

TESTING THICK OR CURDLED MILK.

Testing thick or curdled milk is not to be recommended as it is more difficult to get a correct sample. However in hot weather a sample may curdle due to insufficient preservative, or to over-ripe milk having been added to the jar. In such cases a very small quantity of powdered lye may be added to the sample and the sample poured from one vessel to another several times. The lye neutralizes the acid and when sufficient acid is neutralized the milk again becomes liquid. The lye should be added in small quantities, pouring the sample several times after each addition of lye. In this way the use of an excessive quantity of lye may be avoided. When the lumps of curd disappear and the sample becomes fluid it is sampled in the usual way. Samples treated in this manner require less acid than a normal sample.

THE TESTING OF CREAM.

DETERMINATION OF THE PER CENT OF FAT IN CREAM.

Cream is that portion of milk, rich in fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force.

The Babcock test is used to determine the per cent of fat in cream as well as in milk. In determining the per cent of fat in cream certain modifications of the method already outlined for determining the per cent of fat in milk are necessary.

CREAM TEST BOTTLES.

In testing cream specially graduated test bottles are used. Several different styles of bottles (fig. 12) are on the market, but those most commonly used are:—

- (a) the six and one-half (6½) inch bottle graduated to read fifty (50) per cent of fat, using a nine (9) gramme sample;
- (b) the six and one-half (6½) inch bottle graduated to read either forty (40) or fifty (50) per cent of fat, using an eighteen (18) gramme sample;
- (c) the nine (9) inch bottle graduated to read fifty (50) per cent of fat, using an eighteen (18) gramme sample.

Each main division on the graduation scale of these bottles, representing one per cent of fat, should be subdivided into two equal subdivisions, each of which represents one-half of one per cent of fat. This is not always done and on many bottles the smallest division of the scale represents one per cent of fat.

Whether the bottle is constructed for a nine (9) gramme or an eighteen (18) gramme sample, the bulb should have a volume, at least, equal to that of the ordinary ten (10) per cent milk bottle.

Both the six and one-half-inch nine-gramme bottle and the nine-inch eighteen-gramme bottle have necks of smaller bore than the six and one-half-inch eighteen-gramme bottle. In this respect either of the former is preferable to the latter, since the smaller the bore of the neck the less error there is likely to be in reading the per cent of fat. In using the nine-gramme bottle, however, any error in weighing the sample produces twice as great an error in the test as the same error in weighing will produce in the eighteen-gramme bottle. This is readily seen from the following calculation:—

If a nine-gramme sample in a nine-gramme bottle reads 36 per cent fat, each one gramme of the sample reads $36 \div 9 = 4$ per cent fat, and each one-half gramme reads 2 per cent fat. If an eighteen gramme sample in an eighteen-gramme bottle reads 36 per cent fat, each one gramme of the sample reads $36 \div 18 = 2$ per cent fat, and each one-half gramme reads 1 per cent fat.

That is, an error of one-half gramme in weighing the sample produces in one case an error of 2 per cent in the reading and in the other case an error of 1 per cent.