

# Forage Management II: The Harvest

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Determining when to harvest your forages is critical for the success of your forage program. Harvesting at the correct dry matter and maturation is necessary for proper fermentation and quality forage. These values differ between forage types. On the reverse side of this page you will find a breakdown of silage harvest guidelines.

Moisture at the time of harvest is one of the most important factors in determining how well the silage will ferment and be stored. The proper moisture level to harvest at depends on the storage method. If a large volume of forage is being harvested, the start of harvest may need to begin at a wetter whole-plant moisture level to try and keep the silage that is harvested later from getting too dry. Keep in mind that harvesting when too wet will negatively impact the ensiling process. Leachate will also be increased when forage is harvested too wet. Leachate is the liquid run-off from a bunker silo. In that run-off is a concentrated collection of nitrogen, vitamins and minerals that will never make it to your cow!

Inoculants will not be able to help prevent this run off so determining the moisture content of the forage before chopping begins is crucial.

Packing density has the next greatest impact, after moisture level, in determining how well the silage is going to ferment.

Packing helps to remove oxygen from the pile and encourages



anaerobic fermentation. The general recommendation is to pack to a density of at least 14 to 16 lbs of dry matter per cubic foot, though greater packing densities are even better. If forage is too dry it is much more difficult to get it packed thoroughly. In that sense, moisture and packing density go hand in hand.

If you're harvesting corn silage consider kernel processing. Kernel processing breaks the corn kernels up making the starch more

available to the cow. The more broken up the kernels are, the better the cows will be able to utilize the corn silage. If using a kernel processor, watch closely during harvest to make sure that the kernels are being thoroughly broken apart, and make quick adjustments if they are not.

Finally, don't forget about covering the silage as soon as

possible to help prevent spoilage. If you will be harvesting for multiple days make sure to cover the pile between sessions. When left uncovered, spoilage will begin. It is this type of situation that leads to the "striping" of mold across the face that is seen once

the bunk is opened for use. When covering the pile, pay close attention to the sides and areas next to the walls to ensure an adequate seal. The cover needs to enclose the entire pile to keep air out and provide the correct environment for fermentation.

*Working hard to take the proper steps during silage harvest can help to make the next year on the dairy even more successful.*

## Silage Harvest Guidelines

Crop	Maturity at Harvest	Moisture/Dry Matter	Chop Length	Processing of Kernels	Packing Density	Covering Silage	Fermentation Time	Fermentation Profile	Silage Face
<b>Alfalfa</b>	Bud stage	<i>Bunkers:</i> 60-65% / 35-40% DM <i>Bags:</i> 60-65% / 35-40% DM <i>Silos:</i> 55-60% / 40-45% DM <i>Bales:</i> 50-60% / 40-50% DM	1/4-3/8 in	--	14-16 lbs DM/ft <sup>3</sup>	<1 day of harvest	>1 month	pH < 4.7 Lactic >4% Acetic <2% Propionic <0.5% Butyric <0.1%	>6 in/day
<b>Grass silage</b>	Boot stage	<i>Bunkers:</i> 60-65% / 35-40% DM <i>Bags:</i> 60-65% / 35-40% DM <i>Silos:</i> 60-65% / 35-40% DM <i>Bales:</i> 50-60% / 40-50% DM	1/4-3/8 in	--	14-16 lbs DM/ft <sup>3</sup>	<1 day of harvest	>1 month	pH < 4.7 Lactic >4% Acetic <2% Propionic <0.5% Butyric <0.1%	>6 in/day
<b>Corn silage</b>	1/2-3/4 kernel milkline	<i>Bunkers:</i> 65-68% / 32-35% DM <i>Bags:</i> 65-68% / 32-35% DM <i>Silos:</i> 60-65% / 35-40% DM	Unprocessed: 3/8 in Processed: 3/4 in Shredlage: >1 in	Kernels broken with most pieces less than 1/2 of full kernel	14-16 lbs DM/ft <sup>3</sup>	<1 day of harvest	3-6 months (> 6 months is ideal)	pH < 4.2 Lactic >4% Acetic <3% Propionic <0.5% Butyric <0.05%	>6 in/day
<b>High moisture corn</b>	Black layer	28-32% / 68-72% DM	--	Finely ground	--	<1 day of harvest	>1 month	pH < 4.2 Lactic >1% Acetic <1% Propionic <0.1% Butyric <0.05%	>4 in/day