MAY 6. 1909

THE FARMER'S ADVOCATE.

Follow up Process in Cow-testing. By combining the two-that is, testing and selecting cows, and selecting a dairy sire-and con-

It is, we understand, the intention of the Dairy Commissioner's Branch to supplement cow-testing work this season by obtaining information as to the cost of feeding cows so tested. This will be carried on in a small way at first, in connection with one or two cow-testing associations.

Valuable as has been the work of the cowtesting associations in showing the difference in production in individual cows, it has lacked completeness in not supplying definite information as to the cost of feeding cows. Even if carried on in a small way, the information to be obtained by the Department in this connection should prove of very great value to dairymen.

It is not always the cow that gives the largest amount of milk or fat that is the most profitable We have some examples of this in the record of the dairy herd at the Ontario Agricultural College, in 1908. The second cow in point of yield gave a larger profit over cost of feed than the cow which gave the largest amount of milk and fat during the year. The six-year-old Holstein cow Molly De Kol, headed the herd in point of yield. In 298 days she gave 12,963 pounds of milk, and 429.06 pounds of fat, which, valued at 25 cents per pound, gave a gross return of \$107.26. She cost to feed \$54.48, thus showing a net profit of \$52.78. The second cow, a four-year-old Holstein, gave 11,458 pounds of milk, and 394.92 pounds of fat in 337 days, valued at \$98.72; but she only cost \$45.41 to feed thus showing a net profit of \$53.31. The same thing is found in the records made by the Ayrshires. The third cow in point of yield showed a profit of \$41.18, while the one giving the largest quantity of milk and fat showed a profit over cost of feed of only \$39.13, or over \$2 less than the cow giving the smallest yield.

This does not prove that the cow giving the largest yield of milk and fat is never the most profitable cow. It merely shows that, in accurately estimating the value of a cow, her cost of feeding, as well as her yield, must be taken into account. However, until such times as they are able to estimate accurately the cost of feeding each individual cow in their herds, dairymen had better cling to the one giving the largest yield of milk or fat. They will not go very far astray in selecting on this basis, though a cow's real value can only be accurately gauged by finding out what it cost to produce her product. It will, therefore, pay dairymen who are testing their cows, to keep track of the cost of feeding, as well as the amount of product each one gives.

Just on this question of feeding, the cowtesting work carried on in Michigan, for example, is ahead of the work here. Not so many asso ciations have been formed, nor has the movement spread as rapidly as in Canada, but it has been more thorough, and covers the cost of feeding, as well as the amount of product. And what is more, the whole cost of the work is borne by the cow-owner. An association is formed, and a competent man engaged to do the work of testing, and compiling the records as to yield and This individual looks after more cost of feeding. than one association, thus spreading out the cost. Last year, the cost to members of associations for this work averaged \$1.05 to \$1.07 por year per member Where a dairyman pays for the cost of testing his cows, he enters into the work with more enthusiasm, and profits more by it, than is the case where the Government foots the bill. In this, as well as in other things, Canadians are rather given to looking to the Government to do for them what they should be willing to do for themselves. There are some other features of the cow-test ing work in Michigan that might be copied with advantage here. The State Board of Agriculture sends a competent man to organize associations. He visits a locality, and talks up the value of testing cows. When he has secured forty dairymen who are willing to join an association, and abide by its rules for not less than six years, the organization is completed. In addition to testing their cows and keeping track of the cost of teed, the members agree to purchase three purebred dairy bulls for use in their herds, the breed of the animals being left largely for the members to select. The members are divided into three groups : the members in each group have the use of one bull for two years. After that a change is made, and the bulls redistributed. At the end of the second two-year period another change is made, so that at the end of six years every member has had the use of three good dairy bulls on his herd, and not one of them for a longer period The advantages of this plan are many. Each member has the use of a good buil at a lower cost than if he bought one himself or patronized some breeder in the district. As soon as a memher has tested his cows, and found out which are the more profitable ones, he can begin at once to build up his herd from this foundation. If a suitable dairy sire were not at hand, this building-up process might be postponed, or carried on in such a way as to make it largely valueless.

By combining the two-that is, testing and selecting cows, and selecting a dairy sire-and continuing the work for six years, the improvement in the dairy herds should be so apparent at the end of the period that members would continue the work of their own accord afterwards.

759

The finding out which are the profitable and which are the unprofitable cows is valuable, but if this is not followed up by systematic and intelligent effort in the building up of a dairy herd, the dairy man comes far short of getting all the good out of cow-testing there is in it. The experience in cow-testing work in Canada, so far, shows that many dairymen discontinue the work at the end of one season. It should be a continuous process, selecting and building up, until maximum production-in a dairy herd is reached. W. J. W.

Collect Cream by Motor Car.

Editor " The Farmer's Advocate " :

The effect on the price of creamery butter by the introduction of hand or power cream separators on the farm, can be summed up as follows:

I doubt if farm separators have influenced the price of creamery butter to any extent directly. Indirectly, they have doubtless caused a lower price to be accepted for the output of creameries, chiefly for two reasons : First, because the creamerymen have accepted, and continue to accept ream (raw material) which no amount of skill can manufacture into a first-class finished product (butter). In the second place, the farmers have supplied, as a rule, just as poor a quality of cream as the creamerymen will accept. (I am somewhat in doubt which of these should be placed first. It is not easy to say which is cause and which is effect, but I have placed the onus on the creameryman, as he has the power to cause the necessary improvement.)

It is difficult to say which has had the greater influence on prices received for creamery butter the manufacture of butter in the farm dairy, or the sending of the cream to the creameries. As "dairy" butter is usually in a class by itself, and scarcely comes into competition with finest "creamery," except in special cases, if there is any difference in effect, I should judge that the sending of cream to the creameries has been the more potent factor in influencing prices of creamery butter.

As to the relative merits of manufacturing butter in creameries from whole milk, as compared with making butter from cream collected in the ordinary way, there is no doubt about which is the better in its effect on the quality of butter made. As proof of this, we may cite the case of Denmark, where the butter is made in creameries almost exclusively from whole milk, and where they found that the gathering of cream had such a detrimental effect on the quality of their butter that. in the few cases where they tried it, they dropped it "quick." And we may further cite the experience of every country which has changed from whole-milk to cream-gathering-e.g., Australia, the United States, and Canada. In every case it has meant a marked deterioration in the quality of the butter. We may also call attention to the fact that, at the National Exhibition of Canada, the best prizes for butter have been, for the most part, awarded to Quebec creameries, I understand, the whole-milk system is fol

for the lightning. In the case of a rod, the points are not distributed along it as on barbed wire, but are attached as uprights on the roof The uprights should not be more than twice their own length apart, as over this distance they have no effect on the space between. The main rod can be attached directly to the building, and should be continuous, making the curves in gentle curves, and ending in moist earth, the object being that moist earth can distribute the shock more readily than if it is dry. Statistics gathered by the Department of Physics, at Guelph, show that, in eight years, out of 511 buildings struck with lightning only eleven bore rods, and of these eleven more than fifty per cent, were in need of By this it can be seen that it is an adrepair. vantage to use rods on the buildings, and by many of the farmers who do use them, they are held as a second insurance policy.

features of a rod, as it decreases the attraction

Dundas Co., Ont. A READER.

THE DAIRY

Experiments with Pasteurized Whey.

Interesting conclusions were reached by W. M. Waddell, who carried on a series of experiments at Ontario Agricultural College last winter, with the object of finding out what temperatures would be the most suitable for the pasteurization of whey. Mr. Waddell points out that the experiments were not extensive enough to warrant definite conclusions being drawn in regard to whey pasteurization for the entire senson. The work was done during February and March, the whey used being from small amounts of milk, and the amount of whey pasteurized for each experiment was therefore limited. He does, however, express satisfaction with the experiments for winter whey, under laboratory conditions.

In order to make a definite statement re the pasteurization of whey for the whole season, it would be essential to conduct experiments during the whole cheesemaking season, so that deductions could be made from the various conditions which are only known to manufacturers in handling large quantities of milk. The following deductions are, however, worth studying :

1. That pasteurization of whey is beneficial. (a) The fat is held in suspension; (b) a gentle agitation makes the mass uniform; (c) when raw, unpasteurized whey is plated, there is a marked germ life shown even in .1 C. C. of a 1-100 dilution; (d) in 100 pounds of whey there are possibilities for untold development of germ-life, if pasteurization is not employed.

2. (a) In heating to 120 degrees, and allowing to cool, there are quite a few organisms uninjured; (b) in heating to 140 degrees, and allowing to cool, there are some organisms uninjured; (c) in heating to 149 degrees, and allowing to cool, there are some organisms uninjured; (d) in heating to 155 degrees, and allowing to cool, there are a few organisms uninjured; (e) in heating to 156 degrees, and allowing to cool, only a few organisms uninjured; (f) in heating

up enty

18

and

are

that

ange

hare

aver-

one

ilies.

ions.

out

little

that

s in

by

affin-

point

cloud

n the

s of te in

will

d of

trac-

milar

the

the

e of

alti-

rans-

par-

luced,

as it

This

lough

n the

sitive

h of

h of

y im-

nough

large

drops

ck of

gained

harge

in

19.

cloud which ecting or by object when

speaks on. It drawe one irectly being ng is of the ger at place numne of lighthas a of no s more

word place. to proprevent eur. If nilding. te. One should te elecmetals to f the tribute sential to 159 degrees, and allowing to cool, only a very few organisms are uninjured; (g) in heating to 162 degrees, and allowing to cool, it is very rarely any germ life is left in ordinary whey : (h) in heating to 169 degrees, and allowing to cool, life of organisms is extinct, but slime occasions trouble at this high temperature, owing to the coagulation of the albumen.

3. (a) In heating to 110 degrees, and holding the whey at such a temperature that the whey will be 110 degrees in 24 hours, there is no growth of germ life in 120 hours, either on whey peptone carbonate gelatin or agar media; (b) in heating to 150 degrees, and holding at such a temperature that the whey is 110 degrees in 24 hours, there is no growth in 120 hours on media plates; (c) the same holds good with whey heated to 155 degrees, and held at such temperature that the whey will be at 110 degrees in 24 hours.

4. These experiments were performed with when taken from milk delivered to the cheese de partment of the O. A. C. If milk is normal, good results can be obtained by pasteurizing the whey to 150 to 155 degrees, and having the temperature register 110 degrees in 24 hours.

5 If some resistant spores existed in the her with which these experiments were conured, they must have been killed. If they had even present, and survived the heating, they find have developed inside of 120 hours. Evient, no very resistant spores were present.

cheese factories are being creeled in West stario, at Shedden, West Lorne, Arkona, Son Komoka and Millbank. All have excel is, and fine buildings will be equipped with appliances, and along strictly sanitary lowed.

Where the population is small, and roads are not good, creamerymen have been obliged to adopt the cream-gathering system, in order to reduce expenses, but we have yet to learn how to make a fine quality of butter under this system. "Finest" butter is possible, but not probable at least, not in the near future.

From the foregoing, it will be observed that our judgment is that hand separators have been indirectly a cause of depreciating prices for creamery butter, and, in the "language of the street," it is "up to us" to suggest a remedy, or remedies. We offer the following :

1. The cream ought to be collected from the iarm at least three times per week-daily, if possible. To do this, we need better roads and cheaper motive power than the horse. The introduction of gasoline or electric power for hauling cream is a step in the direction of reducing the cost of collecting cream. Why should these cheap methods of moving loads be monopolized by the idle rich? There is need of some exact experiments along this line to find out the best way to utilize this cheap power for collecting the raw material in the making of fine butter. If one of these machines could cover 50 to 100 miles in a day, at a low cost, it would mean cutting the cost of hauling in two, and the getting of a fine quality of raw material for making good butter, which is practically impossible under present conditions. The value of aeroplanes (airships) in creamery work is another factor to be reckoned with in the future. These would eliminate the road problem, and cut distances in two. It is possible that Darius Green and his flying machine " may be valuable aids in solving the problem of making

2 The patrons supplying cream ought to

FUJI MICRO SAFETY