

Chopping Stressed Field Corn for Silage Considerations

David Bilderback, Extension Specialist Farm Management
 Les Humpal, Extension Specialist Farm Management
 Rachel Painter, Extension Specialist Farm Management

Corn producers can face difficult decisions after a lack of rainfall during critical growth stages. With drought-like conditions in late spring and early summer, ear production can be minimal to non-existent. Producers must decide if the crop will remain in the field to be harvested or to chop the corn for silage.

The decision to harvest drought-stressed corn for silage must be evaluated on an individual basis, as factors influencing the capability and profitability of a farm to harvest, store, and feed silage can vary for each producer. The following considerations outlined throughout this publication can assist corn producers in making an informed decision. To find a local Extension agent or farm management specialist for individual consultation and assistance, visit utextension.tennessee.edu.

Evaluate the Crop

Before making any decisions or actions, the first step is to contact the crop insurance company for an evaluation of the crop. An adjuster will provide instructions, which may include leaving test strips in the field following certain specifications to determine potential yields at a later date.

After the crop insurance company has been notified, the next step is to consider the following questions:

1. Is there a need or demand for corn silage on-farm or nearby?
2. Is the necessary harvesting and feeding equipment available to utilize the silage?
3. Is storage available for the silage?
4. What is the cost of removing the silage, and is it worth harvesting for the volume and quality?

The types of agricultural enterprises in the area and availability of feed for livestock operations will greatly affect the need for silage. The demand for corn silage is driven by the livestock enterprises in the area and yields of early hay production in a given year. If the corn operation



also has livestock or a nearby farm needs forage for livestock, chopping low-yielding corn could be an option worth considering. Transporting silage is cost-prohibitive, as it is approximately 65 percent moisture when harvested correctly; therefore, the corn should be reasonably close to storage and the end user.

Capacity to Harvest and Utilize Corn Silage

Once the need for silage has been established, the next step involves assessing the farm's capability to harvest and utilize the feed. If equipment for silage harvest is available or if the standing corn can be sold to a nearby farmer equipped for chopping, silage production remains a viable option. Additional considerations include storing and feeding methods.

Proper storage is crucial for maintaining feed quality and longevity. While permanent bunker silos offer optimal storage conditions, this method may not be an option for many farms. Alternative temporary methods of storing silage such as bagging can require specialized equipment that may not be readily available. Piling and packing silage onto a surface with proper drainage can be considered given the silage is packed tightly and covered with plastic with sealed edges. Without proper storage, the fermentation process will be compromised and a substantial amount of silage will be lost to

spoilage. The publication SP 434-D “Corn Silage” by Gary Bates goes through growing and storing corn silage properly. Harvesting corn silage is not an inexpensive operation. Producers must consider moisture in the crop, size particles, fast ensiling, tarping, and sealing as fast as possible to produce a usable product.

Another critical aspect is the farm’s capacity to utilize the silage as an efficient feed source. If the farm does not have the proper equipment or infrastructure to feed silage, it can lead to inefficiencies, increased labor, and higher feed costs. Feeding silage without a mix wagon or simple feed wagon can be time-consuming, increasing labor cost. Furthermore, feeding silage without proper feed ways or feed bunks will lead to a significant amount of waste, thus increasing feed cost.

After evaluating the farm’s ability to utilize the silage, it is important to assess the viability or worth of chopping the corn for silage. Silage quality is heavily determined by the amount of grain present. Drought-stressed corn will be of lower quality and yield low; therefore, the silage will likely be less desirable feed. If corn production is compromised, overall forage production would not be the best, and most likely the lack of forage will be an issue in the area.

Nitrates will be a concern. Grain corn will likely have sufficient nitrogen applied to the field. With the lack of rainfall, the corn plants could have elevated levels of nitrates. Ensiling corn silage does lower nitrates; however, the silage should be tested and nitrate levels evaluated to ensure it is safe for livestock to consume.

In summary, a thorough assessment of harvesting capacity, storage options, feeding logistics, and feed quality is essential before committing to silage production to ensure both economic viability and safe consumption by livestock. The University of Tennessee Soil, Plant and Pest Center can assist with testing silage for nitrate levels.

Cost of Removing for Silage

Multiple costs should be evaluated when considering removing corn for silage. First, the nutrient removal from the land, or soil, should be considered, particularly when selling the standing corn to another individual to harvest. Nutrient removal rates for corn silage will be higher than

those for corn grain harvest and should be factored into the farmer’s decision-making. According to publication W 886 “Corn Silage Mineral Nutrient Concentrations and Harvest Removal Rates” by Shawn Hawkins, a recommended pre-harvest removal rate is 9.9 lbs. of K₂O, 4.2 lbs. of P₂O₅ and 0.72 lbs. of sulfur per acre per ton at 65 percent moisture. To estimate the nutrient removal costs, multiply the removal rate by the expected yield in tons of silage and the current nutrient cost per pound:

(Nutrient Removal Rate) X (Expected Silage Tons Yield) X (Current Nutrient cost Per Pound) = Cost per acre for each Nutrient.

Then, add these nutrient costs to determine the total nutrient removal cost per acre. This calculation provides a minimum value required to justify harvesting corn for silage. For those considering selling standing corn for silage, ensure that the price at least recovers the nutrient removal costs from the land. A common rule of thumb when pricing corn silage per ton is to use 8-10 times the price of corn grain. However, this method is used with a typical crop, not stressed corn. Producers should consider the variables of fluctuations in corn grain prices, the potential for higher dry matter levels, and the low amount of grain present in drought-stressed corn when making this decision. The University of Wisconsin-Madison has a “Corn Silage Pricing Decision Aid” that may be utilized to help determine a selling price for standing corn for silage.

Conclusion

Whether to harvest drought-stressed corn for silage should be carefully evaluated with consideration to the ability and cost to harvest, store, and utilize the silage on-farm or nearby. If proper equipment and infrastructure to chop, store, and feed silage is not currently available on the operation or a nearby farmer is not interested in purchasing the silage, the most practical option is to leave the corn standing in the field. The considerations outlined throughout this publication can assist producers in evaluating the financial implications and viability of harvesting corn for silage.

Resources

UT Center of Farm Management
UT Soil, Plant and Pest Center



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