

Dairy.

Ensilage.

BY L. B. ARNOLD.

Ensilage is a term used to signify a new mode of preserving various kinds of green, and especially succulent cattle food, by burying it in pits to protect it from the influence of the air. The most approved mode of doing this is to dig a deep, narrow and comparatively long trench in the earth in some location where it will not be affected by water, and to wall up the sides with brick or stone. This form is preferred for convenience in filling and removing, and also in covering, the length being determined by the quantity of fodder to be preserved. The green food, whatever it may be, is pulped or cut as fine as desired for feeding, and is then filled into the trench, a silo, as it is called, and pressed down and covered with earth deep enough to guard against atmospheric influences, the fodder of course being protected from direct contact with the overlying earth by some intervening covering. In this way it is customary to some extent in France, Germany and Holland to preserve for winter use green fodder-corn, green clover, lucerne, beet and turnip tops, cabbage, and the pulped roots of beets, mangels, turnips and the like.

A good deal has been said of late by agricultural writers in favor of introducing the practice into this country as an aid to winter dairying, but, without any experience in the matter, for certain theoretical reasons I have the impression that it will not be likely to meet the high anticipations of some of its advocates.

There is nothing in the way of success on the score of preservation. The testimony in favor of its not spoiling the food for six months or a year is unquestionable, if properly managed. But the green food does not remain in the same condition in which it is buried. Fermentation, it is stated, sets in and runs for about two months. During this process the character and composition of the food becomes materially altered.

First, it loses a part of its water. This is no detriment, and perhaps an advantage, as the food which is accustomed to be preserved contains an excess of moisture, an objectionable feature in food at any time, but more especially so in food for cold winter weather.

The carbohydrates—the heat and fat producing elements—become changed, losing something of their value and forming new products such as carbonic acid gas, new fatty acids, alcohol and ammonia.

Notwithstanding the large amount of souring produced by the long continued fermentation, the food is said not to be sour, but, on the contrary, alkaline, on account of the large development of ammonia, which is more than enough to neutralize all the acidity produced. This being so, it argues a greater loss of flesh-forming matter than of sugar and other fat-producing substances, since the ammonia must come from the flesh-forming matter. But a loss of a part of the nutrient and fattening material does not of necessity decide the comparative merit of saving fodder by the new process, because it is possible there may still be left in it as much, or even more, digestible and consequently available food than there would have been had the green herbage been left to mature to the usual extent, and then been preserved in the ordinary way. It is a well-known defect in much, I may say most, of our winter cattle food, that while the nutriment in it may be good enough, it fails to give satisfactory results because it is in a comparatively indigestible condition from becoming too ripe.

Food in its natural state, that is, with its life-sustaining properties unchanged in quality, is the most conducive to health and to the best milk and the finest butter and cheese. When we deviate from this, as we do when food is fermented, we depress its ability to produce the finest effects. Not that cattle food is always in its best condition when used just as nature produces it. Immature clover, for example, makes better milk when partially or wholly dried than when grazed from the field, especially if the growth is very vigorous and rank. There is no change in the food material in this case. The difference is that a part of the excessive water and some of the objectionable flavors pass off in drying and even in wilting, improving thereby the flavor of the milk made from it. The same is true in the use of green lucerne and other green plants of the clover family, and very green and succulent fodder corn and some other kinds of herbage when fed in a fresh and green stage.

With the same green food the chances for fine quality are better when it is fed dry and otherwise in a natural condition, than when it is fed undried and fermented.

The great defect in our winter food for the dairy is not so much that it is dry, as in the fact that it is cut when it is too far matured, at a stage when much of its value has been dissipated and when it can only be slowly and imperfectly digested. Such food makes it an up-hill business for cows to sustain themselves in our long cold winters, to say nothing about giving a large yield of superior milk.

When dairymen will adopt the practice of cutting the winter food for their dairies early while it is in its best condition, instead of leaving it to ripen till it loses in value and digestibility because it will dry quicker, there will be little occasion for ensilage to improve the quality or increase the quantity of milk. For this purpose dried grass and other dried food, with such green roots as can be easily preserved, it is believed will be found cheaper and superior to the same material fermented in silos. Whatever the result may prove when fully tested, it will be the part of wisdom to move cautiously in its adoption.

Drink for Dairy Cows.

A writer in the Southern Farmer says that his cow gives all the milk that is wanted in a family of eight, and that from it, after taking all that is required for other purposes, 260 pounds of butter were made this year. This is in part his treatment of the cow:

"If you desire to get a large yield of rich milk give your cows every day water slightly warm and slightly salted, in which bran has been stirred at the rate of one-quarter to two gallons of water. You will find, if you have not tried this daily practice, that your cow will give twenty-five per cent. more milk immediately under the effects of it, and she will become so attached to the diet as to refuse to drink clear water unless very thirsty. But this mess she will drink almost any time and ask for more. The amount of this drink necessary is an ordinary water-pail full at a time, morning, noon and night."

WINTER FEEDING OF DAIRY STOCK.—The Agricultural Economist (England) says:—Then, in regard to dairy farming it is tolerably evident that farmers in general are not half particular enough as regards the quality of the food which their animals eat. Grass is grass; and hay, hay, with the majority of feeders, whereas a chemical analysis would often show a difference of something like 50 per cent. in such products going under the same name. The good policy then of adding to poor grass and poor hay some richer adjunct so as to bring the nutritive quality of the dietary up to a high standard, ought never to be overlooked. When the milk is sky blue in colour, and raises only a thin head of cream, the probability is that the feeding of the cow requires to be improved, and the bestowal of a little corn meal, or bran, under such circumstances, would be likely to prove highly remunerative in results.

Feeding for Milk.

Prof. Dale, of Norwich University, Vt., gave the result of an experiment in feeding milch cows, to the *Vermont Chronicle*, going to prove the special value of corn meal and bran in the production of milk. We condense his report somewhat as follows:—

I had three cows, which I was feeding for the double purpose of getting milk, and at the same time fattening for beef. They were all farrow, one of them had been so for two years. They belonged to the common breed, and where what are called good milkers. At the time I began feeding they did not give enough to pay for the hay they ate. My object in experimenting was to find out, as near as possible, the most profitable feed. I continued the trial for four weeks with the following result.

The feed the first week was 8 lbs. of "shorts," half a bushel of sugar beets, and 10 lbs. of hay per day to each cow. I fed the shorts night and morning, 4 lbs. at a time. The beets were given at noon. They were fed all the hay they would eat up clean, three times a day. Thus, the first week I fed the three cows 210 lbs. of hay, 168 lbs. of shorts, and 10½ bushels of beets. The hay was of poor quality. I estimate the cost as follows: 168 lbs. of shorts at \$25 per ton, \$2.10; 210 lbs. of hay at \$12 per ton, \$1.26; 10½ bushels of beets at 15 cts. per bushel, \$1.57. Total, \$4.93. We got 379 lbs. of milk, making 16½ lbs. of butter, taking 23 lbs. of milk to make 1 lb. of butter. The butter was of the best quality, and at 30 cts. a lb. would bring \$4.95. There was in addition the skimmed milk, and a steady gain of the cows in flesh.

In the second week the feed was the same as the first, with this exception—instead of feeding 8 lbs. of shorts, I gave them 8 lbs. of feed, composed half each of corn meal and shorts. This week I got 364 lbs. of milk and 18½ lbs. of butter, or 1 lb. for a little over 21 lbs. of milk. The cost of feed this week, calling corn as I did \$2 per hundred, was \$5.65. The butter was worth, at 30 cts. a lb., \$5.55.

The third week the feed was the same as the first, with the exception of feeding bran instead of shorts. Amount of milk this week, 380 lbs; both butter and milk same as first week.

Fourth week same as second, only using bran instead of shorts. Milk this week 480 lbs.; butter, 19 lbs. Cost of feed same as second week, \$4.65; butter worth \$5.70.

I have not tried corn meal alone as grain feed, but from former experience am convinced that it is not as valuable for milk as either bran and corn meal mixed in equal parts.

I have no doubt from the above results and my observations since that no better feed can be given cows than corn meal and bran mixed. The cows have not only more than paid their keeping in milk, but have steadily gained in flesh, and are now fair beef. Had I only fed common hay, such as I had, they would not have paid their keeping. Perhaps I should state that all the feed was scalded, and cold water added, making a pailful at a time per cow. The butter made was very nice, far better than it would have been with only hay for fodder. I am satisfied that bran is fully equal to shorts in value, and to mix with corn it is better. With bran at \$25 per ton, and corn at \$40, I would use as much corn as bran, and feed them mixed. I have said little about the roots fed, my object being to determine the best kind of grain or feed to buy. But so well satisfied am I with the result of feeding roots that I would not on any account be without them. Every farmer would find it to his advantage to raise from 75 to 100 bushels per year for every cow.

WANT OF SUNSHINE.—Some idea of the clouded atmosphere of England during the late summer may be had from the observation of the speaker of the House of Commons. At his harvest home he said:—It is a very remarkable fact that the sun during the months of June, July and August, has been veiled by clouds for no less than 1000 out of the 1400 hours it has been above the horizon. No wonder that the harvest has been late.

It is said that a company of Germans have offered to come to Baltimore and set up a large sugar factory, provided the farmers will plant 2,000 acres, at least, with German beetroot. They guarantee to take the whole produce at the rate of \$5 per ton. It is considered that good land ought to produce 30 tons of beets per acre.