Dairy One Forage Laboratory

November 2016 Newsletter

In This Issue

Join Our Mailing List

Click here to check out the Dairy One blog!

Evaluating Corn for Harvest and Inventory Planning

What can fecal starch tell us?

By Sally Flis, Ph.D. - Feed and Crop Support Specialist

In March we introduced Fecal Starch by NIR for dairy samples. Fecal starch is used to examine the extent of starch digestibility. The four biggest factors that influence starch digestibility of a diet and starch content in fecal samples are:

1. **Particle size** - poorly ground or processed grain will have a negative impact on starch digestibility.
2. **Corn silage processing** - related to the above, poorly processed kernels in corn silage can result in lower digestibility. Use the Corn Silage Processing Score (CSPS) as an additional analytical tool to monitor particle size and starch availability.
3. **Moisture content** - drier grain in corn silage (>35%DM) tends to be less digestible.
4. **Fermentation** - will enhance starch digestibility over unfermented corn. Additionally, digestibility continues to increase in storage for 4 - 6 months after ensiling.

Interpretation of Fecal Starch - Fecal starch results are reported as a percentage of the dry matter.

Fecal Starch, % DM	Interpretation
< 3%	Starch digestion is good and there is no need to investigate starch sources.
3 - 5 %	Total tract starch digestibility (TTSD) is 95% or better. May have some opportunity to adjust rations or management practices.
> 5%	Starch digestibility can be improved, individual sources of starch should be investigated.

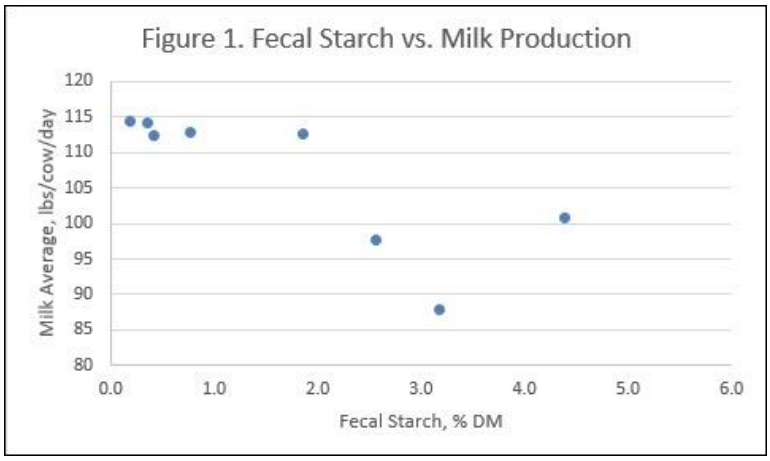
As part of a project evaluating corn silage processing score (CSPS), we took fecal samples across three farms to evaluate fecal starch. Cows were sampled in 4 pens on three different farms and fecal starch indicates that starch digestion in the majority of the samplings is good (Table 1). Corn silage sampled was all adequately to optimally processed (Table 1).

The improvement in the fecal starch in pens A and B from sampling 1 to sampling 2 was likely influenced by season (Table 1). Sampling 1 was done in March and sampling 2 was done in June, the effect of increased starch digestibility due to longer ensiling time of corn silage likely helped improve total starch digestibility.

Table 1.
Fecal Starch, % DM Pen Averages

Pen	Sampling	Fecal Starch, % DM	CSPS
A	1	3.17 ± 1.67	65.1
B	1	4.39 ± 2.46	78.4
C	1	0.35 ± 0.33	66.4
D	1	0.19 ± 0.20	66.4
A	2	2.57 ± 0.89	67.6
B	2	1.85 ± 1.05	70.9
C	2	0.41 ± 0.42	66.3
D	2	0.77 ± 1.00	66.3

Overall Average | 1.71 ± 1.55 | 68.4 ± 4.39



Pen average milk production was also recorded on the sampling dates. Milk production was plotted versus fecal starch. When fecal starch was below 2 % DM, milk production was highest (Figure 1).

Fecal starch is an important tool to identify where you may be missing milk, even in high production pens.

Meet Marti-Jo Russell

Hi. My name is Marti-Jo Russell and I have spoken with many of you over the last 14 years as a member of the Forage and Soils Lab Customer Support Team. Recently, I was promoted to Customer Support Leader and am enjoying my new role. Included in my responsibilities are oversight and work direction of the Customer Support Group, daily data input, generation of electronic and printed reports, phone support, helping test new computer programming, custom report generation, statistical reporting, accounting and helping troubleshoot when computer programs go awry. With all of this responsibility, my biggest challenge is being pulled in multiple directions by fellow staff members and customers - all of whom want to be first on the list! Prioritization and time management are a big part of my new job and I do my best to keep everyone happy.

To broaden my horizons, last year I stepped into the lab and learned how to perform Gross Energy analyses by bomb calorimetry. It's interesting to analyze the wide variety of samples that come into the lab. Did you know that crickets have a Gross Energy value of 5549 cal/g compared to alfalfa hay at 4626 cal/g? The alfalfa hay sample was excellent in quality at 26.0% CP, 34.2% aNDF and 3.2% fat. The crickets, were 65.6% CP and 17.6% fat. It's the high fat content that gives the crickets the edge in Gross Energy. So if you're ever starving, crickets would make a potent snack! This was my first foray into performing actual analyses and I am now the official back-up person for Gross Energies. It will be difficult in my new position to serve in this role, but now that I've learned it I want to be able to keep doing it from time to time to stay sharp!

Outside of work, I enjoy spending time with my family and keeping up with our two little girls (5 & 3 years old). I am also fascinated by sharks with my favorite being the Great White. I've taken courses in biodiversity, biology and conservation through Cornell University and the University of Queensland, Australia. I'm a regular shark junkie and can't wait for "Shark Week" every year!

My favorite part of working for the Forage & Soil Lab is being able to speak with and help people from all over the world. Its rewarding working with customers from six continents (nothing from Antarctica yet) and doing my best to meet their analytical needs.

"Thanks and Best Wishes" to

Many of you have had the privilege of meeting and working with Sally Flis, our Sales & Technical Support Specialist. Sally has accepted the position of Director of Agronomy with The Fertilizer Institute (TFI) in Washington, D.C.. Sally did a great job for us and will excel in her new position. We'll miss her and wish her great success in her new role.

This also leaves us with a void to fill. A posting for Sales and Tech Support Specialist appears on our website. In the meantime, please contact Paul Sirois (800-344-2697, ext. 2038 or paul.sirois@dairyone.com) if you have questions or interest in this position.

Upcoming Events - Come see us!

November 9th and 10th, 2016
Penn State Dairy Cattle Nutrition Workshop
Grantville, Pennsylvania
http://www.cvent.com/events/dairy-cattle-nutrition-workshop/event-summary-fcbb5940048843a5aed030116252c487.aspx

November 18th, 2016
Cornell Feed Dealers Seminar
Batavia, New York
https://ansci.cals.cornell.edu/news-events/feed

Dairy One - Forage Laboratory
730 Warren Road ~ Ithaca, NY ~ 14850
Phone: 1-800-344-2697 Ext. 9962

www.dairyone.com ~ www.facebook.com/DairyOne