

Some Explanations and Helps in Rendering Cheese Factory Accounts by the Butterfat System.

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In visiting a number of cheese factories in the west, where milk is being paid for according to the percentage of butterfat as shown by the Babcock Test, numerous questions are asked and numerous statements made by patrons supplying milk to these factories, expressing doubt and erroneous opinions regarding the correctness of the system. Not long ago the statement was made by a patron of a factory operating this test, that the man who supplied the poorer milk would pay more for having his cheese manufactured than the man sending the richer milk.

It is difficult to see how this opinion could be formed, if the system of deducting the cost of manufacturing and of appropriating the dividends under the Babcock method were thoroughly understood. For example, it is claimed that a patron supplying milk with only 3 per cent. of butterfat will pay more for having his cheese manufactured than the patron supplying milk with 4 per cent. of butterfat in it.

Let the cost of manufacturing cheese be 2 cents per lb. Now, supposing that A, the man supplying the three per cent. milk, and B, the man supplying the 4 per cent. milk, each send 5,000 lbs. of milk to a cheese factory during the month of June. If the average number of lbs. of milk to make a lb. of cheese be 10.33, then this 10,000 lbs. of milk supplied by A and B would make 962½ lbs. of cheese. Let ten cents be the market price per lb. for which this June cheese is sold, then the total market value of the cheese would be $962.5 \times 10 = \$96.25$. Deduct the cost of making, which would be $962.5 \times 2 = \$19.25$, and the net amount due A and B would be \$77. Then the share to each would be as follows:—

A— $5,000 \times 3 = 150$ lbs. of butterfat.
B— $5,000 \times 4 = 200$ " "

Total, 350 " "

$\$77.00 \div 350 = 22$ cents, the price of the butterfat per lb., and

A would receive $150 \times 22 = \$33.00$.
B " " $200 \times 22 = \$44.00$.

In looking into this way of making up the accounts carefully, we fail to see how A is charged any more for making his cheese than B, as A's milk will not make as much cheese as B's, and consequently the total charged him for making will not be so much.

To make the matter still plainer, let us look at it in another way. From all the varied experiments that have been carried on in making cheese from different qualities of milk, we find that 1 lb. of butterfat will give 2½ lbs. of cheese. Now, A supplies 150 lbs. of butterfat during the month, which will make $150 \times 2\frac{1}{2} = 412\frac{1}{2}$ lbs. of cheese, and B supplies 200 lbs. of fat, which will make $200 \times 2\frac{1}{2} = 500$ lbs. of cheese. Then the cost of making is 2 cents per lb. of cheese. Therefore, A will pay $412\frac{1}{2} \times 2 = \8.25 for making, and B $500 \times 2 = \$10.00$; and A would receive as net proceeds for his cheese $412\frac{1}{2} \times 8$ cts. = \$33, and B 500×8 cts. = \$40.00. This shows pretty clearly that A and B will pay a just proportion of the cost of manufacturing according to amount of cheese that their different qualities of milk will make. If the 3 per cent. milk would give more cheese per lb. of fat than the 4 per cent. milk, there might be some reason for believing that the man supplying the poorer milk would pay more for making than the man supplying the richer milk; but even then it would be difficult to prove that such were the case, when the cost of making is levied on the actual quantity of cheese made from each lot of milk.

It is also important that an accurate and rapid method of making up the patrons' accounts according to this new method should be found, and consequently secretaries of cheese factories are anxious to get whatever helps they can that will enable them to make up the accounts easier and with less labor.

A couple of months ago we sent out an article through the press, giving some different methods of making up patrons' accounts and apportioning the dividends according to the percentage of butterfat in milk. It set forth the principle upon which the making up of the accounts was based, and would be a guide to persons having to make up such accounts. It is difficult to get an accurate and rapid method without a large amount of multiplying and figuring. For instance, there is no other way of finding the amount of butterfat supplied by each patron but by multiplying the weekly totals of milk by the percentage of butterfat, or by multiplying the monthly total of milk supplied by each patron by the average of his weekly percentages of butterfat for the month. In many of our large factories, in making up accounts according to the pooling system, a table

was made out after the sales of each month showing the value of from 1 up to 10,000 lbs. of milk, which greatly facilitated the making up of patrons' accounts and saved a lot of multiplying. A person accustomed to using decimals can make out such a scale or table very easily, and use it to good advantage in making up accounts according to the butterfat system.

Supposing at a cheese factory during the month of June there are supplied during the month 22,008.89 lbs. of butterfat, which makes 55,913.5 lbs. of cheese. Let for simplicity the price of the cheese per lb. be 10 cents, then the total value of the month's product will be \$5,591.35, and deducting from this amount 2 cents per lb. of cheese for manufacturing, we have left as net proceeds to be divided among the patrons \$4,473.08. By dividing this amount by the total butterfat we have the price of the butterfat per lb. to the patrons, which is as follows:— $\$4,473.08 \div 22,008.89 = 20.32$ cents. To find the value of the butterfat from 1 up to 900 lbs., and from 1 down to .009 of a lb., first find the value of 1, 2, 3, etc., up to 9 lbs., and arrange them in order one above the other; then move the decimal point to the right one figure for from 10 to 90, two figures for from 100 to 900 lbs., and one figure to the left for from .1 to .9, two figures for from .01 to .09, and three figures for from .001 to .009 lbs.

This scale of values would then be tabulated as follows:—

Lbs.	Val.	Lbs.	Val.	Lbs.	Val.	Lbs.	Val.	Lbs.	Val.	Lbs.	Val.
100	20.32	10	2.032	1	.2032	.1	.0203	.01	.0020	.001	.0002
200	40.64	20	4.064	2	.4064	.2	.0406	.02	.0040	.002	.0004
300	60.96	30	6.096	3	.6096	.3	.0609	.03	.0060	.003	.0006
400	81.28	40	8.128	4	.8128	.4	.0812	.04	.0081	.004	.0008
500	101.60	50	10.160	5	1.0160	.5	.1016	.05	.0101	.005	.0010
600	121.92	60	12.192	6	1.2192	.6	.1219	.06	.0121	.006	.0012
700	142.24	70	14.224	7	1.4224	.7	.1422	.07	.0142	.007	.0014
800	162.56	80	16.256	8	1.6256	.8	.1625	.08	.0162	.008	.0016
900	182.88	90	18.288	9	1.8288	.9	.1828	.09	.0182	.009	.0018

Now, to operate this table, supposing A and B, two patrons, supply 483.725 and 291.301 lbs. of butterfat respectively, then A's account would be found from the tables as follows:—

400 lbs. fat are worth	\$1.28
80 " " "	16.256
3 " " "	.0006
.7 " " "	.1422
.02 " " "	.0040
.005 " " "	.0010

A's 483.725 lbs. of fat are worth \$98.2028
And B's as follows:—

200 lbs. fat is worth	\$2.064
90 " " "	18.288
1 " " "	.2032
.3 " " "	.0609
.004 " " "	.0008

B's 291.301 lbs. of fat is worth \$59.1929

This table will be of great advantage, and will save considerable labor in multiplying, in factories having over 75 patrons; under that number the labor saved will not be so great, as one may multiply each patron's butterfat by the price per lb. in about the same time as it would take to make out the table and get the values from it. There is one great advantage, however; if the table has been made out correctly, the accounts can be made out more accurately, as there is not so much liability of making a mistake when the table is used, as in multiplying each patron's account separately.

Cheese for Special Cheese Exhibit, Toronto.

Editor of the FARMER'S ADVOCATE:

DEAR SIR:—In the circulars sent out by the exhibition authorities, Toronto, in reference to the special cheese competition, there seems to be a misunderstanding as to whether a person who competes for the special prizes must be a member of three associations or a member of only one of them. When the Eastern and Western Ontario and the Quebec associations arranged for this special prize of \$500 to bring into direct competition the cheese from the three districts named, it was arranged that everyone who entered cheese for the special prize must be a member of any one of the associations. Consequently, it is not necessary to be a member of the three associations in order to compete; but if a person is a member of any one of the associations he is eligible to compete. If there is anyone who wishes to compete and is not already a member of any of the associations, he can become a member of the Western Ontario Dairymen's Association by forwarding fifty cents, with address, to me at 361 Richmond street, London.

Hoping there will be no further misunderstanding in reference to the membership, I remain, yours very truly,

J. W. WHEATON.

Secretary Western Ontario Dairymen's Ass'n.
London, July 28th, 1893.

Valancey E. Fuller, Superintendent of the World's Fair Jerseys, writes that his experience demonstrates (as European investigators long ago ascertained) that cows do not eat in proportion to their weight. Some of his lightest cows eat and digest more food than the heavier ones. The main point with the dairy farmers is to get a cow giving a large quantity of good milk. She is almost certain to be profitable. It is not a question *how much* a cow eats, but *what she does with it*.

Points in Dairy Practice.

HOW TO MILK IN FLY TIME.

Rip open an old sack and, when ready to milk, spread it over the cow's back. The result will surprise you, and the milkers need not to be told more than once to use it.

A correspondent writes:—"I have thoroughly tested the Fowell milk aerator advertised in the FARMER'S ADVOCATE, and find it a most excellent article. It thoroughly strains the milk and exposes it twice to the air going into the can. It is simple and easily kept clean—a most essential point."

At the last meeting of the Eastern Dairymen's Association Prof. C. C. James threw out the suggestive idea that since milk is elaborated from food, and food comes from the soil, deterioration of the latter will tend to make poorer the quality of the milk. Moral: Enrich the soil and you enrich the dairyman.

Prof. Sanborn, of the Utah Agricultural College, after witnessing how the World's Fair dairy test is conducted, makes the point that it is not altogether a breed test, but very largely one of skill in feeding. Though it may not decide the "question of breeds," it will afford valuable information along the line of feeding economically.

Heat, flies, poor ensilage and bad clover have been worrying the cows and their superintendents at the Chicago milking trials. Death has laid low at least one cow of each of the three competing breeds—apoplexy, impaction and milk fever being the ailments assigned. This would seem to justify the fears of many breeders who strongly objected to sending their valuable cows for so long a test, and under such trying and unusual conditions as necessarily prevail.

The question is frequently asked, Why do the cheesemakers of the present require a little more milk to make a pound of cheese than they did some years ago? and the answer often given is that farmers have been breeding for quantity of milk regardless of quality. There may be some truth in that, but the real reason is that a very different style of cheese is being made—one much firmer and carrying a great deal less moisture. A soft cheese suits a local trade, but not our important export business.

Cheese for the World's Fair.

MEN IN THE TRADE TO MAKE SELECTIONS FROM WESTERN ONTARIO AT THE FACTORIES.

The Executive Committee of the Dairymen's Association of Western Ontario, met in the secretary's office, London, on August 5th. There were present, President Geary, Messrs. T. Ballantyne, A. Patullo, A. F. MacLaren, J. S. Pearce and J. W. Wheaton, secretary. Prof. Robertson, Dairy Commissioner, Ottawa, was also present to confer with the members of the Executive in reference to obtaining a thoroughly representative exhibit of cheese from Western Ontario for the October competition at the World's Fair, Chicago.

In order to induce the factorymen to exhibit cheese and to obtain the very best goods, it was arranged to have men in the trade or some expert judges visit the factories in Western Ontario as far as possible, to make selections of cheese to be sent to Ingersoll not later than September the 26th for shipment to the World's Fair.

President Geary will make arrangements for some of the London cheese buyers to make selections at the factories in Middlesex County and the district to the south, west and north. A. Patullo, Woodstock, will arrange for some of the Ingersoll and Brantford buyers to select cheese at the factories in Oxford county and the district to the south and east. The county of Perth and the remainder of the northern district will be looked after by the well-known cheese firm of T. Ballantyne & Son, Stratford, who will make arrangements for expert judges to make selections of cheese at the factories in that district.

All cheese must be sent addressed Prof. Robertson, Ingersoll, Ontario, to reach there not later than September 26th.

The secretary of the association will issue a circular giving particular and definite information regarding all cheese exhibits for the World's Fair, to be mailed to the secretary and cheese-maker of all the factories in Western Ontario. All factorymen who desire to have parties visit their factories and make selections are requested to write to J. W. Wheaton, Secretary of the Association, 361 Richmond Street, London, Ontario. These arrangements will not prevent any person from sending cheese to Ingersoll without being selected at the factories.

The Executive recommended to Prof. Robertson the advisability of granting a medal for the best cheese exhibited from each county, and also a medal for the cheese from each province that scores the highest number of points at the World's Fair.

Only the finest quality of cheese is wanted, and may be taken from any month's make. Probably the latter half of August and the first ten days of September will be the best time for obtaining goods of the finest quality.