



# DAIRY-UPDATE

VOLUME 4  
Issue 1  
September, 2009

## Corn Silage: \$\$\$ on the Table at the Chopper and at the Silo

by Tom Kilcer

*Tom Kilcer is a Certified Crop Advisor from Kinderhook, New York. His main focus is consulting on forages. This Dairy Update features some timely advice from Tom's September newsletter, Advanced Ag Systems Crop Soil News.*

Corn Silage is starting to roll into the bunks. The excess rainfall has denitrified a number of fields and so the nitrogen short crop is drying down much faster than anticipated. Fields with excess nitrogen are maturing much slower (excess N will delay dry down).

With income/cost in the negative territory, making every ton count is critical.

### Length of Cut: are you optimizing fat and protein in your milk?

Is it the correct particle size? Particle size has a huge impact on the ability to produce milk and money. *For choppers without a processor, set to a 3/8 inch cut and 5 – 10% on top particle screen. For processed, set your knives to a 3/4 inch cut with 10 – 20% on top screen.*

A few farms that are feeding greater than 60% forage in their diet are actually decreasing their length of cut and the amount on the top screen in order to get better packing and more rapid and complete digestibility of the forage. With a high forage diet, there is still more than enough effective fiber to meet the animal's needs.

To meet fiber requirements, you need:

1. Enough forage for greater than 60% diet all year;
2. Already be at greater than 60% in the diet,
3. Have some haylage in the diet for effective fiber.

Conversely chopping fine and then going to a low forage diet is a prescription for disaster.

**YOU CANNOT SET THE CHOPPER BY THE BOOK. EACH CHOPPER TYPE, CORN VARIETY, AND MACHINE OPERATOR GIVE DIFFERENT RESULTS.**

### Check the Forage Particle Screen

Farms are realizing the profit in fat and protein, as affected by particle length, by purchasing their own forage particle screen to **check field by field at chopping** – not when you are finished with harvest. You will be feeding the results to your cows for the rest of the winter and next year – there is a lot of money to be made by getting the fiber right.

A second machine adjustment is the effectiveness of the processor. Just because a chopper has a processor, it doesn't mean the corn and cows benefit. Proper processing uses more fuel and slows the machine. Processors wear out much sooner than you would think, and are expensive to repair. As they wear, they do less processing unless they are re-gapped. So how do you know if you have the correct setting ?

### Test your silage before it goes into the silo

Take a double hand full of silage and drop it into a 5 gallon pail of water. Swish it around and dump the water and floating silage off. The kernels will be on the bottom. **If 95% of kernels are not nicked or crushed, the processor needs to be reset** – you are not getting your money's worth. This should be done as you go from field to field through harvest. To check your **non-processed corn** take the same 5 gallon pail test. **About 30% should be nicked or broken at the bottom of the bucket.**

### Insufficient Packing

For those with bunk silos, insufficient packing is the biggest loss of forage and limit to milk production. With feed coming in at 3 – 5 times faster than haylage, especially with the larger tractors and custom harvesters, packing simply becomes leveling before the next truck arrives. Faster, efficient harvest is good. Filling faster than you can pack effectively is not. What is gained in the field is lost in the silo. The second problem with filling faster is that farms have not adjusted to the rapid accumulation in the silo. Where a progressive wedge in haylage means only a 4 – 5 inch fill layer to pack, corn silage often has in excess of 12 inch layer to pack. Work by Kurt Ruppel showed that **ANYTHING GREATER THAN A 6 INCH LAYER IS NOT PACKED!**

For example, on one farm John Conway of ProDairy found **THERE WAS 41% MORE STORAGE BY SIMPLY PACKING CORRECTLY**. As a bonus, instead of losing 18% of the dry matter through poor fermentation, they only lost 10%. The bigger cost was the storage lost from fluffy packing. The less density, the more storage needed to hold the forage supply. The additional cost plus the cost of the dry matter lost through the poorer packing meant "business as usual" costing \$38,968 (\$US). In other words, the farmer could

DAIRY UPDATE – September 2009

have rented a tractor and driver for \$20,000 to pack effectively and still came out \$18,000 ahead.

In these tight economic times, you can reduce the cost of meeting the cows' nutritional needs by getting more of the nutrients from forage rather than purchased concentrate. As you move to above 60% forage in the diet, more storage is needed. The fastest, cheapest, most effective method to increase storage is to dramatically increase the packing.

### **Packing Forage Correctly**

One local farm increased silo capacity 50% by improved packing. Some farms contract with grain farmers to bring over their biggest tractor and custom pack. Others contract with loggers to bring in their heavy skidders to pack. Still others have used vibrating rollers from road construction to custom pack. There is no replacement for packing. *You need to get more than 800 lbs of packing weight/ton of silage delivered each hour.* Less than this means that storage, dry matter, and feed quality are lost. Greater packing is more feed and quality to the mouth of the cow.

Mr. Conway also found that as soon as farmers pack above the wall of the silo, dry matter density dropped very low (26% less) and dry matter losses skyrocketed. Numerous studies have found that the feed quality (potential milk/ton) above the wall is far less than within the walls. Every 4 inches of visible spoilage represents a foot of lost silage. In typical silos that loss is over \$16,000 of forage that you paid to grow but is not available to make milk for you.

---

## **Effective Calf Management**

*By Laura Morris*

---

As part of my training with BSC, Colin and I headed to the Miner Institute in Chazy, New York. This was my first visit to Miner and it didn't take me long to realize that great things are being done there. They have a research herd of 400 milking cows and just finished a new dry cow research facility. During the course, we were in the classroom learning about cutting edge dairy research as well as in the barn going over some practical management tools. I came home from that course with a head full of information and my thinking was changed on a few seemingly straight forward concepts – one being calf management.

We all know the importance of prompt feeding of significant amounts of colostrum for the passive immunity transfer, but just because the colostrum gets into the calf, does not mean that the immunoglobulins get into the bloodstream. If the colostrum is contaminated with bacteria, the channels will close and the colostrum will not actually do its job. So remove calves from the maternity pen immediately after birth, use clean milking equipment, bottles,

stomach tube and feed enough colostrum. Without effective passive transfer, we see decreased growth, increased age at first conception, decreased survival rate and less milk output once the calf is part of the milking herd. One study found that a cow will give over 1000 kg more milk by the end of 2<sup>nd</sup> lactation if she was fed 4 litres of colostrum instead of 2 litres just after birth (Faber, 2005). This seems subtle, but it's just another way to put more milk in the tank.

I always understood how effective feeding of calves led to bigger heifers and therefore heifers could calve at 24 months, but I didn't realize that this could translate into significantly more milk in the tank. Data from an ongoing study at Miner institute is showing that heifers are producing, on average, 1761 kg more milk by 200 days in milk when they are being fed ~2.2 lbs of milk replacer powder compared to the control group that is being fed 1.3 lbs of milk replacer powder. This is significant, especially when every first lactation heifer could be producing like this. Figuring at a cost of 96 cents per pound for standard milk replacer, an investment of an extra \$40 in milk replacer per calf could return over 1761 L of milk in first lactation. At 70 cents a litre for milk, the money would be well spent and result in a profit of \$1233 per cow – if we could see these results in the barn. These are only preliminary results at Miner, but findings are similar to other research.

It's becoming clearer that we tend to not feed our calves enough, especially in the winter when their maintenance requirements are higher. I don't think it matters whether the intake is in the form of milk or grower, but more intake means more milk later on. Effective management of calves turns into profitable cows down the road.

\*Faber, S.N., Faber, N.E., McCauley, T.C. Ax. 2005. Case Study: Effects of colostrums ingestion on lactational performance. Prof. Anim. Scientist 21:420-425

\* Van Amburgh, M., Nutrient requirements and nutritional management of dairy heifers. Department of Animal Science. Cornell University

-----  
**DAIRY UPDATE** is published in the interest of helping dairy producers become more profitable. We welcome your comments.

BSC Animal Nutrition Inc.  
R.R. # 4, St. Marys, Ont. N4X 1C7  
Toll Free: 1-800-268-7769  
Telephone: 519-349-2190  
Fax: 519-349-2191  
E-mail: info@bscanimalnutrition.com

### **BSC Representatives**

Peter Vingerhoeds 519-229-8810  
Ben Dekker 519-899-4769

### **Ruminant**

Colin Pool Res 519-674-2159  
Fax 519-674-2553  
Laura Morris Cell 519-854-3012

**Visit our new website at:  
[www.bscaanimalnutrition.com](http://www.bscaanimalnutrition.com)**

-----