

wide. They are open at each end, and set on mats of rushes sown together. The molds are filled with the curd, from which the whey drains through the rushes on the sloping table, around which a groove is cut to carry it to the drain by which it flows away. As the whey drains from the curd, this shrinks in volume until the cheese has gained sufficient consistency to be handled out of the mold, which is at the end of the second day. They are then taken out of the molds and sprinkled with salt, and left on the mats three or four days longer. They are then placed in shallow wooden boxes with handles, and are in this way removed to the drying-room. Here they are arranged on frames, of which there are several tiers, and are exposed to a free circulation of air, regulated by swinging shutters. These windows are not glazed, but they are protected by fine wire gauze to keep out the flies, and as the direction of the wind varies so, the shutters are opened or closed fully or partially in such a manner as to direct the air currents over or under the cheeses lying on the lathed frames, through which the air has complete access to the cheeses. Here they remain from twenty to twenty-five days, according to the weather. They are then removed on large, movable tables to the curing-cellar, where the circulation of the air is much increased by the management of windows, similar to those previously described, and the shutters fitted to them. At this time the fermentation of the cheese begins to throw off moisture, which gathers on the surface of the cheese. At this stage the cheeses are removed to the finishing-cellar, in which the windows are glazed and protected by inside blinds.

In this place the cheeses remain a month or less, as the ripening may progress slowly or rapidly. During this time they are turned once in forty-eight hours. This constant turning is a special process for the fullest exposure of the cheeses to the air, and is practised all through the curing, gradually increasing the time of the turnings if the ripening may be proceeding too quickly. At the end of the term the cheeses are complete, and are packed in paper and put in boxes. They are then packed and put in wicker baskets and sent to market. They weigh about eight ounces and sell for about one shilling and sixpence each. The finest selected cheeses are sent to special customers who pay one-fourth more. The prices vary as the season or the demand and supply, but usually they remain about the same for years. Such a desirable cheese as the Camembert is, of course, imitated and sold at a less price, but on account of the strict way the French Government has of controlling such things, the imitation is sold for what it really is, as fromage facon Camembert, which does not deceive the purchaser in any way.—*Journal of the Society of Arts.*

To Prevent Cows Kicking.

I have noticed in your paper several articles on how to break a young or kicking cow. I have tried all, but none seem to be so effectual as my plan. First put the cow in a stallion, near the wall of the stable, so she cannot move around much, then tie a rope around the right foot, make the other end fast to a ring in the wall or a post directly behind. The foot should be drawn slightly back of the other, so when she moves or makes an effort to kick she can not strike the wall. If this is done for a few times, at the same time being very gentle to the animal, the sight of the rope will be enough to cause her to stand and give her milk peaceably. I have never known this plan to fail.

Oak Lake.

JAMES ARMSTRONG.

An English Jersey Butter Test.

In the Jersey butter test at the Royal Counties Show, Eastbourne, Eng., 18 cows competed. The cows were milked out at 5 p. m. of June 9th, the following 24 hours' milk being used for the test. The milk was separated at the close of the test, and on the following morning the butter was made. The 1st prize, consisting of a gold medal and £3, was awarded to Red Light, exhibited by the Jersey Herd Dairy Co. She is about seven and one-half years old. She had been 69 days in milk. Her yield was 41 lbs., producing 2 lbs. 10 ozs. of butter. The 2nd prize, a silver medal and £3, was awarded to Syphon, a four and one-half years old cow, shown by Dr. H. Watney. She had been 74 days in milk, and gave 42 lbs. 12 ozs. of milk, yielding 2 lbs. 4 ozs. of butter. Capt. Fraser showed the five-year-old Lady March, the giver of 44 lbs. 12 ozs. of milk, yielding 2 lbs. 4 ozs. of butter. A bronze medal and £3 made up this third prize. The next five cows received certificates of merit.

To Keep Butter Firm Without Ice.

A correspondent of *Hoard's Dairyman* gives the following method of keeping butter firm without the use of ice: "Take a tight box (ten or twelve inches high, twelve to fourteen inches wide, and eighteen to twenty-four inches long), that can be got at any grocery store, put a loose shelf about five inches from the bottom, on which to place the butter. Set a dish containing water in the bottom of the box, and place the butter on the shelf. Take a piece of cloth large enough to well cover the butter and drop over the edge of the shelf into the dish of water. Moisten the cloth, spread it over the butter, and let the end drop into the dish of water, and it will take up the water so as to keep the butter cool and hard and free from salt crystals and in fine shape for table use. Toweling crash is the best cloth to use for the purpose. The box should have a cover."

Fat Burnt While Testing Milk -- Wants Light -- May be Got at the Provincial Dairy School, Guelph.

To the Editor FARMER'S ADVOCATE:

SIR,—A manager of a cheese factory in Western Ontario writes to the Dairy Department that he is willing to pay for milk by the test plan as soon as he is satisfied that everything is all right, but that he could not do so "on the present testing." A description of his method of taking samples and testing is also enclosed, from which we learn the cause of his trouble: "The fat on rising to the top is not clear, but in a dark condition, as if it were burnt. There is very little showing of clear fat in the neck of the test-bottle, and sometimes none at all." The causes of this are at least two, as described in letter:—

1. Too much bichromate is used. The writer says he used one half a teaspoonful of bichromate of potash to each sample. Half this amount would preserve the samples and give clearer readings when tested. At present we are using a milk preservative made as follows: Seven ounces of potassium bichromate are mixed with one ounce of corrosive sublimate, and we use about what would lie on a five-cent piece to preserve a sample for two weeks. We take about a fluid ounce of milk each day from the patron's can. The mixture was made by a druggist in the City of Guelph. Any druggist would prepare it, and it ought not to cost over thirty to forty cents. We would recommend six ounces of chromate to two ounces of sublimate as likely to give better results than the seven-one mixture.

2. The second cause of this maker's trouble is to be found in the fact that he "put in five drams of sulphuric acid," which is too much. A measure holding 17.5 c. c. should be used for the acid. Five drams is about 19 c. c., and if the acid were proper strength it would burn the fat.

The Babcock tester and the making of composite samples are fully explained at the Provincial Dairy School, which opens Jan. 15th, 1897. Any maker who has trouble in testing or who does not understand the Babcock tester ought to avail himself of this opportunity to become familiar with the tester, besides learning many things that will be valuable to him as a cheese or butter maker.

O. A. C., Guelph.

H. H. DEAN.

GARDEN AND ORCHARD.

Cultivation of the Orchard.

(Given by W. W. Hilborn before Farmers' Institute, Div. No. 5.)

This is about the northern limit (Simcoe Ont.) in which the apple succeeds, and must, therefore, receive special care to make it a very profitable crop.

There is no doubt in my opinion but that this fruit can be grown very extensively in this section and give greater returns for the time and money expended than can be obtained in growing most other crops. We all know that grain farming does not pay as it once did. We should therefore look around and see what changes in crops can be made that will pay. There is a large portion of this country admirably adapted to the growth of the apple. The farther north we can perfect this fruit the higher color, finer flavor, and better keeping qualities will it have. These are all points of the greatest importance, and I have visited no locality where they can be obtained to a higher degree. More care and skill, however, is required in the cultivation and management of the orchard where the growing season is somewhat shorter and the cold of winter is more intense. We must aim to get an early, vigorous growth of wood, and to ripen the wood and fruit buds thoroughly in the autumn. With this end in view, I would recommend the following method of planting and cultivation of the orchard as likely to give the greatest measure of success:—

Selection of Trees.—Always select young, healthy trees, two years old from the bud, or not more than three years old from the graft. If they show any appearance of *black heart* do not plant them, as they will not recover. This may be detected by looking at the scars made on the trunk of the tree where the side branches have been pruned off in the nursery. If these wounds have healed over nicely there will be no danger of black heart. If they have not healed over, but have turned black, and the bark around them shows a dark discoloration, caused by the sap oozing out, I would expect to find the heart of the tree dead or discolored, from which they do not recover, and never make healthy trees.

Soil.—The soil should be a good friable loam, well drained, either naturally or by underdraining. A northern slope is to be preferred. Select the highest elevation you have, other conditions being equal.

Planting.—This should be done when growth begins in early spring. Plant a little deeper than they were in the nursery. First prune off all injured roots, and one half or more of the top. Dig the holes larger and deeper than required to admit the roots of the tree—use soil of good, medium fertility to put in among them. This should be

well rammed in among the roots. Always save the richest soil or loam to put on top as a mulch around the tree. Never let manure come in contact with the roots of any plant or tree when planting. Never plant when the soil is wet enough to cleave together badly in handling. Another important matter is to keep the roots covered while out of the ground; many a failure can be traced to the neglect of this precaution. My own method is to place a large box on a stoneboat, put the trees in the box and mix wet straw with the roots. Drive along when planting and take out the trees just as wanted.

They should be planted at least forty feet apart to give best results, especially now that spraying has to be resorted to.

Cultivation.—This is the all-important matter. We find most all of the orchards throughout the country are very much neglected in this respect. Especially is this true with old or bearing trees. This gives one the impression that they are now considered old enough to take care of themselves. This method of treatment will pay just as well as it pays to keep dairy cows around the straw stack during winter with no other food or protection.

Very many farmers do not know that an old orchard requires cultivation. This no doubt is largely owing to the fact that many of the agents who go around selling trees tell them that no special cultivation is required; that they can grow grain or other crops among the trees while young, and seed down when older and get a crop of hay as well as apples.

With the experience I have had I would recommend that no more trees be planted than can be well cared for every season. With the method of culture I shall outline, more net profit can be obtained from one acre than is usually taken from ten as usually managed.

We must know something about the needs and requirements of a tree before we can cultivate intelligently. We must ever keep in mind the fact that mother earth is the greatest storehouse of plant food, and that all fertilizers we can add are only of secondary consideration. We must therefore cultivate or stir the soil often to prepare the plant food, or bring it into a condition to be utilized by the tree. We must also remember that however great the supply of plant food contained in the soil, it can be of little use to the tree without a sufficient supply of moisture during the period of growth. Moisture is present in sufficient quantities in the spring, and may be conserved by oft-repeated stirring of the soil during dry weather. While the trees are young, any crop may be planted between them that will admit of early and constant cultivation. When they are old enough to produce paying crops of fruit, no other crop should be grown. Give all of the space to the trees and continue to give good cultivation from early spring until the middle of August or first of September. At this time sow to rye, fall wheat or crimson clover. This early sowing of grain will give a covering to the soil that will catch and hold the snow during winter, and prevents the rapid changes of freezing and thawing. The greatest benefit, however, is usually derived from the great evaporation that takes place of the surplus moisture through the medium of the growing plants. This would otherwise go to stimulate a late growth of wood in the tree that would not fully mature their fruit buds. This crop must be plowed under early in the following spring, and the same treatment as above outlined should be continued from year to year. Never on any account allow the land to remain for a single season in grain or grass. Cultivation should always reach to about the same depth, whether done with the harrow, cultivator or plow, especially among large trees. The small fibrous or feeding roots of the tree naturally come towards the surface, or as near to the surface as the soil is undisturbed. It will be quite evident that if the soil is worked shallow for some time and then turned up deep, that countless numbers of those rootlets are destroyed. I would therefore advocate shallow cultivation at all times in the orchard. I am pursuing this method with very satisfactory results.

Trimming.—This may be done every spring as soon as hard freezing weather is past. Cut out all superfluous branches and shorten in the new growth of young trees if growing rapidly. It is quite common to find the pruning of the bearing orchard neglected for two or three years at a time. The professional pruner comes along in the winter looking for a job, and if he has an oily tongue usually succeeds in getting it. When he invades an apple tree his first operation is to cut out the center of the top, as he says, to let in the sunshine, but more properly speaking, to make room for himself to stand while mutilating the tree. When done it is hard to tell whether the tree or the ground contains the most of the top. This sudden check to the growth of the tree is most ruinous. Where the sun shines directly into a tree top that has heretofore been shaded, and its rays strike the larger limbs, they are sun-scalded, and borers get in their work and ruin is the result. Should the pruning of an orchard be neglected for two or three years, it will not answer to take out all in one season that should be removed. Rather take two or three years to rectify the mistake or neglect. Thin out the top enough to admit of a free circulation of air, and leave enough foliage in the center of the tree to shade the large limbs. If properly trimmed every spring there will be but few large limbs to be taken out at any time, and thus the health of the tree will be preserved.