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HOW TO MAKE

Good

Grass-Legume

Silage

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University of Illinois - College of Agriculture

Extension Service in Agriculture and Home Economics





HIGH-QUALITY SILAGE MEANS MORE \$ TO YOU!

Grass-legume silage may help you obtain greater profits from your dairy herd by —

- **PROVIDING PROTEIN AT WHOLESALE PRICES**

With good-quality grass silage, you can cut down your purchases of commercial protein supplements.

- **SAVING FEED NUTRIENTS**

You can usually save more feed nutrients by making silage than by making hay. This is particularly true of the first cutting of legumes.

- **SAVING SURPLUS SPRING PASTURE FOR LATER USE**

Grasses and legumes in the silo are good insurance against pasture shortage in mid-summer.

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TIPS FOR MAKING GOOD SILAGE

- Use good-quality grass and legume forage. You do not increase the value of feed by putting it into a silo — you only preserve what is already there.
- Ensilage when the moisture content is right—about 70 percent. This is the secret of making high-quality silage. Wilting immature, high-moisture forage can reduce the moisture content to the right level.
- Cut your crop at about the same stage as you would for best hay. Alfalfa or alfalfa-grass mixtures should be cut when the alfalfa is 1/10 to 1/2 in bloom. Clovers should be cut in about the 1/2 bloom stage.
- Use 1/2-inch cut for silage to insure good packing.
- Distribute the silage evenly and pack thoroughly.
- Make sure the upright silo is tight to exclude air. Otherwise, molds are likely to develop.
- Pile the forage higher than the walls of a horizontal silo so that water will drain from the top of the silage to the outside of the silo.
- Use a four-wheeled tractor to thoroughly pack the forage in a trench or stack silo. Pack every day for at least one week after the horizontal silo is filled.

THE WILTING METHOD

If legumes are cut in the early stages of development, wilting 1 to 3 hours in the field may get the

moisture content down to 70 percent — the right level for good silage.

ADVANTAGES

- You can make good silage out of legumes at the time when the total amount of protein is highest.
- The first cutting of alfalfa will be early enough that you can get three cuttings a year.
- Wilting may help prevent excess seepage.
- It may help prevent soggy, smelly silage.

DISADVANTAGES

- Too much wilting may dry the forage so much that it will not pack well and moldy silage will result.
- Filling the silo takes more time than when direct-cut method is used.
- Machinery and labor costs may be higher.
- More management is needed.

SHOULD YOU USE A CONDITIONER?

Preservatives or conditioners may increase your chances of making high-quality grass-legume silage if you have an upright silo. Excellent silage can be made without them, however, if the moisture content of the forage is about 70 percent when it goes into the silo.

The advisability of using conditioners in a stack or trench silo is questioned for these reasons:

1. It is difficult to thoroughly mix the conditioners with the forage.
2. Much of the excess moisture in the forage is lost during the filling process.

CONDITIONERS FOR GRASS SILAGE

These are the most commonly used preservatives or conditioners:

- **GROUND EAR CORN** is a good conditioner for forage with a high moisture content. The ground grain and cobs absorb much of the excess moisture and thus help to prevent loss of juices from the silo. The sugars in the grain form acids which help preserve the forage.

About 85 percent of the feeding value of corn remains in the silage. Therefore, the net expense of this conditioner is relatively small.

Add about 2 bushels of ground ear corn per ton of forage. Use 2½ bushels if moisture content is very high.

- **MOLASSES.** For grass-legume mixtures, add about 60 pounds of liquid molasses per ton of forage. For alfalfa or clover, add at least 80 pounds per ton.

Dried molasses products may be easier to add to the silage than liquid molasses. When the moisture content is high, they will help to absorb excess moisture. Dried molasses may have a lower sugar content than liquid molasses. Add enough of the dried products to supply the same amount of sugar contained in the recommended amounts of liquid molasses. (Liquid molasses is 50 to 70 percent sugar.)

- **SODIUM (META) BISULFITE.** Research work in the Department of Dairy Science at the University of Illinois indicates that satisfactory silage can be made when 9 pounds of sodium metabisulfite are added per ton of forage. However, this

product contains no feed nutrients — which is an important consideration when you are comparing the costs of various conditioners. At least 85 percent of the feeding value of corn, molasses, and other such products added to the forage remains in the silage.

- **MOLASSES BEET PULP** is a good conditioner. It should be considered if the cost per pound is less than that of corn.
- **DRIED WHEY.** Although this is a good conditioner, it may be more expensive than molasses. For best results, use 60 to 80 pounds per ton of forage.
- **BACTERIAL CULTURES** are available in both liquid and dried form. Most research work indicates that they do not improve silage.

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MAY, 1955

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. LOUIS B. HOWARD, Director. Acts approved by Congress May 8 and June 30, 1914.