

Corn silage harvest: review + research= results!

Corn silage harvest is approaching quickly across southwestern Wisconsin! This is our annual opportunity to harvest quality forage for livestock feeding during the upcoming year. Agronomic decisions of hybrid selection, plant population, pest control and fertility levels have impacted the crop to date. However, now is the time to make the final series of decisions which will allow the crop of corn to become quality livestock feed!

Reviewing our procedures from previous harvest seasons may be a benefit as harvest plans for this season are finalized. Was the moisture content at harvest optimum? Was the kernel processing and particle size adequate? Did the crop ferment well and was spoilage reduced? If the answer to any of these questions is no, it's time to research a solution!

Recording the date of corn silking can be helpful in determining the approximate harvest timing for the crop. Corn reaches the 50% kernel milk state at approximately 42-47 days past silking. Depending on the structure that will be used for storage, corn silage harvest can be completed at 40-80% kernel milk stage. Once the approximate harvest timing has been identified, the exact silage moisture can be determined by harvesting a sample of 3-5 plants and completing a detailed moisture check. Start checking the moisture of the corn plants a minimum of 2 weeks ahead of the expected harvest date. Use the factor of .5% dry matter increase per day to help determine the ideal harvest window.

Kernel processing and particle size have important implications for storage, nutrient availability and animal health! Properly processed corn silage would ideally have kernels broken into ¼ size pieces. This will lead to an improved rate of starch digestibility compared to non-processed corn silage, often as much as 5%. The level of kernel processing can be quickly checked by floating a sample of silage in water allowing the grain to settle out. Particle size of corn silage affects the level of silage density in the storage structure. A silage density of less than 14 lbs dm/ft³ was found to have dry matter losses of up to 20%. Particle size also affects the percent effective fiber of the feed. Large particle size with a higher % effective fiber aids in healthy rumen function. While corn silage that is chopped more finely will generally have a higher density when stored, it will also have a lower % effective fiber. The goal is to process the kernels while maintaining adequate silage particle length!

Correct corn silage fermentation is dependent on the management concepts mentioned earlier. Spoilage and dry matter losses can be reduced by the addition of a silage inoculant. There are three main types of silage inoculants: homofermenters ex.(*L. plantarum*), heterofermenters ex.(*L. buchneri*) and a combination of the two. In high quality corn silage, research from UW-Madison suggests both types of inoculants have a seat at the table. If improving animal performance, decreasing dry matter loss and improving feed quality are the main priority, a homofermenter is the best choice. These benefits do come at the risk of lower silage stability and spoilage. If silage stability is the main concern, a heterofermenter is the best choice. Dry matter losses are reduced over untreated silage but feed quality and animal performance are not improved.

Positive results will be achieved when corn silage harvest techniques are reviewed and researched! Include your nutritionist and agronomist as plans are finalized for silage harvest. If additional questions remain please contact your local Extension Educator. Have a safe and productive harvest season!

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