

TABLE III.—Showing the effect of Low Speed and Low Temperature Combined on the Percentage of Fat in the Cream and Loss of Fat in the Skim-milk. Three Runs were made from the same Milk on Three different Days.

Per Cent Fat in Milk.	Speed turned per minute.	Temperature of Milk.	Per Cent Fat in Cream.	Per Cent Fat in Skim-milk.
3.6	50	70 degrees	28.5	.078
3.6	50	80 "	27.0	.053
3.6	50	90 "	21.5	.030

There is not as great a variation in the percentage fat in the cream as in some of the other tables, but the loss of fat in the skim-milk is very high at the low temperatures, showing that the best results will be obtained by turning the separator at its proper speed and having the milk at a temperature of 95 or 96 degrees.

Two runs were made from milk testing 3.3 per cent and two from milk testing 4.5 per cent. The following table shows the average results:—

TABLE IV.—Variation in the per cent Fat in the Cream from Milk containing different percentages of Fat

Speed of Separator.	Temp. of Milk.	Per cent Fat in Milk.	Per cent Fat in Cream.	Per cent Fat in Skim-milk
60	95.5	3.3	27.0	.017
60	95.5	4.5	35.5	.015

Here we find a difference of 1.2 per cent of fat in the milk made a difference of 8.5 per cent in the cream test. There will not be so much variation as 1.2 per cent fat in the milk from the same herd from day to day, but there may be a difference of 0.5 per cent, which at the same rate of variation would equal 3.5 per cent in the test of the cream.

The foregoing results show very plainly that different conditions in the milk and only slight changes in the operating of the separator, without changing the cream screw, will make wide variations in the percentage of fat in the cream. If the temperature of the milk is too low, or the speed of the separator is reduced below the required number of revolutions per minute, the variations will be accompanied by an excessive loss of fat in the skim-milk.

A good separator, properly handled, will deliver cream testing anywhere from 20 to 35 per cent fat and not leave over 0.02 per cent fat in the skim-milk.

To give the best results in Butter-making cream should test 30 to 35 per cent fat.

GEO. H. BARR,  
Chief, Dairy Division.

## THE CREAM AND ITS CARE.

### RELATION BETWEEN PERCENTAGE OF FAT AND QUANTITY OF CREAM.

The following table will show approximately the pounds of cream separated from 100 pounds of milk, testing from 3.3 to 4 per cent of fat, the cream testing from 20 to 40 per cent.

Pounds of Milk.	Fat in Milk.	20% Cream.	25% Cream.	30% Cream.	35% Cream.	40% Cream.
	%	Lb.	Lb.	Lb.	Lb.	Lb.
100	3.3	16.5	13.2	11.00	9.43	8.25
100	3.4	17.0	13.6	11.33	9.71	8.50
100	3.5	17.5	14.0	11.66	10.00	8.75
100	3.6	18.0	14.4	12.00	10.28	9.00
100	3.7	18.5	14.8	12.33	10.57	9.25
100	3.8	19.0	15.2	12.66	10.85	9.50
100	3.9	19.5	15.6	13.00	11.14	9.75
100	4.0	20.0	16.0	13.33	11.43	10.00