

Quantity of Milk to Pound of Butter.

A writer in a dairy exchange gives the following practical explanation of the use of the Babcock in ascertaining the number of pounds of milk required to make a pound of butter, figuring from the fat per cent. of the milk. The Babcock tester is a definite and sure guide, and the dairyman should know the quality of milk given by every cow in his herd. I insert a table below, which, with accompanying explanations, will enable a person to determine approximately the butter content of milk:

Butter-fat, per cent.	Lbs. milk to lbs. butter.	Qts. milk to lbs. butter.
3.0	28.56	13.28
3.1	27.65	12.86
3.2	26.78	12.45
3.4	25.20	11.72
3.6	23.80	11.07
3.8	22.25	10.48
4.0	21.42	9.96
4.2	20.40	9.49
4.4	19.47	9.05
4.6	18.63	8.66
4.8	17.85	8.30
5.0	17.14	7.97
5.2	16.48	7.66
5.4	15.87	7.38
6.0	14.28	6.64

I insert this table not so much that any dairyman should make this his permanent guide as to get him interested in the matter of determining the quality of milk, knowing that when his thoughts are once aroused upon the point he will not rest content until he has a Babcock, and thenceforward, and to his great advantage, will know exactly what every cow in his herd is doing and be most likely to weed out the unprofitable animals and endeavor otherwise to improve his herd, their care and feeding, until he has a dairy herd worthy of the name.

It will be seen by the table that 3 per cent. and 6 per cent. milk are the extremes noted by it; while these are not the extremes as found in milk, yet they are sufficient to illustrate the method of computation I have in mind. Commencing with the first column of figures at the top of the page and reading across, it is found that 3 per cent. milk requires 28.56 pounds, or its equivalent, 13.28 quarts, to make a pound of butter; while at the bottom of the columns of figures it is seen the 6 per cent. milk requires 14.28 pounds of milk, or 6.64 quarts, to make a pound of butter. Now to test one's own milk to ascertain the rate of its butter content, test the cream from the milk of each cow separately. Either weigh or measure the milk and set it to cream, and, when fully creamed, skim it cleanly and let the cream ripen as usual. Then, as the cream will most likely be in too small a quantity to churn it conveniently in an ordinary churn, place it in a glass fruit jar, close down the cover and shake the jar until the butter "comes," then pour out the contents into a milk pan, separate the butter from the buttermilk, wash and "work" the butter as usual and weigh it; then there will be only an easy problem to solve to get the rate of the butter yield of that batch of milk.

The problem will be this: So many ounces of milk (naming them) produced so many ounces of butter (naming them); now, what rate per cent. do the ounces of butter bear to the ounces of milk used in its production? The answer will be the rate per cent. of the butter content of the milk. To learn the quality of the milk of one's cow or cows, is it not worth this little trouble to ascertain? When this is done, perhaps one would be willing to get a Babcock tester and have it on hand to test the milk in a few minutes as soon as drawn. In computing milk by the quart or pounds, it is well to remember that a quart of milk is rated to weigh 2.15 pounds.

Dairying and the Labor Question.

The renewed movement of people during the past couple of years to the West, the industrial activity in the cities and towns, and the unusual amount of building improvements being made upon the farms of Eastern Canada, has lessened greatly the supply of labor for the ordinary occupations of the farm. This, naturally, affects dairy farming, which requires a great deal of close personal work. With abundant pasturage and water, ideal weather for the care of milk, of which there has been an abundant flow, a strong demand at high prices for dairy products, the past season has been exceptionally favorable for this industry. Shortage in labor means adding to the cost of production, but still the outlook for the dairy cow was never more promising. The Canadian dairyman is resourceful, and so long as the business pays well he will contrive to surmount the labor problem. Should it become yet more serious the milking machine may come to the rescue. A good many men are now turning their attention to beef-raising as involving less constant labor, but it not likely to materially lessen the volume of Canadian dairying. A few years ago men went out of the beef cattle business because the margin of profit was too narrow, and to-day there is a swing in the other direction, but in the main we apprehend that the balance between the two industries will be fairly well preserved, the current demand for meat and dairy products being the regulating force.

GARDEN AND ORCHARD.

The Garden in November.

After the garden crops are harvested and stored away for winter, or otherwise disposed of, there still remains much work to be done in the garden. The clearing away of the waste and refuse and the preparation of the soil, in order that an early start can be made the following season, is absolutely necessary, and the protection of bushes, shrubs, young trees and perennial plants, including asparagus and rhubarb, is also a duty that should not be neglected at this season of the year. A few hints and a description of methods found to be the best in my experience I will now state for the benefit of those interested.

The waste tops, leaves and other refuse that will easily rot I rake into small heaps, discarding all sticks, stones and stalks of weed seed, and let them stand for a few days. If a disease has infested the leaves or stalks, such as potato blight for instance, the refuse should be dried and burnt or buried deeply, but in most cases this is not necessary. In one corner of the garden I dump a load or so of sods, as a foundation for the proposed compost. Three loads of refuse are added and well tramped down, a peck of dry lime being sprinkled over the mass to ensure decomposition; then another load of sods or manure, and so on until the pile is finished. In the spring I have usually fifteen or twenty loads of excellent fertilizer, far superior to stable manure, being in a fine condition, and the elements of plant food, by the action of the lime, being in a more available form so that the crops can readily obtain them. This seems like a lot of trouble, but it pays, and when a little chemical fertilizer is used



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A contributor to the "Farmer's Advocate," who for the last three years has been awarded first prize, special first and sweepstakes for the best display of garden produce, and 15 other first prizes this year, at the Halifax Exhibition.

to give the crop a start this compost gives a steady growth till maturity. By this means, not only is a large proportion of the plant food returned to the soil, but humus or organic matter is added, which has the effect of improving the mechanical texture, making the soil capable of holding moisture and in other ways being of great benefit. As soon as the refuse is cleared away, the garden should be deeply dug or plowed, in order that the winter's frosts can act on it, the alternate freezings and thawings breaking up and fining the coarse particles and lumps to a considerable extent, the soil being rendered easier to work in the spring and also much earlier than it otherwise would be.

Fruit bushes and young trees need to be protected in order that they can safely withstand the winter without winter-killing, as they are very liable to do in this locality. A good forkful of strawy manure placed around each bush or tree and covered with a shovelful of ground to keep it in place is about the best protection that can be given, though leaves, spruce boughs and other like materials are excellent, but do not add any fertility. In the case of rhubarb, asparagus, and such perennial bedding plants as phlox and dielytra, the manure had better be applied in a finer condition and then covered with coarser material, cornstalks being most satisfactory. All wounds left from pruning or otherwise on fruit trees should have a little white-lead paint or coal tar applied to them, which will prevent splitting of the bark or other disfigurement caused by frost and cause it to heal readily in the spring. These are the main duties to be fulfilled during the month, and which will result in much good to the soil, the plant, and, consequently, the owner also.

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The San Jose Scale in Summer.

It is important to keep a close watch on infested orchards during summer, and if at any time the scale becomes plentiful to promptly treat such trees as are seriously affected. Kerosene, which was so disastrous in our winter tests, has in the recent experiments proved correspondingly useful as a summer spray, and if in July the fruit is infested a good application of kerosene emulsion will not harm anything, and will so reduce the scale that it is not likely to be plentiful again before the crop matures, which by this means escapes infestation. When the crop has been harvested, treating in many cases is imperative, for trees which are found badly infested at any time in summer or early fall frequently become seriously debilitated and sometimes die before the end of the season. For general work on apples, pears and plums an emulsion made of crude petroleum is very useful indeed. Kerosene emulsion may be safely used on peach and other tender plants the foliage of which does not successfully resist crude oil. In making these emulsions, place the oil in an open barrel, dissolve the soap in rather more than half as much water as oil used, and bring it to a boil; pour the boiling soap and water into the barrel over the oil and churn violently, kerosene five minutes and crude oil a little longer, and then churn more slowly while the quantity is being increased with cold water. Soft water is always best for emulsion. Two and a half pounds of whale oil soap or other good soap are necessary to properly emulsify one gallon of crude petroleum, and one half pound per gallon is enough for kerosene. Kerosene emulsion is frequently used in proportions varying from 1 in 5 to 1 in 10, 1 in 6 being a suitable strength for apple, pear and plum, and 1 in 7 for peach. That is one gallon of kerosene in a total quantity of seven gallons of emulsion. If properly prepared, and thoroughly applied in suitable weather, kerosene emulsion of the above recommended strength will reduce the scale to a narrow limit without injuring even peach foliage. We have used crude petroleum emulsion in proportions ranging from 1 in 5 to 1 in 20, which if properly made will hold, but we find 1 in 10 gives a good strength for general use on foliage. When the foliage is not considered, as toward the end of the season, we dilute less, but 1 in 10 gives a quarter of a pound of soap to the gallon of emulsion and ten per cent. of oil, and this is about all most foliage will withstand. Either kerosene or crude petroleum may be successfully applied with a combination pump. It is remarkable to what an extent the oils prevent reinfestations. Crude oil treatment, however, is the most lasting in this respect. Even if there be considerable breeding after it is applied this will not signify, as the young scales do not fix successfully on either of these oils. Emulsions should always be used in clear weather, particularly kerosene emulsion, which gives much the best results when applied on warm, bright, airy days. A rather coarse nozzle is best for spraying trees in leaf, for the heavy spray from it splashes off the foliage and penetrates to the wood. In emulsions there is always a tendency to separate, which is very slight, however, when the preparation has been carefully attended to, and may be easily overcome by stirring occasionally as the work is in progress. In infested sections it is not desirable to cut away trees or parts of trees that are not already much weakened. Do not spoil your orchards in this way, without first trying what can be accomplished by promptly treating with these emulsions all trees that have recently become badly affected. The emulsions will probably not do more than afford temporary relief, but they will reduce the infestation well below the danger point and carry the trees safely into winter. This must be followed by a thorough general spraying with lime and sulphur in the winter or spring, which may be expected to work an almost perfect cure. In our experiments, the results from this latter treatment, after standing all summer, are very much better than we even ventured to hope for; in fact, almost complete. Some trees on which it is now difficult to find live scale were, before treatment, heavily incrustated. Those scales remaining alive are exposed, and if the treatment be continued for a year or two it seems probable that this pest may be exterminated in orchards that are well cared for. Lime and sulphur treatment has been considered impracticable because of the difficulty of preparing by ordinary methods of cooking. We hope to show that by utilizing steam from threshing engines for this purpose the finished material can be furnished in any quantity required.

G. E. FISHER, Inspector.

Halton Co., Ont.

A Grand Bible.

I wish to thank you for the grand premium, which I received in good shape, and was much pleased with so beautiful a Bible. Wishing the "Advocate" success.
LOREE MILLER.
Lincoln Co., Ont., Oct. 24th, 1902.