

affixing the names of the individuals in case we wish to refer to them again:

Name	Lbs. milk	Value of milk	Value of calf	Maintenance	Net profit
Brindle	10,897	157.12	\$4.00	\$66.82	\$94.30
Cora	10,644	151.13	7.00	61.48	96.65
Daisy	10,334	147.52	8.00	62.06	93.46
Kate	9,626	137.80	5.00	55.54	86.26
Black	9,560	138.34	5.00	55.84	87.50
Flora	8,907	125.95	5.00	55.66	75.29
Spot	8,792	133.43	—	60.28	73.15
Star	8,208	125.57	4.00	59.14	70.43
Olive	7,849	97.76	7.00	58.06	46.70

These estimates may be attacked in one particular; they do not debit the cows with cost of housing. It is estimated that \$800 would cover the cost of housing this number of stock. Ten per cent. for interest and depreciation would be a fair charge, and divided among the herd would amount to approximately \$9.00 each.

The male calves were sold usually at \$4.00 per head, while the heifer calves were retained and their dams credited with \$5.00, the estimated value of the calf.

THE STORY OF THE BRINDLE COW.

Brindle has no recorded ancestry dating from the time of feudalism, neither can it be ascertained from her past that her progenitors were of English, Scotch or Dutch extraction. Her appearance, however, would lead one to believe that somewhere in the past one of her remote parents had been an inhabitant of Jersey Island while the other may have claimed relationship with some of the Bates strain of Shorthorns. That part of her history is immaterial and unimportant, the fact remains that she, like Canadian humans, prefers to establish a record personally rather than attach herself to an ancient family and draw glory from it, a glory that is fast losing value in this country.

Brindle's record is a modest one, but it is nevertheless phenomenal. She was purchased for \$72.00, and after giving 10,897 pounds of milk in one year and consuming \$66.82 worth of fodder she left a net profit of \$94.30 to her owner. Few cows in pure-bred herds exceed this in net results, and when one considers that she returned over 100 per cent. on the capital invested in her there are still hopes that a herd of cows wisely selected may do much to make dairy farming a profitable enterprise. In Prof. Reynolds's mind we place cost of maintenance too low when forty to fifty dollars is charged up to a cow that is in any way a credit to the herd. In the case of this particular cow the cost far exceeds the paltry forty dollars, but the proceeds are correspondingly high. With a heavy flow of milk her test was 4.2% butter fat, showing production in every respect. This is only a grade cow, but ordinarily she would be allowed to mingle with less profitable individuals and her true worth would not be recognized.

LACK OF PERSISTENCY IN MILKING.

How different is the record of the last-mentioned cow in the chart. This cow, Olive, is a good milker when fresh, in fact she is the heaviest producer in the herd for a time, and during the first two weeks of her lactation period she gave over sixty pounds of milk per day. Her besetting sin is lack of persistency, and many a cow betrays her owner after making a remarkable showing at first. Her yearly production was only 7,849 pounds of milk testing 3.3 per cent. fat. This is not a disgraceful performance, but it does not meet the requirements of the herd standard, nor does it qualify her to companion company with her more profitable companions. Her net profits amounted to \$46.70, not half that netted by the first three individuals on the chart. This cow has given as much as 425 pounds of milk in one week, but her stable mate, Kate, has never given more than 296 pounds per week; yet she has been so persistent that her aggregate results are far superior to the cow so spasmodic in her production. For the week ending June 14th, 1913, she gave 296 pounds of milk, and in the week ending May 23rd, 1914, after milking one year she produced 219 pounds. This is a good example of persistency in milking.

THREE FACTORS IN DAIRYING.

The three important factors upon which Prof. Reynolds has laid stress in establishing this herd are: SELECTION, FEEDING AND MARKETING.

Regarding selection the record of the herd shows what may be done. Three cows are giving over 10,000 pounds of milk per year; two are giving over 9,500 pounds; two are giving over 8,500 pounds; one is giving over 8,000 pounds, and one over 7,000 pounds. These are not extremely high records, but for a grade herd they are not common. The average was 9,380

pounds of milk, the total sales amounted to \$1,259.62, the cost of maintenance was \$535.88, leaving a net profit of \$723.74. During the last two years Prof. Reynolds has sold eight out of eighteen cows because they did not come up to the requirements of the herd; and he has tested their efficiency with the scales, the only indisputable means of judging.

Feeding is also important, for upon it depends the milking qualities of the cow. Not only should judgment govern feeding during the lactation period, but when the cow is dry much can be done to prolong her next period and lengthen the time of profitable flow. The example of the cow designated, Kate, is an instance where judicious feeding during the dry state had its beneficial effect. In quest of such results the cows receive grain while they are on grass in order to maintain the flow or build up the animal so the next lactation period will be long and productive.

"Marketing," says Prof. Reynolds, "is largely a question of opportunity," and in his particular case the city of Guelph and its institutions are the outlet for the product. Every locality presents an opportunity, but the special trades are, of course, more remunerative. Large cities now draw upon the remote counties for their milk supply, and though slightly handicapped through distance the results of the trade are largely satisfactory. This with the various channels into which the product of the dairy may be diverted affords many opportunities for the one who may be looking for a scheme of marketing that will advantageously work into the systems followed on the farm.

FEEDING A PIVOTAL POINT.

With a herd that has been picked up here and there throughout the country good feeding principles must be put into practice or the cows will not show what is in them, neither will the profits be commensurate with the cost of feed and labor. This herd has not been supplied with elaborate rations, but they have been combined so good results have been obtained as the chart shows. To a cow giving forty pounds of milk, forty pounds of silage and twenty pounds of roots, chiefly mangels, are given every day, and concentrates consisting of distillers' grain and oat chop are also fed. The principle followed has been to give one pound of grain for every 3½ pounds of milk produced daily. This is the ratio between feed and production, which has worked out to good advantage. Prof. Reynolds prefers to sell the oats if necessary in order to buy distillers' grain, for they have a higher percentage of protein, and oats usually bring more than \$22.00 per ton, for which the distillers' grain are purchased.

During the winter feeding the cost of maintenance for one day amounted to about 28 cents during the season of 1913 and 1914. Silage was estimated at 6 cents, roots 4 cents, grain 13 cents, and hay 5 cents. Hay is fed only at noon, and it is Prof. Reynolds's opinion that if one did not have to frequent the stables that feeding twice per day would be as wise as feeding three times, but when one goes into the stable cows look for something, and the results are better when they get it. The cows are allowed to freshen in the fall, and the greatest flow of milk is given while labor is slackest on the farm and when the market affords the very highest price. This is an influencing factor on the profits from a dairy herd.

HORTICULTURE.

Will it Pay to Thin?

When looking over a number of orchards a short time ago we noticed that they were loading very, very heavily and unless the drop has been greater than growers have reported to us there is a danger that some apple orchards may be badly over-loaded this fall and as a consequence the fruit may be rather small. Where this state of affairs exists it would, no doubt, pay the growers, more especially with young trees, to go over each and every tree and thin the fruit systematically.

Thinning almost invariably secures to the grower a more uniform and better-colored lot of fruit as well as larger fruit. Besides this the tree does not have its vitality so lowered by over-cropping. Experienced growers have often reported the loss of trees due to over-cropping, and it is a matter of common knowledge that where an orchard or even a single tree bears too heavily one season that this orchard or tree is almost invariably very poorly loaded the following year. In fact, the following crop is quite frequently a complete failure. It is of advantage then we think to thin in order to get the trees bearing regularly every year, because where they are allowed to over-load this brings the price of apples down considerably for that particular fall and the following year the price is very often high, due to scarcity of fruit, thus the grower is deprived of considerable of the profit which he would otherwise get.

In thinning the first work is to cull out all imperfect specimens of apples, particularly diseased or insect-infected fruits. After this all branches or clusters should be thinned out to about one-half what seems to be a good set. By the time the fruit is ripe trees thinned in this manner will show a thick enough load of fruit.

By removing fruit in the summer, of course, the work of picking in the fall is reduced considerably. Thinned fruit usually matures earlier than where the entire crop, if it is too heavy, is allowed to ripen on the trees. This is of no mean consideration, as properly-matured fruit is worth more to the buyer than fruit picked too green.

Where trees are heavily loaded, growers will do well to take stock of the thinning process and try it out. Those who have given it a fair test claim that it is under almost all conditions of overloading extremely profitable.

Have You Sown the Cover Crop?

Those fruit growers who have been neglecting their orchards under the clean-cultivation system up to the present time, if they have not already done so, are contemplating the sowing of cover crops. The past year or two we have not heard so much about cover crops as formerly. An increase in insect pests and the trouble which they have given growers has served to turn almost all the attention of some growers to spraying and pruning in order to keep their trees clean. However, next to spraying, clean cultivation and cover crops are possibly the most important items in good orcharding. Last winter a great deal of injury was done throughout the country by severe frosts, some of which, no doubt, could very well have been avoided had cover crops been grown in the orchards—at least cover crops serve to protect orchards during severe frosts. The growth which they make provides a protection for the roots of the trees during the winter and the plant food which they use up in making their growth is taken from the trees thus checking the rapid growth of the latter and hardening them up for winter. Besides this soluble fertility in the soil is taken up by this cover crop and held thus preventing leaching or washing away and so remains on the land for the benefit of the trees the following year. Where leguminous crops are used they also store nitrogen for the use of the trees the next year. Again, land which has been sown to cover crops usually dries out more quickly in the spring and is ready to work earlier in the season giving an advantage to the trees growing thereon.

Circumstances alter the time at which these crops should be sown but about the middle of July is the general practice. However, some sow the last of June and others toward the end of July. There are a great many varieties of crops from which to choose but preference, as a rule, is given to crops which survive the winter and especially to leguminous crops. Hairy vetch, alfalfa, red and mammoth clover, rape, rye, oats and crimson clover are among the best and are mentioned in order of merit. Many successful growers now use a mixture of rye and hairy vetch. This is quite commonly noticed in the orchards in Norfolk county. Where hairy vetch is used it is very important that it be ploughed in, in the spring and not allowed to grow or it will injure the trees. Red clover is one of the best cover crops that has yet been tried. It makes a good growth and winters well on soil which has good natural drainage or is under-drained and no orchard should be grown on any other but this class of soil. The biggest drawback to rape is that it remains wet during the greater part of the day during picking time and is, therefore, a great inconvenience in fruiting orchards. Rye is quite a favorite with many but it is better with hairy vetch added. It is not a nitrogen-gatherer and does not loosen the soil to the same extent as does alfalfa, red clover or vetch. Oats are sometimes used to good advantage. It does not matter so much what the cover crop is as long as one is put in and if the orchard has been kept well cultivated up to this season good growth should have been made and we would hasten now to get the cover crop sown, check growth, harden up the trees and conserve soil fertility.

POULTRY.

Wyandottes Leading.

At the end of the thirty-second week of the third International Egg-laying Competition, Tom Barron's pen of White Wyandottes was leading with 739 eggs. The same owner's pen of White Leghorns was second with 734. This Preston, England, breeder is to be congratulated on the showing made by his hens. A pair of Single-comb Rhode Island Reds were third with 729 eggs for the Pennsylvania Poultry Farm.