

Alfalfa Mixtures for Silage

FRED W. UPSON, UNIVERSITY OF NEBRASKA

By Proper Combination with Corn Excellent Silage May be Made

There are often times when, owing to a wet season or an early frost, farmers experience difficulty in saving the last cutting of alfalfa. At such times a method of converting alfalfa into silage may bring about a saving of the entire last crop.

During the fermentation process, which takes place immediately after the silo is filled, the sugar in the green crop is converted by bacterial processes into a mixture of acids. The most important acids formed in silage are lactic acid, the same acid which develops in the souring of milk, and acetic acid, the same acid which gives to vinegar its sour taste. Several other acids are also formed in lesser amounts, but they are of little importance in normal silage. These acids serve to preserve the silage mixture from further decomposition. The silage fermentation is similar to the fermentation which takes place when cabbage is converted into sauerkraut.

The alfalfa plant is deficient in fermentable sugars. For this reason, alfalfa alone does not make silage which will "keep." Acid is not produced in sufficient quantities to preserve the silage. Because of this deficiency of acid, putrefactive processes set up, and the silage acquires a disgusting taste and an odor somewhat resembling the odor of decaying meat.

Connecticut Evidence

Bulletin No. 70 of the Storrs Agricultural Experiment Station, Connecticut, recounts some experiments in which alfalfa and other legumes were successfully silaged when mixed with green oats, rye, or timothy. These latter crops furnish the necessary sugar for the fermentation process.

More recently, similar experiments have been carried out by the Kansas Agricultural Experiment Station. It was found that corn meal or molasses mixed with alfalfa produced excellent silage. Corn was added to alfalfa in the ratios 1 to 10, 1 to 20, 1 to 30, and 1 to 40. Similar mixtures were made with molasses. The 1-to-40 mixture kept just as well as the 1-to-10 mixture. The molasses and corn furnish the necessary fermentable sugars from which the acids are produced.

In September, 1914, the Nebraska Agricultural Experiment Station constructed six small silos each having a capacity of about 1 ton each. These were filled,—one with corn, one with Black Amber cane, one with alfalfa, and three with alfalfa-cane mixtures in the proportion of one part alfalfa to two parts cane, equal parts alfalfa to one part cane, and two parts alfalfa to one part cane, respectively. The sorghum cane contains a higher percentage of fermentable sugars and makes up the deficiency of the alfalfa in this respect.

The Nebraska Results

These silos were opened in August, 1915, after having been filled for nearly a year. The silage in all except the one containing only alfalfa was found to be in perfect condition. The silage made from one part cane and two parts alfalfa was just as good as that containing larger proportions of cane. The silo which was filled with corn contained, at the time of opening, normal corn silage. The moisture content was 67.25 per cent and the total acidity 1.61 per cent, expressed as acetic acid. These figures are normal for corn silage. By means of electrical resistance thermometers, temperatures in this silo were recorded for several

weeks after filling. These agreed very closely with temperatures taken in one of the large silos at the Experiment Station. These facts would seem to indicate that the quality of silage is in no way related to the size of the silo.

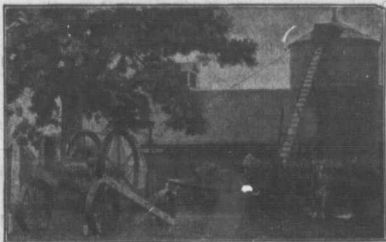
The amount of acid in the cane-alfalfa mixtures was less than that in the corn silage. The silo containing corn gave a silage carrying 67.25 per cent moisture and 1.61 per cent acid, calculated as acetic acid. The alfalfa two parts, cane one part, mixture gave a silage of 62.13 per cent moisture content and an acidity of 1.30 per cent, calculated as acetic acid. The lower acid content in the alfalfa-cane mixture is a desirable quality.

Alfalfa, two parts, mixed with cane, one part, makes a highly desirable silage. Siloing alfalfa with cane in the manner here described is recommended as a means of saving the last crop of alfalfa when conditions are such that it cannot be made into hay. Whether or not it will be profitable to silo alfalfa is a question which will only be answered by the farmer himself under the individual conditions.

How Consolidation Was Achieved

Consolidated schools cost a little more than district schools. At the same time, the former afford much better educational facilities to country children. This fact often brings ratepayers with children into conflict with ratepayers without children, unless the latter are broad-minded enough to realize that well educated children are an asset to the state, as well as to their parents. An instance of this fact was brought to light in connection with the consolidated school at Guelph.

One district distantly located, separated from the consolidated school because of the expense, but when the vote was analyzed it was found that practically every parent with children of school age, had voted to continue their children at the consolidated school, expense or no expense. When Mr. Lees, who is contributing a series of articles to Farm and Dairy on consolidated schools in Indiana, was in that state recently, he ran across an interesting incident which shows



The Busiest Day of All in the Fall.

how ratepayers with children sometimes win out when they are in the minority.

A consolidated school has been established nearby, but the majority of the ratepayers insisted on keeping the old district school open. Parents there started to send their children to the consolidated school, paying their own transportation charges, until the district school had dwindled down to the proportions seen in the illustration herewith. Finally the attendance got down to



The Remnants of a District School.

The people of the district voted against annexing the district school for one of the best Consolidated Schools of Indiana. Ratepayers with children thus found a different way of consolidating as told in the article adjoining.

the point where a decrease of one would close the school automatically according to the state law. Some one then persuaded the little girl in the illustration that it was not very nice for one girl to be going to school with so many boys, and she too insisted on going to the consolidated school. Then the school had to be closed, the section was merged, in with the consolidated school and the ratepayers, one and all, had to meet their due share of the educational expense.

The Selection of a Breed

By R. McCann

In starting a dairy herd, too much stress is often laid upon the question of breed. It is not the breed selected, but the individuals of the breed that count. There are many fine individuals in all of the leading dairy breeds, and of course, many poor ones. As to the relative production of breeds when compared one with another, there is no reliable existing data which will give each breed its distinctive rank according to merit. This question should be settled largely by the purpose for which the product is to be used, the tastes of the breeder and the community in which he lives—not only local conditions as to altitude, feeds raised and pastures, but the breed predominating in that district.

Instead of selecting a breed because it is not well represented in the community, as is sometimes done, it is better by far to develop a herd of the same breed which already predominates in that locality. Breeders interested in one certain breed in a community are more inclined to cooperate than where their interests lead seemingly along different paths. Then where one community has a large number of animals of the same breed, a better market can be established by that fact becoming widely known and buyers being attracted by the numbers from which they may make selections, that community becoming recognized as a centre for a particular breed. Not only is the outside demand as an avenue of market attractive, but the local demand among neighbors is often of a decided advantage, especially when new animals are being brought into the community at frequent intervals.

Pure-Bred Grade

In building up a herd, the production of dairy products and not of breeding stock should be made the foundation of business. This is most especially true of the beginner and man working with small capital than of the more experienced and larger investor. The two may be nicely combined with no reason against doing so, but to depend upon stock sales alone is not nearly so

profitable or sure und to depend upon production. When production along grade animals may give as the pure-bred. For may be made at a lower cost. Selection may be obtained considering the fact that required in handling, it to start with good grade higher, then add an ordinary herd, than to try to cross mals.

Over Many mistakes are breeds. This practice object for which breed. Certain characteristics fixed, while establishing transmissible, and it crossing two breeds that each may be obtained. city-producing Holstein quality-producing Jersey large quality combining good result is the low combined with the low

The outcome of crossing can never be depended upon and the second generation will be more unsatisfactory than the first. The dairy farmer who selects good animals from the breed which best suits his tastes and locality, and not only selects good individuals, but selects those which will transmit their strong characters, then stays with that breed and continues to grow better individuals by incessantly weeding out the poorer ones, will meet success in due measure of financial returns and in that joy of achievement gained.

With the C

LOSE cooperation fits from the district between the man and his own community a decision that so far concerned, this cooperation have been on poor pastures and this is point of the pasture

First let us consider which grows in the low nutritive value. ed to afford good feed, the grass roots through this product must be of ing cows, there is a before grass in the before spring, weeds take its place and the continually declining if The effect on the C. The cows cannot keep dry before the snow when summer dairying (Conclud