



SILAGE/HAY PRODUCTION



UNDERSTANDING HAY PRODUCTION

Most forage/hay is grown for livestock consumption on-site on individual farms and ranches. Some is produced for sale to large dairies, feedlots, stables. Some is produced for retail.

FORAGE/ HAY PRODUCTION TERMS

Cultivating... preparing forage field, applying inputs (lime, fertilizer, herbicides)

Mowing.. cutting forage, leaving it on the ground

Conditioning/Raking/Tedding.. drying hay in the field by exposing it to air and sun; setting cut hay up in rows for baling

Baling/Wrapping... binding large, dense masses of hay into small squares (common for horses and retail) or large round bales (most common for all other purposes)

Hauling/Storing... removing or “putting up” forage from the field and transporting to storage.

Feeding... Transporting forage from hay to livestock during winter and spring.



JOBS THAT MIGHT QUALIFY FOR MEP

Forage production is almost entirely mechanized. It involves many qualifying activities performed often by the same machine operators.



HAY & SILAGE

Qualifying Activities May Include:

- Planting hay
- Cutting hay
- Raking hay
- Baling hay
- Chopping hay/silage
- Loading hay bales
- Hauling hay
- Stacking hay bales
- Harvesting silage
- Preparing silage



SILAGE

What is silage?

Silage is pasture grass that has been 'pickled'. It is a method used to preserve the pasture for cows and sheep to eat later when natural pasture isn't good, like in the dry season.



WHAT IS SILAGE MADE FROM?

Silage is usually made from grass crops, including maize, sorghum or other cereals, using the entire green plant (not just the grain). Silage can be made from many field crops, and special terms may be used depending on type: *oatlage* for oats, *haylage* for alfalfa (*haylage* may also refer to high dry matter silage made from hay).



MORE ABOUT SILAGE

The grasses are cut and then fermented to keep as much of the nutrients (such as sugars and proteins) as possible.

The fermentation is carried out by microscopic organisms living in the grass.

The process must be carried out under acidic conditions (around pH 4-5) in order to keep nutrients and provide a form of food that cows and sheep like to eat. Fermentation at higher pH results in silage that has a bad taste, and lower amounts of sugars and proteins.



HOW IS SILAGE MADE?

First, the pasture must be cut when the grasses contain their highest nutrient levels. This is usually just before they are fully mature. This is important because all forms of preserved grass, such as hay and silage, will have lower amounts of nutrients than fresh pasture, so everything must be done to make the end product be as nutritious as possible.

Grass is allowed to wilt in the field for a few hours to reduce the moisture content to around 60-75%. This moisture level will allow for optimum fermentation. If the grass is left out longer, it may get too dry, or it may get rained on - and both these will reduce proper fermentation. Also, the longer the grass is left uncut, the higher the loss of nutrients.



FERMENTATION

The cut grass is chopped into even smaller pieces and then compacted to get out as much oxygen as possible (this is important because the microorganisms, called lactic acid bacteria, that are needed to carry out the fermentation like living in oxygen-free environments). If the silage is to be stored piled in a large pit, tractors and other machinery are usually driven over the grass pile until it is firm. If the silage is stored as bales, the baling machines will compact the grass as they work.

The next step is to seal the compacted grass with plastic to keep oxygen out. Mounds of silage are covered with huge polythene (plastic) sheets and weighted down (usually with old tyres) to ensure maximum compacting; bales are covered with a plastic wrapping.

KEEPING OXYGEN OUT

Removing and keeping out oxygen is a key part of making silage. This is because fermentation has to happen under anaerobic (oxygen-free) conditions, or the correct type of microorganisms won't grow.

While oxygen remains, plant enzymes and other bacteria and microorganisms react with the plant sugars and proteins to make energy, reducing the amounts of these nutrients in the grass.

Once all of the oxygen is used up, lactic acid bacteria start to multiply. These are bacteria that are needed to make the silage, and they turn the plant sugars into lactic acid. This causes the pH to drop (the mixture becomes more acidic). Once the pH is around 4-5, the sugars stop breaking down and the grass is preserved until the silage is opened and exposed to oxygen.

SILAGE VS HAY



Both silage and hay are popular ways for farmers to feed their livestock when they're unable to graze during the winter. They're both comprised of grass and considered a preservation method of forage.

However, despite overarching similarities, these two styles certainly have their differences. The primary difference between hay and silage is that the former is grass that's cut and dried to use as animal fodder. Silage is fermented and stored in a silo before used as food. As a result, they have several distinctions:

Moisture content: Hay usually has a moisture content of 12%, whereas silage moisture content is between 40-60%.

Storage methods: Hay is mowed, dried and stored in bales. Silage crop is compacted and stored in air-tight conditions without being dried.

Digestive capabilities: Animals do not digest hay. Silage feed is partially and easily digested, offering more nutritious value.

Preservation: Hay is typically kept in a bale, while silage is stored in a bale and covered with tight plastic wrap.

TIPS FOR RECRUITERS

Check **H2A orders!** Forage operations and ranches will stipulate their qualifying activities.

Temporary Agricultural Services and Wage Offer Information

8a. Job Duties - Description of the specific services or labor to be performed. *
(Please begin response on this form and use Addendum C if additional space is needed.)

DRIVE AND CONTROL FARM EQUIPMENT TO TILL SOIL, PLANT CULTIVATE, AND HARVEST CROPS. MAY PERFORM TASKS SUCH AS CROP BALING OR STACKING/BUCKING HAY BALES. MAY OPERATE STATIONARY EQUIPMENT TO PERFORM POST HARVEST TASKS SUCH AS BUT NOT LIMITED TO HUSKING, SHELLING, THRESHING, AND GINNING. ADJUST, INSPECT, REPAIR, AND SERVICE FARM MACHINERY AND EQUIPMENT AND NOTIFY SUPERVISORS WHEN MACHINERY NEEDS ATTENTION OR MALFUNCTIONS OCCUR. ATTACH FARM IMPLEMENTS SUCH AS PLOWS, DISCS, SPRAYERS, OR HARVESTORS TO TRACTORS USING BOLTS AND HAND TOOLS. DRIVE TRUCKS TO HAUL CROPS, SUPPLIES, TOOLS, OR FARM WORKERS. MOVE AND LIFT IRRIGATION PIPES AND SUPPLIES. FARM CLEANUP, FENCE BUILDING, AND PROPERTY MAINTENANCE. OTHER DUTIES INCIDENTAL TO FARM WORK.

TIPS FOR RECRUITERS

Check for inter-state **custom harvesting** operations, especially for corn and bean crops. These might be family businesses that follow harvest patterns between states (with students accompanying), or might be organized crews.



HELPFUL WEBSITES RELATED TO HAY PRODUCTION

[2022 U.S. Forage Statistics](#)

[National Hay Association](#)

[Hay and Forage Grower Magazine](#)

[Alfalfa Hay: Production Acreage by County](#)



NATIONAL HAY ASSOCIATION

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Upcoming NHA Events

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16 Apr 2019 2:09 PM | [Executive Director](#)

Welcome to the National Hay Association

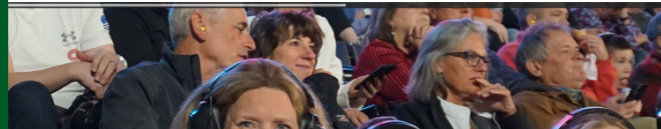
The National Hay Association, the national trade association for the U.S. hay industry, works daily within the industry, federal agencies, and the Congress itself to create an environment that benefits hay merchants and the people who depend on hay and straw in their commerce. A non-profit organization, NHA's activities are funded entirely through membership dues. NHA proudly represents hay producers, brokers, dealers and consumers of forage products, as well as disciplines and activities of businesses that provide products and services to the hay industry.

Memories of the 2022 Annual Convention!

Click on an image to enlarge and scroll at the bottom to see more!



Thanks for a Great 2023 Mid-Year Meeting!



<https://nationalhay.org/>

It is always helpful to find local or national crop associations. Find out what is your area and reach out to them to see how you can work together.