



# Dairy One

Forage Laboratory

## September 2014 Newsletter

### In This Issue

[Corn Silage Survey](#)

[Corn Silage Harvest](#)

[World Dairy Expo](#)

[Forage Lab Note](#)

[Feed Inventory](#)



Click below to  
take our Corn  
Silage Survey!



### Are you ready for corn silage harvest?

September is here: are you ready to harvest your corn silage? Do you know how you are going to check your dry matter to determine harvest date? What samples are you going to take, and what are you going to test for?

#### Checking Harvest Dry Matter

Corn silage should be between 50% and 70% moisture at chopping to provide for the best fermentation. This is dependent on the type of storage used (Table 1). What is the best way to check and see if your silage moisture is correct for harvesting? It can be difficult to get a moisture percentage on your corn before harvest. If your chopper is equipped with a moisture monitor, this is an easy number to determine. If not, harvest some corn silage from the field with your chopper and test the moisture. A third option is to hand cut some stalks from the field and chop them through your chopper or through a wood chipper. Moisture of the samples from field chopping or using a wood chipper can then be determined using a microwave or a Koster tester.

Storage Structure	Recommended Moisture Content for Ensiling, %	Kernel Milk Stage Trigger, %
Horizontal Bunk Silos	70 to 65	80
Bag Silos	70 to 60	80
Upright Concrete Silos	65 to 60	60
Upright Oxygen Limiting	60 to 50	40

University of Wisconsin - Agronomy Department, January, 1998, Joe Lauer

#### Procedure for Determining Dry Matter with a Microwave

For this procedure you will need a microwave, a microwave safe dish, and a scale.

1. Pre-heat the microwave safe container for 10 to 20 seconds on full power in the microwave to remove any water.
2. Weigh empty, dry dish and record the weight.
3. Place sample in the dish and record combined weight. Using 100g of sample will make calculations easier.
4. Place 6 oz. glass of water in the back of the microwave to protect the microwave; maintain the level of water in the glass though the procedure.

5. Place the sample in the dish in the microwave and run on full power for 3 minutes. Remove, weigh, record, and mix.
6. Place the sample back into the microwave and run on full power for 1 to 3 minutes. Remove, weigh, record, and mix.
7. Repeat step 6 until weight lost between intervals is 1.0 g or less.  
**Watch the sample carefully during the process to avoid smoke or fire in the microwave. If sample smokes in the microwave, you will need to start over with a new sample.**
8. Calculate Dry Matter:  $[(\text{Final sample and dish weight} - \text{empty dish weight}) / (\text{wet sample and dish weight} - \text{empty dish weight})] * 100 = \text{Dry Matter \%}$

Dry matter should be checked in every field for best harvest and fermentation results.

*When to Sample and What to Test*

Even though you are not likely feeding your corn silage at chopping, testing fresh chopped forage for quality factors like NDF, ADF, and lignin can help you decide how to segregate corn silage for feed out. A measure of starch taken at this time will tell you total starch in the forage, but will not be a good indicator of starch available when the forage is fed. The values for corn silage samples at green chop could also be used if you are selling the silage.

It has been shown that corn silage starch availability changes the longer the silage is stored. Overfeeding starch can cause rumen acidosis, decreased intake, and foot problems. Newbold et al. (2006) reported that starch degradability increased as months in the silo increased (Table 2). The starch digestibility in this study was evaluated by ruminal in situ. In 2012, Der Bodrosian et al. evaluated the changes in starch digestibility, measured by 7h in vitro, on a normal and BMR corn hybrid. Their study also reported that starch digestibility increased with time stored, but was dependent on the dry matter at harvest and the hybrid. The conclusion of these studies is to sample corn silage frequently once you begin feeding out so the proper adjustments can be made to the starch and fiber in the ration to avoid health problems.

Months in Silo	Starch Degradability, %
2	53
4	54
6	59
8	64
10	69

Fresh crop corn silage can be tested by field, by harvest date, by harvest, or by storage location. Be sure to think about your sampling strategy before you start sampling so the samples you take have meaning. Additionally, monitoring the variability of your crop by field or hybrid can help you plan for 2015.

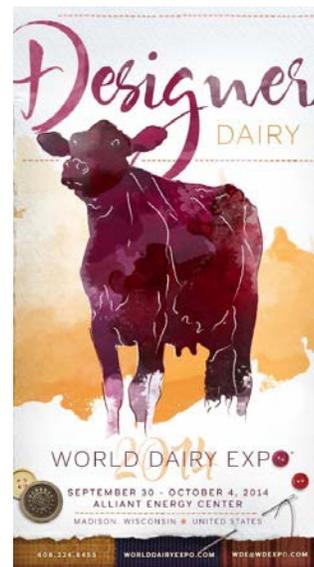
Dairy One handles fresh chop corn silage samples every year. For more information on submitting samples visit: <http://dairyone.com/analytical-services/feed-and-forage/submitting-forage-samples/>

Der Bedrosian, M.C., K.E. Nestor Jr, and L. Kung Jr. 2012. The effects of hybrid, maturity, and length of storage on the composition and nutritive value of corn silage. J. Dairy Sci. 95:5115-5126.

Newbold, J.R., E.A. Lewis, J. Lavrijssen, H.J. Brand, H. Vedder, and J. Bakker. 2006. Effect of storage time on ruminal starch degradability in corn silage. J. Dairy Sci. 84(Suppl.1):T94. (Abstr.)

## The Dairy One Forage Lab will be at World Dairy Expo this year for the first time!

Sally Flis and Paul Sirois will be at the show all week, here from September 29th to October 4th in Madison, WI. Come by and see us in the Arena at **Booth 209** to talk to us about what you are seeing at WDE, show specials, and new services.



## Forage Lab Note:

*Calculation Adjustments* - some minor adjustments have been made to the NFC and KD calculations. The NDICP adjustment has been dropped from the NFC calculation and a particle size correction factor has been added to the KD calculation. This will result in NFC values averaging 0.5 - 3.5 percentage points lower and KD values 0.4 - 1.4 percentage points lower. Please contact us with any questions.

## Feed Inventory

Do you know how much feed you have or how much feed you need? Managing feed inventory will help a farm track feed use, loss, cost, and project need from year to year for crop planning.

1. *How much do I need?* The place to start is to know how much of each feed is needed for the year. The advantage to this is that, for example, as corn silage is being harvested this fall, it can help in

making the decision to continue to chop or to be able to hold some fields for snaplage, high moisture ear corn, or dry corn grain. Monitoring dry matter and quality through harvest can also help determine how to segregate during storage. Similarly, in hay harvests, knowing your needs can help make decisions about when to harvest for silage versus dry hay. A very important part is to keep records while harvesting so that loss during storage or feed out can be monitored during and at the end of the year.

2. *Feed Out Record Keeping.* Knowing how much feed there is available on any given day is important for making decisions through the year. It can be used to determine assets on the farm, how many animals can be fed for the rest of the inventory, what is needed to expand herd size, and cropping plans. This can be done on paper or with a computer program. Whatever you choose for a record keeping system, make sure you evaluate it over time so that it is working.
3. *Evaluation.* It takes some work to keep records of feed out and harvest, so make sure to work with the feeder, nutritionist, and agronomists to make the data collected most useful to everyone.

Like us on Facebook 

Dairy One - Forage Laboratory  
730 Warren Road ~ Ithaca, NY ~ 14850  
Phone: 1-800-344-2697 Ext. 2172

[www.dairyone.com](http://www.dairyone.com) ~ [www.facebook.com/DairyOne](http://www.facebook.com/DairyOne)