

too much, and where that takes place it gives a strong odor, which is objectionable." Mr. Andrews regards the silo as a valuable adjunct to a dairy farm, and says his experience leads him to believe that clover in the silo is a distinct success.

Earth Roads.

From a bulletin recently issued by the Wisconsin Experiment Station, we clip the following extracts on the construction of earth roads. The suggestions offered will be of interest at this season when road work is in progress. One point worthy of special notice is the importance attached to the use of the roller in roadmaking. The general practice in this country is to throw up the grades and leave the packing of the soil to time and traffic. On some soils this plan may answer well enough, but on clay soils there can be no doubt of the benefit that would be derived from the proper use of the roller.

Earth Roads.—In the country in most parts of this country the greatest number of miles of travel for a long time to come must be made over earth roads. It is therefore of great importance that they should be built in the best possible manner. The proper construction of earth roads is made the more important through the fact that when well built and well maintained there is no road easier on the team, the carriage or the parties riding, where speed is an important consideration, than an earth road.

Forming the Roadbed.—After the grade has been established and underdrainage provided where necessary, all organic material and stone should be cleared out of the way and the road given the form and width desired by a modern road machine or by other means.

The road itself should have a width of 16 or 18 feet, bordered on either side by a strip of grass three feet wide, outside of which should be the surface drains, where needed, five feet wide at the top, two feet at the bottom, and 24 inches deep, making a total width of 32 or 34 feet.

The center of the roadbed should be thoroughly rolled with as heavy a roller as practicable in order to compact it and to discover in it any soft places. If soft places are found, these should be filled and brought to the proper level. If the soft place is due to a different kind of material, this should be removed and replaced by other and better.

The center of the finished road should be two to six inches higher than the margins at the grass border, varying with the width of the track, in order to give quick, complete surface drainage, and this should be built up in thin successive layers of as uniform material as possible. If earth is brought in from the sides and ditches, great care should be exercised in distributing it evenly and thoroughly harrowing it ahead of the roller, so as to secure the necessary uniformity of texture. This is of the utmost importance in order to prevent the formation of ruts. Thorough rolling should follow the addition of each layer of material, and should be kept up until a hard, even surface has been secured.

In making earth roads it is particularly important not to make them wider than necessary, because the narrow road is always more quickly and better drained, and lack of drainage more than anything else will destroy the earth road.

If the soil contains cobble stones, everything larger than one inch in diameter should be thrown out, otherwise they will form ruts.

If, in establishing the necessary grades on the earth roads, fills must be made, this filling should be done systematically, distributing the earth in uniform layers, which are thoroughly firmed with the roller as the work progresses.

Preparing the Roadbed a Year or More in Advance.—It will generally be found advantageous to get the roadbed into proper shape to receive the surfacing material, whether this be gravel or crushed rock, a year or more in advance, utilizing the weathering of rains, the frost of winter and the traffic to settle the roadbed, but directing and assisting these agencies by a timely and judicious use of the harrow, road machine and roller. It is particularly important to allow time to intervene where there has been much filling necessary.

Roads on Gravelly Loam.—Where the soils are a gravelly loam, the best earth roads are possible. The reason for this is found in the fact that a gravelly loam is made up of large and small grains in such proportions that when they are thoroughly worked and compacted the coarser sand particles work in between the gravel, and the fine clay particles between those of sand, in such a way that there is left almost no open space; under these conditions the water is shed the most rapidly and completely so that the road is less liable to soften under the travel over it, and it is less liable to be injured by frost.

Roads in Fine Clay Soil.—Where the soil is a fine adhesive clay it is hardly possible to make a good road without the aid of foreign material. Of course, by grading it into proper form so as to secure the needed drainage, the road will be good when it is not wet, and under these conditions it will remain fair much longer than if not so prepared, because, when this soil has been once thoroughly compacted and dry, water enters it very slowly, so that it is only during long wet spells and when the frost is going out that the most serious injury to the road comes.

Clay Roads Surfaced with Gravel.—Where gravel of suitable quality is available, a covering of three or four inches, thoroughly rolled and packed,

will very greatly improve the surface of a clay road, preventing it from softening so readily with every rain and with the action of frost. Even sand and good loam, where nothing better is available, will improve the quality.

Practical Pointers on Hoed Crops.

We find it to be of the greatest advantage to have the ground prepared as early as possible. If it can be manured the previous fall, so much the better. Our ground for mangolds and carrots was plowed twice last fall and manured at the last plowing, and this spring we cultivated twice and got the ground in good shape, and the mangolds are up now very nicely. For our corn and turnip ground we haul the manure out in the winter, spreading from the sleigh or wagon, and plow down as soon as we can get at it, and then harrow or roll about once a week until time to plant or sow. After the corn and potatoes are planted we generally harrow twice, once shortly after planting, and again as the crop is coming up, if it does not come up so soon that we cannot get it done. We try to have the ground as fine and mellow as possible before planting. Roll the ground and then mark off 3 feet each way. Plant the potatoes with the hoe and the corn with the corn planter. We endeavor to cultivate the growing corn and roots at least once a week, but generally about twice a week, one way at a time for the corn and potatoes; but the time of cultivation depends a good deal upon how the showers come in, as we try to cultivate as soon after a shower as possible. Several years ago we made a practice of hilling up everything, corn, potatoes, carrots, mangolds and turnips. Now we only hill up the potatoes, and we leave that as late as possible. If the tubers would not get sunburnt, perhaps it would be better not to hill at all. For the corn, after the first or second cultivation, we run the cultivator as lightly as possible, but for roots I approve of going down much deeper. We find that when the ground is properly prepared for corn and potatoes, and the harrows and cultivator kept going as they should be, that there is very little left for the hand hoe to do.

Oxford Co., Ont.

Advocates Flat Culture of Roots.

To the Editor FARMER'S ADVOCATE:

For years I have been an ardent advocate of flat cultivation of hoed crops, and was for years the first to adopt drilling of turnips and mangels on the flat in my neighborhood, over 20 years ago, since which time I've seen no reason to change my mind upon that method. I don't claim any originality in such cultivation, but was convinced on my trip to England in 1871. Surface cultivation was being entirely adopted at that time in the very district where, when I was a boy, ridging was the only plan.

Middlesex Co., Ont.

RICHARD GIBSON.

DAIRY.

Treatment for Caked Udder.

To the Editor FARMER'S ADVOCATE:

SIR,—Having heard and read a great deal lately about the trouble people have with "caked udder" in cows, I thought possibly my experience might be of some use to someone. Until last summer I did nothing but rub and rub, until the cow's bag was quite soft and my arms were quite numb; but last summer I had a case that I could not rub out. This cow has a very large, fleshy bag at all times, but had never been troubled with "cake" before. However, her bag swelled to an enormous size, and as she is a vicious kicker when she goes at it, I was in despair, when my mother thought of an old remedy people used when she was a girl, if cows had "caked udder." We made a trial at once, and in two days the udder was nearly well, and I had no more bother. The remedy is: Bittersweet (roots or stems) fried in lard or new butter—no salt. Make a strong "solution" of course, and rub on three or four times a day. The bittersweet can be got in almost any woods.

Middlesex Co., Ont.

[NOTE 1.—Bittersweet (*Solanum Dulcamara*), also known as Woody Nightshade, is a shrubby climber, with blue flowers and red berries. The stem branches several feet, climbing about hedges and thickets in low ground. The red berries are said to be poisonous.—EDITOR F. A.]

NOTE 2.—In our experience with caked udder in cows, which has been considerable, we have, during the last ten years, adhered to the use of an ointment having the following ingredients: Lard, $\frac{1}{2}$ lb.; spirits turpentine, 2 ozs.; sal ammoniac, 1 oz.; St. John's wort, 1 oz.; oil of vitriol, $\frac{1}{2}$ oz.; oil of swallows, $\frac{1}{2}$ oz.; oil origanum, $\frac{1}{2}$ oz. Melt all together, except the vitriol, which must be put in when the remainder is nearly cold. Stir well.

We usually give a physic of one pound of Epsom salts as soon as a cow gives evidence of requiring treatment. We milk out the udder as cleanly as possible two or three times a day, bathe well for half an hour with quite warm water, and rub in the ointment thoroughly. We have never had a case this would not relieve in two or three days.—EDITOR F. A.]

Butter--From the Stable to the Table.

BY MISS LAURA ROSE.

ARTICLE VI.

CHURNING, SALTING AND WORKING.

We have been quite a time arriving at the actual buttermaking, but patience and care are always necessary where satisfactory results are to be expected.

When starting to churn, first stir the cream thoroughly, taste and smell it to see if it be sufficiently ripened and of good flavor. This helps one locate any defect that may appear in the butter. With a tested thermometer take the temperature. If it be too cold, place the can in a pan of hot water and stir, always lifting the cream from the water when a few degrees below the desired temperature, as the hot can will bring up the temperature several degrees. Try not to have the cream so warm that it has to be cooled down before churning—it is apt to give a soft-textured butter.

I cannot give any definite or fixed temperatures for churning, as there are so many conditions to be considered. The poorer the cream the higher the temperature; the less cream in the churn, the lower the temperature. Cream from cows long in milk requires a higher temperature. Feed, breed, and the individuality of the cow, all to a more or less degree influence the churnability of the cream. Avoid having too much skim milk in the cream and too much cream in the churn. These are the two chief conditions which cause long churning. With cream testing 25 per cent. butter-fat, and the churn never over half full, little difficulty should be met with in bringing butter. Where cream is properly cared for, the churning temperature in winter will vary from 56 to 62 degrees, and in summer from 51 to 60 degrees. The temperature which will bring butter in nice granular form in 30 minutes will be your churning temperature.

The churn may be either round or square, but should have no dashers or workers inside.

Scald the churn with one-half pail hot water; rinse with plenty of cold water. I find it a good plan to empty the water out of the churn instead of letting it run through the plug hole. It is a quicker way, and, besides, will carry off any dust, dead flies, etc., which otherwise would settle to the sides of the churn.

Strain the cream into the churn through a perforated strainer dipper. Every dairy should have a dipper for this purpose. A tinsmith should make a good large one (9 in. across and 7 in. deep) for 50c. The bottom should be entirely covered with perforated tin—9 or 10 perforations to the inch.

In winter it is desirable to use a little butter-color of a reliable brand—a teaspoonful to 4 gallons of ordinary cream is sufficient. Always err in having the butter under rather than over colored. Measure the color and pour directly on the cream. Put on the lid and revolve the churn 70 or 80 revolutions to the minute. Draw the plug occasionally to allow the gas to escape.

When the butter has nicely broken add two or three quarts of water, the temperature of which will depend on the condition of the butter. If it has been quick in coming, have the water 52 or 54 degrees in winter and colder in summer.

If the cream is poor and you have been a long time in getting butter, do not add the water until you have the butter the size of wheat grains and are ready to draw off the buttermilk. The water dilutes the buttermilk and causes the butter to float more readily.

Place the strainer dipper over the pail and let the buttermilk drain through it. If specks of butter come with the first drawn buttermilk, it is the surest sign I know of that the butter is not quite churned enough.

In winter always take the temperature of the wash water, which will range from 52 to 56 degrees, according to the firmness of the butter and the heat of the room the butter is to be worked in.

Use as much or rather more water than you have cream. Put a couple of thicknesses of cheese cloth over the strainer dipper and pour the water through it into the churn.

Put on the lid and revolve the churn rapidly a dozen times. One washing is sufficient unless the water comes off very milky, which it should not do. The oftener butter is washed the more it is robbed of its aroma. Let the butter drain 10 or 15 minutes.

There are several methods of salting. I prefer salting in the churn. The only drawback it has is the difficulty in determining accurately how much butter there is in the churn. Where scales are handy the churn may be lifted off and weighed, and the weight of the churn deducted from the entire weight. Where the same amount and kind of cream is churned, the maker can have a close idea how much butter there is, but do not guess at the salt—always weigh it.

The quantity to use will vary with the taste of the consumers. Educate them along the lines of taking less salt. They will eat more butter, and, moreover, it is a shame to completely hide the flavor of excellent butter with salt. One ounce to the pound when salting in the churn, and three-quarters of an ounce when salting on the worker, is sufficient.

After the amount of butter has been ascertained and the salt weighed (use only the best dairy salt), sift the salt through the dipper (you see how many times the strainer dipper can be used), put the lid on and rotate the churn a few times; let stand for about half an hour, then gather into lumps by