

do not spend too much time at fall shows, to the neglect of fall work.

10. Take some part in the affairs of your township, county, and province, and of the Dominion also. Be not a blind follower of any party. Do your own thinking in such matters; and, if need be, sacrifice a little, to put the best men into positions of trust and responsibility and to keep professional demagogues from ruling thy country.

11. Keep out of debt. Sensible people respect the young man who wears rusty, threadbare clothes and drives in an old buggy or democrat till he gets the means to buy something better. Such a young man has a chance of success, while the one that borrows money to purchase clothes, carriages, implements, or anything else (unless in rare and exceptional circumstances) is almost sure to become a hewer of wood and drawer of water for some money-lender or loan society. Whatever you do, live within your means and pay as you go. Have nothing to do with mortgages or promissory notes. Get some interest if you can, but do not pay any.

I shall not speak to you about religion and sound morality (strict truthfulness, scrupulous honesty, &c.) as the true foundation of success on the farm as elsewhere. I assume that this important fact is impressed upon your minds from week to week.

Pooling Milk.

UNTIL within the last two or three years, milk delivered at the cheese factories was paid for according to weight alone. The quality of milk was not considered. One hundred pounds of a three per cent. milk was considered worth as much money as one hundred pounds of milk of any other percentage of fat. Now this method of paying for milk is not fair unless the cheese-producing powers of equal quantities of milk of different percentages of fat are equal. For example, will one hundred pounds of one milk produce as much cheese as one hundred pounds of another milk richer by 8% fat? The poorer milk will not yield as much cheese as the richer milk. In our factory tests this season 440.9 lbs. of milk, made up of 22194.5 lbs. of practically 3.2% milk, and 21894.5 lbs. of 4% milk, yielded 4217.75 lbs. of cheese. Assuming that equal weights of these two lots of milk yield equal weights of cheese, the 3.2% milk would be credited with 2123.2 lbs. of cheese, and the 4% milk would be credited with 2094.5 lbs. of cheese, while the former actually yielded 1983 lbs., and the latter 2234.75 lbs. By assuming that equal weights of the 3.2 and 4% milk yield equal weights of cheese, the medium milk is credited with 140 lbs. more cheese than it actually made. What does this mean? It means that Patron A, sending 300 lbs. of 3.2% milk per day, receives, every three months, at least 140 pounds of cheese or \$11.20 belonging to patron B, who, during the same time, sends 300 pounds of 4% milk per day. This method of paying for milk delivered in cheese factories is glaringly unfair. It should not be practiced in any factory.

By the use of the Babcock tester, it is practical to determine, in factories, the percentage of fat in milk. Composite samples of the patrons' milk may be tested by the Babcock tester, once a month.

Having thus a ready and practicable means of determining the percentage of fat in each patron's milk, by multiplying the percentage of fat in each patron's milk by the number of hundred pounds of milk delivered by each patron respectively, the total number of pounds of fat delivered by each patron, are known. In many cheese factories, both in Canada and the United States, butter fat has been introduced as a better and fairer method of paying for milk than the old method, that is by pooling the milk. This is a step in the right direction. It recognizes the difference in the cheese-producing power of poor, medium and rich milk. But, while much better than the old method, it makes too great a distinction between what may be called poor and rich milk. Very extensive tests, jointly conducted by the chemical and dairy departments, show, practically, .3 of a pound of cured cheese less per pound of fat made from a 4%, than from a 3.2% milk. The greater the difference in the percentages of fat of different lots of milk, the greater is the difference in the yield of cheese per pound of fat. It is claimed by some that the cheese from richer milk will sell for more than the cheese from medium milk, which increase in price equalizes matters, leaving fat a fair and satisfactory basis of paying for milk in cheese factories. In my opinion, based upon many tests, the fat basis alone puts too great a premium upon richer milk.

If Casein in milk increased as fat, there would not be this fault in the fat alone as a basis in paying for milk in cheese factories. Casein in milk, which, like fat of milk, enters into the cheese, influences the yield of cheese. Now while the quality as well as the weight of the milk must be considered in estimating its cheese-producing power, fat alone does not determine its quality for cheese production.

Take for illustration, the ratio of cheese to the fat and the casein in milk. In the former, the average of many tests shows 2.784 lbs. of cheese per pound of fat in 3.2% milk, and 2.498 lbs. of cheese per pound of fat in 4% milk. But in the latter, the same averages show 1.602 lbs. of cheese per pound of fat and casein together in 3.2% milk, and 1.511 lbs. of cheese per pound of fat and casein together in 4% milk. To make the fat basis alone practicable, the cheese from the richer milk would need to command a considerably higher price. If it cannot be shown that the increased value of cheese from medium milk, compensates for the increased yield of cheese per pound of fat in medium milk over yield of cheese per pound of fat in richer milk, then the fat basis, although better and fairer than the pooling system, is not the best and fairest practicable method of paying for milk in cheese factories.

Instead of casein in milk varying as fat, casein is fairly constant. It does not always, in individual samples of milk increase, were slightly, when fat increases, and vice versa. Sometimes an increase of fat is accompanied by a decrease of casein and vice versa. But averages show that the increase or decrease of fat. This fat naturally possible to calculate the casein in several lots of milk of which the average percentage of fat is known. This calculation is simply made by the use of a sliding-scale representing the casein in milk of different percentages of fat. This scale allows 2.3% casein in milk below 5% fat, 2.4 in milk of 5%, and under 4%, 2.5 in milk of 4%, and under 5%, 2.6 in milk of 5%, and under 6%. The use of this "fat and casein" method recognises the true cheese-producing power of milk and the quality of cheese.

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