

Field Wilting Corn for Silage Harvest

We have some very late planted corn this year intended for silage harvest on prevented plant acres that may not reach the dough stage before a killing frost (see accompanying articles about corn silage in this newsletter). For corn that does not reach dough stage, past research indicates that whole plant moisture after the killing frost will seldom drop enough for proper fermentation. In those cases, it is advisable to cut the corn with a hay mower before a frost (and earlier will likely have higher forage quality) and wilt it in the field to the proper dry matter content that ensures good fermentation (64-68% moisture, or 32-36% dry matter). For corn that is barren of grain (pollination was unsuccessful), harvest can occur at any point either before tasseling when maximum forage yield is attained or after tasseling. Earlier harvesting will likely produce higher forage quality.

Corn plants can be cut and field-wilted, but this practice requires very careful attention to mechanical details to avoid a disaster and severe soil contamination. Also, be sure to test the moisture content (using a microwave oven or Koster Tester) during the wilting period to ensure the proper moisture range is achieved for ensiling prior to picking up the windrow. The wilting period could be quite short depending on the initial moisture level, condition of the crop, and weather conditions.

Below are some thoughts and guidelines on the mechanical aspects on field wilting corn from Dr. Kevin Shinnars, Professor of Agricultural Engineering in the Biological Systems Engineering Department at the University of Wisconsin:

- Disk mowers are able to cut and swath/windrow whole plant corn. Open the roll clearance a bit to prevent machine plugging, but not so much that the stems are not conditioned (crimped) to help drying. Don't expect to have high ground speed if yield is high.
- Forage harvesters will pick this material off the field – the one caveat is if the corn goes down and the disk mower doesn't cut it well, the long stalks still attached to the ground can cause problems with picking up the windrow. If possible, try to mow the crop before lodging occurs.
- An important consideration is whether to place in a wide swath or narrower windrow. Swathing causes the crop to dry more quickly and uniformly, but it also exposes more of the crop to soil contamination (see below). If windrowed, high yields could result in dense, heavy windrows that dry poorly and decompose. However, windrows may offer less risk of soil contamination. Yield (bulk) of the material affects this decision.
- Soil contamination should be carefully monitored. Corn ground is not like hay ground (especially if tillage was used prior to corn planting), so it will have a lot of bare soil in contact with the wet stalks, and that could cause a lot of soil contamination.
- Rocks are another concern when you are picking corn off bare, recently tilled ground. Combined with the soil in the windrow, you could really cause wear and damage to the chopper.
- Having said all those negatives, producers have successfully chopped windrowed corn stover with

a forage harvester. They are careful about the header gauge wheels to prevent tines from touching soil and they try hard to keep dirt out of the windrow when they form it. No reason to think windrowed corn can't be harvested if folks are thoughtful about how they set-up the machine.

- I have seen folks round bale and wrap grainless corn silage rather than chop it. The balers with pre-cutters work well, but to prevent plugging, the baling will likely be slow. Just like the chopper, be careful to set the pick-up height to minimize soil contamination. Try to target slightly less than 60% moisture (40% DM) and be thoughtful about the weight of the bales with regard to safe transport and handling.

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ABOUT THE C.O.R.N. NEWSLETTER

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