

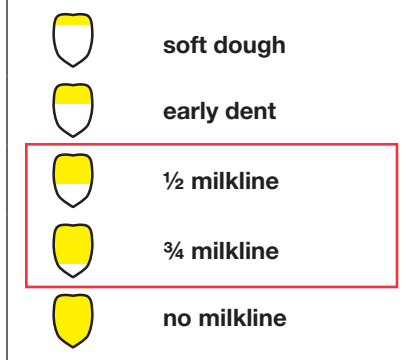
CORN SILAGE REMINDERS

Corn silage is a large component of many diets on-farm, therefore harvest decisions that will maximize corn silage quality and quantity will impact your bottom-line for the next 12+ months. Harvesting at the proper moisture level is critical to optimize herd performance, but it's not the only element you need to keep in mind when planning your harvest. Read on for more important reminders from your Purina® Dairy Team to ensure a quality crop that will benefit your operation year-round.

Timing is Everything – Focus on Whole-Plant Dry Matter.

- Multiple factors affect dry matter accumulation in corn plants: weather events, relative maturity of corn hybrid, seeding date, and accumulation of growing degree days.
- Growing stage references and environmental conditions can be helpful with making harvesting decisions. For example, many corn varieties reach optimal maturity 45 days after silking. Monitoring the milk line can also be useful, generally most corn is ready for harvest around the ½ to ¾ milk line stage.
- In general, corn plants can accumulate 0.5% DM points per day after denting or soft dough stage, but depending on disease pressure, this can be exacerbated to 2% DM points per day.

Figure 1 | Diagram of Milk Progression in Corn



Source: NC State Extension

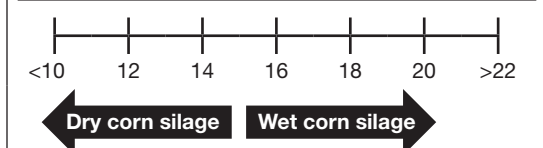
Achieve Ideal Moistures in Every Situation:

Type of Storage	Bunker	Tower Silo	Sealed Silo	Ag Bag
Recommended Moisture	65-70%	60-65%	50-60%	60-70%

Cut Height and Length

- In general, a theoretical cut length of 19mm (¾”) is adequate for corn silage harvesting but cut length should be optimized according to DM to assure adequate pack and fermentation.
- Use the Penn State Shaker Box to assess cut length and cleanliness of cut. At 15 mm theoretical cut length, most of the harvest material should be within the middle trays. Cut should be clean (no shredding) if knives have been sharpened and adjusted properly. Decrease cut length if harvester is not equipped with a kernel processor to maximize kernel processing.
- Cut height is not a “one-size-fits-all” solution and it should be optimized for each field. Factors to consider are forage inventories (increasing cut height will decrease yield but increase quality), corn hybrid being harvested (not recommended increasing cut height for BMR), and historical yield records (should we increase cut height on highest producing fields to increase quality?). For reference, a “low” height may be 15cm (6’ inches), whereas a “high” height might be 48cm (19 inches).

Figure 2 | Recommended Range in Theoretical Length of Cut (mm)



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Table 1 | Ideal Penn State Shaker Box Results with Corn Silage

Screen	Particle Size (in)	Corn Silage (%)
Upper	>0.75	3-8
Middle	0.31-0.75	45-65
Lower	0.16-0.31	20-30
Bottom	<0.16	<0.10

Table 2 | Impact of Cutting Height on Corn Silage Quality and Quantity

Nutrient	Low Height (6")	High Height (19")	Impact of Increasing Cut Height
Dry Matter %	38.1	40.3	↑ 6%
ADF %	24.2	21.8	↓ 10.2%
NDF %	41.6	38.6	↓ 7.4%
NDF digestibility (30hr)	50.6	54	↑ 6.7%
Starch %	30.6	32.4	↑ 5.9%
NEL (Mcal/kg)	1.56	1.63	↑ 4.2%
Yield (tons/ha)	20	18.5	↓ 7.5%

Source: Penn State Extension)

Corn Silage Processing

- Corn silage processing assures that most, if not all, corn kernels have been broken down into smaller pieces. Adequate corn silage processing greatly increases total tract starch digestibility and rumen digestible starch. Inadequate processing of corn silage can increase the necessity of purchased feed on farm to compensate for lower starch availability.
- **Constantly check corn silage processing.** Kernel processing can be tested on-field by separating the kernels from other plant material with the bucket method or the Penn State Shaker box. Ideally, there shouldn't be any whole or half kernels in a 32 oz cup of freshly cut material.

Trucking, Packing, and Sealing

- Preplan trucking routes to minimize risk of accidents and tracking dirt into bunkers. Don't back up directly onto the pile to minimize tracking dirt into the bunk.
- Spread incoming forage into 6" layers or less to maximize packing. Packing must occur continuously as forage is delivered. When filling/packing a bunk, follow the '800 rule': weight of packing tractor(s) (lbs) / 800 = maximum tons delivered/hour to achieve ideal bunk density. (Number of tractor(s) and weight need to match loads. Ex.: 10-ton loads coming 6 minutes apart is 100 ton per hour, optimal packing weight is 40 tons per 100 tons of silage. x 800, need 80,000 pounds or 40 tons of tractor weight(s).
- Cover as you go to keep oxygen out. Add sidewall plastic to minimize spoilage in edges, where silage is the least dense. Add tiling line to the top of the bunker wall so the sidewall plastic does not rip as the bunker is packed.

Let's maximize productivity with your corn silage this year.
After all, harvesting a quality crop doesn't just make
a great day, it sets the stage for a great year!

