

# MEASURE AND MANAGE

## Corn Silage Update 2005

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Corn Silage was ready to be harvested in most areas in late August early September. We advised taking whole plant moisture samples to determine the time to harvest. Corn silage at 60 to 69% whole plant moisture or 2/3 milk line provides the ideal moisture for proper fermentation and minimal storage loss. Moisture levels below 60% increase field losses by 10-15 % over ideal moisture. Normal fermentation activities are possible if proper packing is done (5 minutes per wet ton at the silo). Often, producers can harvest much faster than they can pack at bunker silos.

The database at Agri-Food Laboratories on unfermented samples indicated moisture values from 49% to 70%. The majority of later samples were in the 50% to 55% range.

Starch content in the early-submitted samples ranged from 15 to 35%. The explanation may be in the crop condition (moisture) and the grain content. Well-eared corn has 20% cob and 80% grain. Moisture challenged corn may have 50% cob and 50% grain, which greatly influences the fiber and starch levels found in the grain. i.e. cob contains 75-80% NDF and 0% starch, where corn grain contains 10-12% NDF and 60-70% starch.

As more samples come in the starch values are starting to cluster around the normally expected 32-35% range.

NDF digestibility (NDFD) can be determined on fresh corn silage samples, although it may not be as relevant as the value determined from fermented samples. NDFD was 34.7% (of NDF) on average for fresh samples, but ranged from 23-42%. Again, this can be attributed to a large extent to growing conditions, fertility and harvest conditions.

Commenting further on quality is best done after fermented samples have been received and analyzed, at least 21 days after silo filling is the time to resubmit to obtain a more valuable nutritional profile.

The greatest difficulty associated with harvesting corn silage this year was plant moisture. Plants and grain dried down very quickly and it was difficult to get harvesters in at the optimum time.

Analytically, fermented samples would indicate a very good silage season. Many samples received have ADF values ~20% or less, and NDF values ~40% or less. Lower

NDF values are indicative of higher starch content. Many samples contain >32% starch, some as high as 42%.

The average NDFD for fermented samples received to date, is 44% (of NDF). This will tend to increase with time, for the next few weeks.

The average starch content for fermented samples, is not significantly different than for fresh samples, ~32%, but a significant number of samples contain a larger amount of starch than this.

There have been more BMR silage samples analyzed this season than in the past. These samples tend to be higher in NDFD than non BMR hybrids in the same plot. The starch content may not be significantly different.

It has been noted that protein levels in many silage samples seems lower than in other years. This can be attributed, in part, to the higher starch content.

Whole plant stover contains 11-13% protein, where as whole grain corn contains 6-7% protein. The more grain in the sample, the lower will be the combined total plant protein.

This year's corn silage 'appears' to be very good quality. Hopefully this will be translated into increased productivity.