

## Cheese Department

Makers are invited to send contributions to this department, to cast questions on matters relating to cheesemaking and to suggest subjects for discussion. Address all letters to The Cheese Maker's Department.

### How Shall We Divide Gruehls?

Prof. H. H. Denn, O.A.C., Guelph.  
Three systems of paying for milk are now in use among Canadian cheese factory patrons. The oldest and the one most commonly adopted is that of dividing monies received from the sale of cheese, according to the weight of milk delivered, not taking into account any differences in the composition of milk or its relative cheese producing capacity. The injustice of this plan is readily seen in the following table of results based upon five years' experiments with milk ranging in fat content from 2.7 to 5.5 per cent. In this work nearly 200,000 lbs. of milk were used and 250 experiments made.

Per cent. fat	Lbs. Cheese produced per 100 lbs. milk.	Lbs. cheese per lb. fat.
2.7	8.89	3.32
3.0	9.54	3.52
4.0	10.36	3.86
4.5	11.08	4.07
5.0	11.77	4.27

The range in milk-fat percentages at factories will probably be from 3 to 4.5 per cent. This difference in fat content, makes a difference of about two pounds more of cheese a 100 lbs. of milk in favor of the milk testing 4.5 per cent. fat. We thus see the absurdity and injustice of basing cheese values upon weight of milk only.

#### STRAIGHT FAT TEST

The second system in use among perhaps less than 25 per cent. of the cheese factories in Canada is that known as the "test" plan, or of basing values upon one milk constituent, the fat. This system was advocated about the time the Babcock test for fat was brought to the attention of dairymen in 1890. This test was hailed with delight by Canadian factorymen, and it has undoubtedly been of great assistance in developing the dairy industry of Canada.

As usual with a new thing, some extravagant claims were made for this test, among them that it determined the value of milk for all purposes. Some of the leading men connected with the science and practice of dairying in both Canada and the United States were carried away by this new-found dairy helper, and the country was flooded with "fat" literature on dairying while detractors vied with one another in praise of the inventor and in making absurd claims for its effect upon the morals and practices of dairymen. Far be it from us to withhold credit where credit is due, and the inventor of the Babcock Test, Dr. S. M. Babcock, of Madison, Wisconsin, U.S.A., deserves the thanks of Canadian dairymen for giving to them free the results of his scientific discovery; at the same time, we are not bound to accept as truth all that any man may say, he be ever so great and learned.

Referring again to the table, we see that as the percentage of fat in the milk increased, the yield of cheese per pound of fat in the milk decreased. On this point science and practice agreed. Science says that as cheese is made from two milk constituents, fat and casein, one of these alone cannot be used as a basis for determining cheese production from milk with varying percentages of that constituent. In practice we

found this to be the case, hence, we could not accept the "fat" theory and practice as a basis of settlement among patrons of cheeseeries. We have maintained our position on this question during the past 18 years.

The third system takes into account both fat and casein, but as there was no short method of determining casein previous to 1907, we suggested the factor 2, as an addend to the fat percentage to determine the relative values of milks for cheesemaking. This system, in varying forms, has been followed by a few factories in different parts of Canada and where the work has been done conscientiously, it has, generally speaking, given satisfaction.

However, we now have a practicable, short method of determining casein in milk, hence we advise the use of both the Babcock test for fat and the Hart test for casein in cheesemaking. The casein test in cheesemaking, for this second important Station, for this second important test for dairymen from the same station. We look next for a single test which will combine in one, the features of the Babcock and Hart Casein tests, so that both milk-fat and casein may be determined at the same time and at one operation. The man who does this will deserve the thanks of dairymen in all parts of the world.

### A Maker Reviews Cool Curing

A cool curing room of modern construction is a part of the Central Smith cheese factory in Peterboro County, recently, to an editor of Farm and Dairy, who called at the factory, the maker and manager, Mr. A. H. Campbell said: "It is better not to start curing cheese in a room to build a poorly constructed cool room. The cooling room in this factory was built according to specifications sent out by the Dairy and Cold Storage Branch and has given perfect satisfaction. We can keep the temperature in our room down to 58 degrees all summer. I believe that 58 or 60 degrees is the ideal temperature for the proper curing of the cheese."

"Our curing room saves us \$300 to \$400 a year. About five years ago I made an experiment in this line. I took two cheese and held them six months in curing room and the loss in weight was only three-quarters of a pound each. In the ordinary curing room, the loss in weight will be 2½ to 3 pounds. It takes a cheese two days to dry out properly. After that time till the cheese are shipped a good cool curing room is a great benefit. As the Peterboro Cheese Board only meets once in two weeks all of our cheese are held 10 days and some twice as long."

"One of the greatest advantages of a cool curing room," continued Mr. Campbell, "is that the cheese are held for a few days and the maker sees what his product comes to and has to stand the loss if it is inferior. This is a great incentive to better work. When the cheese leave the factory in a couple of days he has nothing to worry about."

"Do you get any advantage in price on your cool cured product?" was asked. Mr. Campbell replied: "On every batch of cheese this season cheese from our factory was sold at the highest figure bid. We have averaged about one-sixteenth of a cent higher than the average price paid on the board."

An up-to-date cool curing room is only one of many commendable features of the Central Smith factory. Every facility is afforded that will enable the maker to make the finest cheese. Why butter is made and sold to the patrons and is considered a profitable method of utilizing the fat in the whey.

### Educational Work Needed

"During the last week, I have inspected 3,500 cheese at various factories and they were all of uniform quality and texture," said Mr. G. A. Gillespie, a prominent cheese buyer on the Peterboro Board, to an editor of Farm and Dairy recently. "The Dominion and Provincial Governments in regard to dairying has been such that practically all of our cheese makers are capable of producing first-class cheese." Other buyers have expressed themselves similarly as to the efficiency of the educational policy of the Department of Agriculture. Perhaps nowhere else was the favorable result of dairy educational work more in evidence this year than in the cheese exhibits at the Canadian National Exhibition.

The greatest field now open for a further improvement in the quality of our cheese lies in educating the patron to deliver milk of better quality. Educational work among patrons can be carried on by the makers themselves with profit to both patron and maker. Winter offers exceptional opportunities for carrying on this work as there is not so much to do in the factory.

Makers who have hitherto made no effort to encourage their patrons to produce more and better milk by visiting them personally on their farms, should endeavor to do so this winter; and when out at this work induce each and every patron to take Canada's only Dairy paper, Farm and Dairy, a paper that in the hands of each patron will prove of great advantage to the whole Dairy industry.

We have no cool curing rooms down through this county and consequently we have to make a pretty hard cheese, one with good body in order to have it stand up in hot weather.—Henry H. Rennie, Dundas Co., Ont.

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