

Weekly or Monthly Tests?

In factories where the Babcock Test has been used in conjunction with the scales to apportion the proceeds to the patrons, the more general plan has been to take a small sample of milk each day. A small jar is provided for each patron, and into these the samples are put daily along with a little preservative to keep the whole sweet. At the end of the week, after careful mixing, a "composite" sample is taken for the test. At the Ingersoll Dairy Convention Prof. Dean, of the Ontario Agricultural College, reported having been successful in keeping samples for a month and proposed monthly tests. It would involve less labor and expense, but we would caution makers, especially those adopting the test for the first time, to hasten slowly. Try weekly tests first, then, if everything works satisfactorily, perhaps fortnightly, or even still longer. With a monthly test it would be a serious matter if a sample were lost through the jar breaking or the milk being spilled in handling, etc. Should that happen with a weekly test the results of the tests the weeks immediately before and after would afford a pretty fair idea of the quality of the milk for the intervening time, but in a monthly test the guess might easily be very far astray. This is too serious a matter for the patron to admit of any guess work. In the next place, while the Babcock will not show more fat than the milk contains, in various ways, such as by using weak acid, water not sufficiently hot, insufficient whirling, etc., less might be shown in the test tube, and any error of that sort would be against the patron always. Even a fraction of a per cent. less fat for a whole month would mean a very considerable sum of money out of the pocket of the patron. In adopting any new scheme it is wise to be on the safe side. Let makers and factory-men by practical experience make themselves sure of each step before taking another.

Practical Experience with the Babcock Tester.

In our last issue we published the following series of questions to factories regarding the actual working (no fine spun theories) of the Babcock Test, and now we submit the first batch of replies. They are practical, to the point, and will be helpful to others. We are obliged to the writers for their promptness in writing and the care taken. Where fairly tried the Test is giving good satisfaction. One thing is evident, however, no one should undertake to run a factory by the new system without first (either at the dairy school or with some competent man) learning thoroughly how to handle the Tester and to explain all the "ins and outs" of the system to any patron who may be doubtful or in the dark on the subject.

Mr. Bell's replies to question 4 are very explicit.

QUESTIONS.

1. Do you find the test an improvement on the "pooling" system, and if so, for what reason?
2. Will you continue it this season, and if not, for what reason?
3. What method do you follow in taking and preserving samples of milk?
4. How often do you test, and what points do you deem needful of special care in making the tests?
5. By whom is the expense borne, and what would you say is a fair estimate of the expenses per patron for materials, extra labor, etc.
6. Do you prefer having the maker do the testing, or would you favor one man doing the testing for a group of factories?

A. T. BELL, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

1. We find the test an improvement, the milk arrives in better condition at the factory for cheese, less gas, etc. Also, it relieves us of all suspicion as to patrons tampering with their milk.
2. We are going to continue it this season.
3. We use what is known as the composite test, taking sample of milk from weighing can immediately after being dumped in (1 oz.), placing in pint jar, using a little Bicromate Potash for preserving.
4. We test once a week, and we deem needful of special care the following:— Shake jars but very little when adding milk. Place jars in hot water just a little before making the test, to loosen cream from sides of jar. Add acid to milk, carefully letting it run down side of test bottle, mix acid and milk thoroughly before placing in machine; give machine the required number of revolutions; add the water twice, and when the whirling is completed place bottles in hot water bath, and read percentages immediately on taking out of bath. [Is not special care needed also in reading the percentage off the graduated neck of the Test bottle?—Ed.]
5. Expense is borne by the patrons, and a fair estimate would be from 75c. to \$1 per patron.
6. I would favor one man doing the testing for a group of factories.

W.M. DICKSON, SALESMAN, ELMA CHEESE CO., ATWOOD.

It is with pleasure that I will try to answer the questions that you desire. In the first place, allow me to say that the Elma Company was the first in Western Ontario to pay according to the Babcock Test. We have run on that system for the past two seasons, and we are going to continue the same during the ensuing season.

1. We consider the test quite an improvement on the old system. The milk comes in better condition. Then it has been proved beyond a doubt that rich milk makes more cheese, consequently under the old plan it is clear the man who sends the richest milk is robbed. The new system does away with all persecutions and heartburnings, which I think is a very strong reason in its favor. Might state others, but I think these will do at present.

2. We will continue paying by the test during the coming season.

3 and 4. As soon as each patron's milk is dumped into the weigh can, a small cup full is taken every morning and placed in a covered glass jar and is tested once each week. We generally test on Saturdays. The greatest care must be exercised in making the test, so as to give justice to all concerned. I would strongly urge all cheesemakers to learn this testing business thoroughly, as I believe this system will be adopted sooner or later by a large majority of the cheese factories of Ontario.

5. The Company pays for the acid used. Our maker gets at the rate of about two cents per hundred lbs. of cheese for testing. We will average yearly about 170 tons of cheese. We have about 100 patrons. Perhaps it would be fairer for each patron to pay an equal sum.

6. I think if the cheesemaker is up to his business there is nothing to hinder him from doing what is right. But I don't see why a thoroughly competent man could not test a number of factories and give entire satisfaction. It should work admirably.

Now, to say that the new system has given entire satisfaction in our company would not be quite correct, but I do say that I believe it has given general satisfaction. I don't say that the new system is perfect, as I don't claim to be an authority, but I do claim that it is much superior to the old plan.

J. W. SCOTT, SPARTA.

1. Yes; we do find the Test an improvement on the pooling system for the following reasons:—

- (a) It prevents patrons from tampering with the milk to any great extent without immediate detection.
- (b) It makes them take better care of the milk in order to get a good test.
- (c) It makes them more careful in the selection of cows. All this means better cheese and more money to the producer.
- (d) It gives justice to all.

2. I cannot say at present if the Test will be continued this season or not. At our annual meeting only about one-half of the patrons were present, and it was voted out by a majority of one. The principal objection against the Test was, that it was not understood. Some patrons not present at that meeting are anxious that I should call another.

3. We adopt the following method in taking and preserving the samples of milk:—

We have a glass can (a pint fruit can answers the purpose) for each patron, with his name labelled on it. Each morning a sample of the milk is taken immediately after it is dumped in the weighing can. Bicromate of Potash is used to preserve it.

4. During the first three months we tested once a week, during the next two months we tested three times a month, during the last month only twice—and all with equally satisfactory results. *The utmost care* should be used throughout. All points are of equal importance, for if any one be neglected the test is unreliable.

5. The expense is borne by the patrons. After the machine is bought I should consider 50c. per patron a fair estimate of expenses.

6. I prefer having the cheesemaker do the testing, as he has charge of the milk until it is ready to test, and so should finish it. Any cheesemaker of ordinary ability, in a week's time can learn to successfully handle the machine. Another qualification is absolutely necessary: he must have well-established principles of fair play and honesty, else he has no business with a testing machine.

THOS. A. GOOD, EX-SECY. N. B. D. ASSO., BRANTFORD.

Mr. W. S. Campbell, who is suffering from a severe illness, handed me a letter from you re testing milk and paying for same according to quality at cheese factories.

1. Yes; it gives every patron justice according to the real value of his milk. It induces patrons to take better care of the milk by stirring and airing, because he gets a better test by doing so. It takes away all temptation to water, skim or tamper with the milk, as a patron may put half water in his can and gain nothing. Our factory made more cheese to 100 lbs. milk last season than ever before. None, or very few gassy curds, and I think our cheese is of better quality and commands a better price than before.

2. Yes. Our cheesemaker takes one ounce of milk out of the weigh can immediately after it is turned in from the wagon and before it has time to settle. These samples are taken every day and kept in glass jars, *air-tight*, made for the purpose, until the milk is in.

3. Once a week. The latter part of this question had better be answered by an expert.

4. Last year we had not decided upon testing the milk till after our maker was engaged, and we had to pay him \$1 per patron (which the patrons were assessed for), and find the acid and other material, which we estimated at about 25c. each. This year our maker is engaged to do the testing, supply material, &c., without any extra pay above the price named, for making, &c., &c., which he is to do by the 100 lbs. milk.

5. We prefer the maker doing the testing, as we consider he is the right person to be responsible for its correctness.

A. W. EDWARDS, EMPIRE.

I tested the milk for two hundred and thirty patrons sending milk to our factories last season. On the whole it proved very satisfactory, considering the fact that our patrons were not previously educated as to the working of the system. I am sorry to say it, but cheesemakers of neighboring factories did all they could to poison the minds of our patrons against the system. This year a few of our patrons are going to a neighboring factory run on the old system. Their dissatisfaction in every case is, their milk did not test up to the average last season, consequently they will receive more for their milk than it is worth this season.

1. I prefer the new system to the old, because:—

- (a) Every man receives the just value of his milk, for the butterfat determines the quantity and quality of the cheese.
- (b) It has a tendency to improve the quality of the cows. The cow that gives a small quantity of rich milk is no longer unprofitable for cheesemaking, but will pay her owner as well in summer as in winter.

[NOTE.—Providing the quantity is not too small.—Ed.]

(c) It encourages patrons to produce better milk and also to take better care of it, because milk that has been neglected and not aired gets a thick leathery cream on it that will not dissolve again, consequently will not test so high. Patrons realizing this will take better care of their milk. Ninety pounds of nice, wholesome milk is worth more for cheesemaking than 100 lbs. of tainted, gassy milk.

2. Yes; our patrons are almost unanimous for it.

3. The samples are taken from the weigh can immediately after emptying, by means of a long handled dipper holding two or three ounces, the dipper being about 1 in. in diameter. The samples are taken every morning and kept in a glass jar for the purpose, into which has been put as much pulverized Bicromate of Potash as will lay on a ten-cent piece; in warm weather a little more will not hurt.

[NOTE.—Some makers take the sample for test from the trough running into the vat when the weigh can is about half emptied.—Ed.]

4. I have run the composite sample test from one to six weeks, and if the samples are properly shaken daily I consider a monthly test quite reliable. After taking the samples carefully from the jar the acid should be added in quantity, according to its strength. I use enough so that when the fat is brought up it has a rich butter color. I always use water at or above scalding heat. The machine should be given as rapid a motion as it will stand. If a sample tests unusually high or low, I take another sample and test it to be sure there has been no mistake, but if first sample is carefully taken the tester never lies.

5. In order to introduce the system we found all appliances the first season, the patrons agreeing to buy and use faithfully an aerator. After the necessary appliances are procured, the chemicals and extra labor are worth from 40c. to 50c. per patron for season running a monthly test; for a weekly test it would be worth more.

6. I would prefer having the maker do the testing, if he is interested in the success of the system; if he is not in favor of it, some other person would give better satisfaction. If one man could be engaged to do the testing for a group of factories it might work satisfactorily.

JOHN T. TAYLOR, WEST LORNE CHEESE FACTORY CO.

1. We consider the Test vastly superior to the old pooling system, so much so that we would not care to go back to it.

2. We will use the Test this year again in both of our factories, as we find it a complete check against dishonesty in sending in milk on the part of the patrons.

3. We take a small sample *every morning* from each patron's milk, and put away in a self-sealing bottle labelled with the patron's name. And on Saturday afternoon each week, sufficient milk is taken from each bottle to make a test.

4. We test once a week, taking care to bring milk to a like condition by "Potash" or "Lye," and taking *great care* in shaking up and measuring milk, sulphuric acid, &c. Also, *careful reading of percentages.*

5. We charged the patrons 5c. per test last year. Have reduced the amount to 3c. for this season, and think this is not far out of the way.

6. We are satisfied so far with the maker's doing the testing, but at the same time we could easily conceive of circumstances that would make it preferable to have an expert do the testing for a group of factories.

The Cash Return.

Occasionally some one with a herd of ill-selected, ill-cared-for and ill-fed cows raises the stereotyped cry that there is "no money in dairying." Possibly not—for such a man—and we doubt if there would be in any line of special purpose farming or "general purpose" farming either. He has probably settled down in despair to the conviction that there is no money in anything on his farm. But there is money in dairying, as the prosperity of good dairy districts and individual dairymen amply proves. Take an example. Mr. Facey, of the Harrietsville cheese factory, in the Township of North Dorchester, East Middlesex, which last season turned out over 247 tons of cheese, furnishes the following list, which very clearly indicates what farmers can do who give their attention to the cow business. These men do not set themselves up as fancy or gilt-edged dairy farmers at all, and the results may be taken as a fair sample of what can be accomplished under ordinary conditions—with well-fed, carefully selected cows. In fact, last season was not one of average excellence, because it was practically shortened nearly a month by the long continued and severe drought. As will be noticed, the following includes small as well as large patrons:

Names of Patrons.	Number cows.	Cash Received.
Stephen Yorke	35	\$1501 22
Angus Yorke	20	905 72
Fred Garton	26	1021 24
Henry Jackson	30	1244 19
Sam'l Archer	30	1220 19
Sam'l Leaman	20	808 92
John Barr	14	640 30
P. Abbott	10	444 92
R. Tooley, M. P.	7	383 25
Thos. Rodway	3	139 40
Total	195	\$8309 33

These 195 cows, owned by these ten patrons, brought their owners an average of nearly \$43 per head for the summer season, which, as we have already pointed out, was not a very favorable one. Besides this, milk was used at home, and a very considerable sum additional was realized for butter made in winter; some of the farmers mentioned, we understand, being patrons of the Gladstone factory when run as a winter creamery. It would not be excessive to put the total yearly return from some of these herds at an average of over \$50 per cow. For the whole province the average is probably not yet much more than half that sum. The example of these Dorchester farmers should stimulate others to go and do likewise.

VETERINARY.

Azoturia.

[Read before the Students of the Ontario Veterinary Medical Society, by Walter N. Armstrong, Honorary Graduate of the Ontario Veterinary College of Toronto.]

The subject of my essay is more commonly known as Azoturia, yet it has been described under various names, as Hysteria, Hæmoglobinæmia, Hæmoglobinuria, Hæmoglobinæmia, Sprain of the Psoæ Muscles (Dick). The term which we use, I think, is preferable, for in the meaning of the word we get a faint idea of the nature of the disease under consideration.

Although such differences of opinion are held as to the naming of the disease, yet in the main points all agree that it is some poison or excess of effete material existing in the blood, interfering with its functions in such a manner as to produce derangement of the motor nerves, particularly of the extremities, the apparent cause of this poison or effete material being enforced rest and feeding on a highly nutritious diet.

Prof. Williams describes the disease very nicely when he says it is a hypernitrogenous condition of the blood and system, generally due to over-feeding and want of exercise. The excessive secretion of urine and excretion of urea, being physiological results, are due to the presence of effete materials in the blood, this being due to metamorphoses of nitrogenous food.

The same writer also says that during enforced rest and feeding on a stimulating diet, the amount of nitrogenous material is in excess of that required for the maintenance of the system, the surplus being stored up in the blood in the form of albumen;