



# Dairy Briefs

## The Latest Information on Dairy Cattle Nutrition



### Give Your Cows a Boost: Feed Lacta-Fat Laura Martin, M.Sc

Corn silage crops had a challenging year again with the cool summer weather, potentially reducing the grain development in the plant. Ration adjustments may be needed to deal with reduced energy in the corn silage, and possible extreme cold weather. Increasing the amount of grain fed may not be the best solution as this can cause its own problems. Adding liquid Lacta-Fat to the ration as a concentrated energy source may be a good tool to use this year at a lower cost than dry fats.

Fat has been shown in many research trials to increase milk production. Increases of 1 – 3 kg of milk with added fat are common. This increase in milk production typically occurs because cows in early lactation cannot physically eat enough feed to meet their energy needs.



With potentially lower energy in the corn silage this year this problem will be compounded with lower energy rations. By providing concentrated energy, in the form of Lacta-Fat, this allows the energy in the ration to increase with minimal effects on starch or fibre levels, helping to maintain a healthy rumen and support butterfat production.

Providing energy-challenged cows with Lacta-Fat may also have a positive impact on reproduction. Researchers reported higher first service conception rates and shorter calving intervals in dairy cows fed added fat. There is also research suggesting that it is not just the extra energy provided by the fat that accounts for this response, but that the

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Inside this Issue...

*Give Your Cows a Boost: Feed Lacta-Fat*

By: Laura Martin, M. Sc, Nutritionist



### Benefits of Feeding Lacta-Fat

Lacta-Fat® liquid fat may provide many nutritional benefits to animals along with many handling and economic benefits to the producer.

#### Here are just a few:

- 🔹 Increased milk production.
- 🔹 Maintains or improves butterfat.
- 🔹 Cows peak higher and faster.
- 🔹 Improved feed efficiency.
- 🔹 Decreased loss of body weight in early lactation.
- 🔹 Maintains energy intake during hot weather.
- 🔹 Reduces separation in mixed feeds and TMR rations.
- 🔹 Reduced dust levels.

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fat itself may positively affect hormone levels to improve reproduction. Providing extra energy in the form of Lacta-Fat may also help cows retain condition, or gain back lost condition faster. Fat may also reduce the risk of metabolic disorders like ketosis and fatty liver.

There are many different feed options when it comes to adding fat to the ration. Most feeds typically have some fat in them, even haylage and corn silage. But there are certain feeds or products that are concentrated sources of fat (Table 1). Oilseeds like soybeans, canola, and cottonseed are all feeds that have high fat levels. Other products, like liquid Lacta-Fat, and specialty dry fats provide fat as the primary nutrient. These fat sources can be split into two main types: rumen unprotected fats (RUF) and rumen protected fats (RPF). RUF are fats that, while they aren't digested by the rumen microbes, they can impact the rumen environment. These fats include the oilseeds and Lacta-Fat. The RPFs are specially processed to have very little effect on the rumen, allowing for higher amounts to be fed, however they tend to be more expensive than the RUF options available.

**Table 1: Fat and Energy Profiles of Different Feeds**

Feed Ingredient	Fat (% DM)	NEL (Mcal/kg)	Saturated Fat %
Haylage	2.5	1.40	--
Corn Silage	3.0	1.60	--
Dry Corn	4.0	2.01	--
Whole Cottonseed	19.0	1.94	29
Whole Soybeans	19.0	2.75	15
Tallow	99.8	4.53	48
Lacta-Fat	99.9	5.96	36
Animal-Vegetable Blend	99.9	5.09	28
RPF Fat	99	4.12	85

*Adapted from NRC 2001 and SGS Agrifood Labs*

### Introducing Cows to Lacta-Fat®

1. Start feeding Lacta-Fat® at the rate of 0.11 kg (0.24 lbs.) per head per day. Maintain this level for 7 to 10 days.
2. Increase feeding rate by 0.11 kg (0.24 lbs.) per head per day every 7 to 10 days until maximum levels are reached - around 0.35 kg (0.77 lbs.) of Lacta-Fat® per head per day depending on the feeding program.
3. If feeding a by-pass fat, replace Lacta-Fat® on an equal weight basis. E.g. Introduce Lacta-Fat® at 0.11 kg (0.24 lbs.) per head per day and reduce by-pass by 0.11 kg (0.24 lbs.) per head per day.

RUF are one of the reasons that feeding fat has limitations. Fats that are high in unsaturated fatty acids are thought to "coat" the rumen microbes, and perhaps even the feed itself, preventing proper fermentation and reducing digestibility of the total ration. While the fibre components of the ration may not have as much energy as the grain components the rumen microbes are still able to turn this fibre into energy. However if that process is blocked then adding too much of the wrong fat to the ration can backfire and actually end up reducing the energy in the ration. Lacta-Fat is a unique blend of animal fat and vegetable oil. Even though this classifies it as a RUF it contains a high level of tallow which allows for a highly saturated fatty acid profile. This fatty acid profile should

lessen the impact on the rumen microbes allowing for an increase in dietary energy with minimal impact on rumen fermentation. The highly saturated nature of this product means that it is a solid at room temperature. Heated tanks are available to use at a minimum operating cost to keep the fat in liquid form for ease of feeding on farm. RPF “bypass” the rumen completely and are unlikely to reduce ration digestibility.

Fats have the potential to reduce feed intakes. One of the reasons is palatability or off-odours of different fat sources may put the cows off-feed. Fat sources can go rancid, causing both off tastes and smells, if not stored and managed properly. Lacta-Fat contains an antioxidant to ensure long lasting stability in storage and in feeds. This reduces the chance of off-odours/flavours developing due to rancidity. It is a good idea, if fat is being added to the ration, to slowly increase the fat level to allow cows to adjust to the new taste. If intakes are reduced it may just end up cancelling out the energy that has been added to the ration on a per cow per day basis.

The amount of fat that can be added to a ration depends heavily on other feeds that are in the ration. Low fibre diets or diets that are heavily based on corn silage seem to be more sensitive to the reduction in rumen fermentation that feeding added fat can cause. Feeding co-products, such as corn distillers, that can have high levels of fat themselves, can also impact how much fat can be added to the ration. The best way to balance fat in a ration is to limit it based on % DM rather than give a static amount per cow per day (Table 2). Fat from RUF sources should not exceed 5% of the ration dry matter. Of this 5%, 2-3% should come from the forages and grains and the remainder can come from added fat in the



### Lacta-Fat® Quality

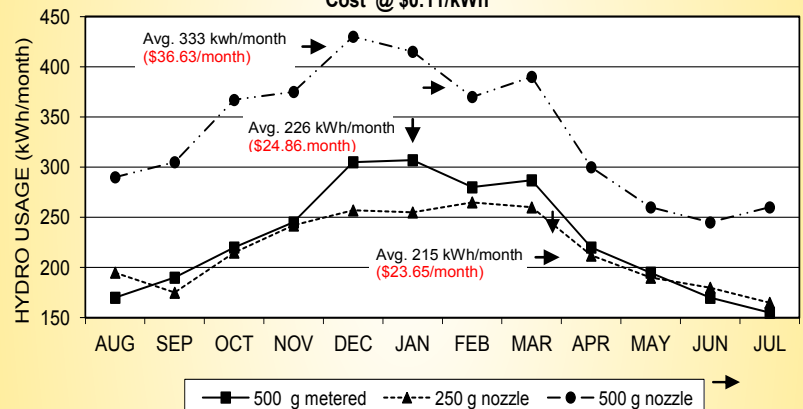
To assure customers of the highest standards of product quality, Lacta-Fat® has developed strict specifications for the formulation of its liquid feed fat.

Ethoxyquin is added as an antioxidant to ensure long lasting stability in storage and in feeds.

The blend is delivered to the on-farm fat system at a temperature that will require minimal energy to keep the fat fluid for application needs.

### Lacta-Fat® Tanks Proven Energy Efficient HYDRO USAGE PER MONTH (kWh)

1992-93 ONTARIO HYDRO STUDY  
Cost @ \$0.11/kWh



3 TANK AVERAGE 258 kWh/month



**Lacta-Fat® on-farm storage systems are designed to keep liquid feed fat in peak condition, to ensure maximum protection of livestock health and fat nutritionally.**

form of oilseeds or animal fat-oil blends. An additional 2-3% RPF can be added if needed to bring the total dietary fat up to 8%. Anything over this level can cause problems with digestibility and intakes. A properly balanced diet is the key to successful Lacta-Fat feeding.

**Table 2: Fat Source Limits in Rations**

Fat Source	% DM Limit
Total Fat (RUF + RPF)	8%
Total RUF	5%
RUF from forages and grains	2-3%
RUF from added fat sources	2-3%
RPF	2-3%

Economically it is best to maximize the amount of Lacta-Fat before adding additional RPF to the ration. RPF have lower risk when it comes to impacting digestion however this comes with added cost. It is always important to monitor intakes and production changes when adding a new feed additive on farm. When adding Lacta-Fat to diets monitor milk production. It should increase with increasing added fat, however it will reach a plateau where adding more fat does not produce more milk. After this plateau, if more fat is fed then milk production will actually start decreasing as digestibility and intakes are affected. Keep an eye on production to ensure that the addition of fat to the diet increases production and increases profits.

Adding Lacta-Fat to rations can increase milk production even when excellent quality forages are fed. Adding Lacta-Fat to rations in years where forage values are not optimal can improve milk production, and provide much needed energy for the cows to get bred and stay healthy. Fat type and source play a big role in feeding rates and handling.



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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)