$5 to \$6) reflects feed cost, intake including weigh backs, and milk yield.

- Income over feed costs represents the margin for fixed costs, other variable costs, labor, and return to management.

### Strategies that have worked

- Forage quality is a key. Consider boosting corn silage levels as feed cost per cow per day may drop 15 to 30 cents. Evaluate the use of low lignin forages and forages high in NDF-D.

- Use of computer modeling programs. Lower levels of protein based on amino acid balancing and rumen microbial estimation can reduce feed costs.

- Ensure that starch levels and starch utilization are optimal. Lower levels of starch (20 to 22 percent) can maintain milk with high-quality forage, rumen fermentable fiber, added sugar products, feeding an ionophore, or a combination of these. Plant or kernel processing of corn silage and processing corn grain can improve starch availability. If fecal starch is more than 5 to 6 percent, examine sources and processing.

- By-product feeds can be a good fit. Distillers grains and wet brewers grains can reduce protein costs. Corn gluten feed, soy hulls, and wheat midds can maintain energy levels while reducing costs. (Table 2.)

- Review shrink losses. Managing weigh backs can increase profitability. One guideline is to target 1 to 2 percent weigh backs.

Table 2. Breakeven prices for various by-product feeds and recommended levels of inclusion in lactating cow rations\*

By-product	Breakeven price (\$ per ton)	Level (% ration DM)
Soy hulls	\$109	10
Cottonseed, fuzzy	\$230	10
Corn gluten feed	\$140	25
Brewers grain (30% DM)	\$66	15 to 20
Corn hominy	\$140	10 to 20
Corn distillers grains	\$252	10 (> 10% oil) 20 (< 10% oil)

\*Feed Val 3 was used to calculate breakeven prices with soybean meal entered at \$350 a ton, shelled corn at \$3.50 a bushel, tallow at 30 cents a pound, dicalcium phosphate at \$25 per hundredweight, and limestone at \$10 per hundredweight.

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