consumed by the State. In addition to this, by-products—beet molasses and beet pulp—were also made a source of revenue, the two latter being sometimes combined and dried to form a cattle food, which has been highly commended. . . . . The bulletin, on the whole, represents the outlook of the beet industry as bright, and expresses the hope that the State will before long be able to raise its own supply of sugar.

Points in Plowing.

A Haldimand Co. subscriber enquires: 1. What is meant by shallow plowing? Is four inches too shallow? In sod plowed shallow, how do you prevent the sods bothering and the grass growing from the sods? Does the fertility gained by shallow plowing counterbalance losses occasioned by the sods and by inferior drainage? Does it make any difference as to wisdom of plowing shallow or deep for what crop the land is intended, and what has been grown on the land before?

2. Which is preferable for clay lands, wide or narrow lands—how wide or how narrow? Does the preceding or following crop make any difference, or whether the land is rolling or flat? Would a crop which is poor in the furrows of a field plowed in narrow lands have been better or worse if the lands had been wide?

Ans.—1. Four inches would generally be considered mere skimming; five inches is shallow; six or seven inches deep is moderate. It is not quite correct to speak of fertility gained by shallow plowing, though by deep plowing more may be lost by leaching. Grass will grow worse in sod plowed shallow in spite of all that can be done, but light repeated disking is probably as good treatment as can be given. As to whether deep or shallow plowing is best depends somewhat on the crop to be grown, but much more on the time of year. Plow deep in fall, shallower in spring. Where the surface is clean and fine it is often better not to plow at all, simply stir the soil.

2. For hard, level, undrained clay lands, 14 feet wide answers well, whatever the crop to be grown; but where land is rolling, or has porous subsoil, or is well underdrained, narrow ridges occasion loss, and are a good deal of a nuisance in working machinery.

Preparation of Sod for Corn and Roots.

To the Editor "Farmer's Advocate":

We find that by plowing our sod as soon as possible after haying and harvest we can get it in much better condition for the growing of crops the next season than by leaving it until fall. Our method is as follows: We plow the sod about four inches deep, keeping it disk-harrowed as we plow, to prevent baking. Cultivation is then kept up at intervals of two weeks, and after every heavy rain, to prevent the soil from drying out and to induce the sod to decay. At the time of fall plowing the soil is given a deep working with the spring-tooth cultivator. Any manure we may have is then hauled and spread, and the soil "ribbed" up for the winter. This ribbing is most easily done by the use of a double-mouldboard plow. We, however, have done it with a common walking plow. When finished the field will resemble one prepared for sowing turnip seed. In the spring we begin cultivating early, by first giving the ribs a stroke with the harrow, and following with the spring-tooth cultivator. At the proper time this soil is planted with corn, roots, potatoes and peas; these crops being followed the next season by oats and barley.

Summarized, the advantages of this method are:—1. Allows the sod to decay and weed seeds to germinate before planting time. 2. Prevents surface washing, by leaving a large number of runways for the surface water. 3. Minimizes the waste of manure, by covering it up within the ribs. 4. Allows earlier cultivation in the spring. 5. Exposes more surface to the pulverizing and oxidizing action of the frost. B. J. WATERS.

Middlesex Co.

Thorough Tillage Advised.

It must not be thought that tillage is a complete substitute for manures, for it is not, but that it will take the place to some extent and produce heavy crops on any fairly good soil has been proven time and again. If there is any question about this in the mind of the reader, let him try the plan on his fields that are being prepared for winter wheat. After they have been prepared as usual, take a cultivator and work the fields over again, both ways; then roll down firmly. Then go over it in the same manner once or even twice more, being sure to roll firmly before drilling in the wheat. By way of comparison, leave one field as you ordinarily prepare it. The results of the field prepared by thorough tillage will surprise and make a convert of you.—[Farm-stock Journal.

Dairying.

Dairy Cow Records at Mallorytown.

The following is the record of individual cows for the 30 days ending July 31st, 1905, at Mallorytown, Ont., under the direction of the Dominion Dairy Division:

Herd No.	No. of cows.	Average per cow. Milk lb.	Fat %	Fat lb.	Highest per cow. Milk lb.	Fat %	Fat lb.	Lowest per cow. Milk lb.	Fat %	Fat lb.
51	9	636	3.8	24.7	990	3.5	34.6	400	3.9	15.6
52	13	882	3.9	32.8	1140	4.0	45.6	620	3.8	28.5
58	17	664	4.1	28.7	1020	4.1	41.8	460	4.8	19.7
54	9	833	3.8	31.9	980	4.0	39.2	740	3.6	26.6
55	18	709	3.8	26.9	830	4.1	34.0	680	2.6	16.3
56	13	794	3.6	28.7	1125	3.5	39.3	680	3.3	22.4
57	17	680	3.5	24.1	1060	4.1	43.4	870	3.3	12.2
58	17	802	3.5	28.5	970	4.3	41.7	480	4.0	19.2
59	16	766	3.8	29.6	1130	4.1	46.3	565	3.6	21.0
60	90	939	3.8	35.7	1160	4.2	48.7	720	3.3	28.7

Average of 159 cows: 782 lbs.; 3.8%; 29.7 lbs.

Pointers for Users of Babcock Test.

In the O. A. C. Bulletin No. 143, entitled "Dairy-school Bulletin," some useful cautions and hints on the use of the Babcock test are offered by J. A. McFeeters:

1. Always make sure that the pipettes and test bottles are clean before using.

2. Be very careful to measure the exact amount of milk for a test. A 17.6 c. c. pipette will deliver about 17.5 c. c. of milk. This measurement of milk of average quality will weigh about 18 grams.

3. A partially-churned sample of milk may be prepared for sampling by heating it to about 110 degrees F., and pouring it from one vessel to another, to mix it thoroughly. When it is thus prepared, take a sample as quickly as possible, and cool to about 60 degrees F. before adding the acid.

4. In sampling frozen milk, it is necessary that both the liquid and the frozen part be warmed and mixed thoroughly. The unfrozen part is richer in fat and solids than the frozen.

5. A sample of milk that has soured and thickened may be prepared for sampling by adding a small amount of some alkali to neutralize the lactic acid and cause the curd to redissolve. A small amount of powdered concentrated lye is very suitable. Add just a small amount of lye at a time, and pour the milk from one vessel to another to mix the lye with the milk, which causes the casein to be dissolved.

6. The amount of acid used must be varied to suit its strength. The right amount is being used when the fat presents a bright golden appearance. Acid that is much too strong or too weak should be discarded, as satisfactory results cannot be obtained from its use. Acid a little weak is to be preferred to very strong acid. Carboys or bottles containing acids should be kept well corked to prevent the contents from becoming weakened by absorbing moisture from the atmosphere.

7. Avoid pouring the acid directly on the milk. The test bottle should be held at an angle so as to cause the acid to follow the side of the bottle and go directly underneath the milk. After the addition of the acid to the test bottle the milk and acid should be in two distinct layers, without any charred matter between them. A thorough mixing by means of a gentle rotary motion should be given at once.

8. If using a hand tester in a room at a low temperature, it may be necessary to keep sufficient hot water in the machines to maintain a temperature of from 120 to 140 degrees F. in the test bottles.

9. The water added to the test bottles should be soft or distilled. If hard water is used, add a little sulphuric acid (half an acid measure or a little more to a gallon of water) to soften it; this will prevent foam above the fat.

10. If there are several readings to take, always set the samples in hot water (120 to 140 degrees F.) extending to the top of the fat before reading.

11. It is well to use a pair of dividers or compasses for measuring the column of fat. The points of the dividers should be placed at the upper and lower limits of the fat column; then, if one point be placed at the zero mark of the scale, the division at which the other point touches will show the percentage of fat in the sample tested.

12. Burnt or cloudy readings may be caused by:

(1). The use of too much or too strong acid.

(2). Allowing the acid to fall directly on the milk.

(3). Having the milk or acid at too high a temperature—the higher the temperature the less acid is required.

(4). Allowing a sample to stand too long after adding the acid, before mixing the milk and acid.

13. Light-colored readings and floating particles of curds are usually due to:

(1). The use of too little or too weak acid.

(2). Having the milk or acid at too low a temperature—the lower the temperature of either, the more acid is required.

(3). Insufficient shaking of the bottles to unite the milk and acid thoroughly.

(4). Lack of required speed or time in whirling.

14. A convenient method of testing the accuracy of the graduation is to test the same milk in the different test bottles and compare the readings. A bottle that differs by more than .2 (2-10) in its reading from the rest should be discarded. As the capacity of that part of the neck over which the scale extends should be 2 c. c., the accuracy of the scale may be tested by filling the bottle to the bottom of the scale with water at the temperature of the room, and then adding 2 c. c. of water at the same temperature by means a 2 c. c. pipette or a finely-graduated burette.

15. Care and exactness in every detail are absolutely essential requisites for reliable results in milk-testing. There is more to learn in care than in principle. Carelessness on the part of the operator has frequently thrown suspicion on the Babcock test.

Wants to Make Homemade Cheese.

A. G. A., a Wetaskiwin, Alta., reader, asks for information on making homemade cheese. In response to his request we publish the method outlined by Prof. Dean, of the Ontario Agricultural College. The whole operation may be carried out in about four hours, or in a forenoon, when the proper utensils, a list of which follows, are used:

1. A clean vat, tank, tub, or can of some kind, to hold the milk. A small vat, holding from 200 to 600 pounds, according to the size of the herd, is most convenient; and where there is a small steam boiler on the farm, the milk and curd may be most conveniently heated in a vat. However, a clean vessel of any kind may be used for the purpose. A clean wash-boiler is satisfactory.

2. Some method of cutting the curd. A regular curd knife or knives is best; but failing this, a long butcher-knife may be used for cutting the curd into small particles.

3. A hoop, or hoops, is needed to hold the curd. A convenient size is one from seven to eight inches in diameter, and eight to ten inches high, made of heavy tin or steel, with a perforated bottom. It must have a wooden follower which will fit neatly on the inside, and two handles on the outside. A hoop of this kind, made of heavy tin, should not cost more than a dollar.

4. A tin bandager, for putting the cotton bandage on the cheese before filling the curd into the hoop, saves time and patience, but is not essential, as the bandage may be put on after the curd is pressed into shape.

5. Some form of press is needed. A press made of a piece of scantling for a lever, having one end fastened under a partition, and the other end weighted with iron or a pail of water, has been used with very satisfactory results. The hoop containing the curd is placed on a smooth board, and then the lever is put squarely on the follower, and the weight is put on the farther end of the lever.

In addition to the utensils named, it will be necessary to have on hand some rennet, preferably a commercial extract, salt, and cheese-cotton