

PREPARATION OF ACETIC ACID SOLUTION.

The dilute acetic acid solution is prepared by adding 90 c.c. of distilled water to 10 c.c. of chemically pure glacial acetic acid. To 25 c.c. of this 10 per cent solution are added 975 c.c. of distilled water, making 1,000 c.c. of a .25 per cent solution.

MAKING THE TEST.

In making the test, the temperature of the milk, the chemicals, and room in which the work is being performed should be between 65° F. and 75° F.—preferably at 70° F.

By means of the small graduate 2 c.c. of chloroform are measured and transferred to the test bottle, and by means of the 20 c.c. pipette, 20 c.c. of the dilute acetic acid are also added to the test bottle. The sample of milk to be tested is carefully poured to ensure uniformity, and by means of the 5 c.c. pipette, a 5 c.c. sample is taken and added to the chloroform and acid in the test bottle. The mouth of the bottle is tightly covered with the thumb and the bottle inverted and carefully shaken for 15 to 20 seconds, which is timed by means of a watch.

Tests should be made in duplicate and should be whirled as soon as possible after being shaken. If more than one sample is being tested, the chloroform and acid are added to all bottles and then the sample of milk added to each bottle, after which all are shaken.

The bottles are placed in the machine in such a manner that the machine is properly balanced. The metronome is now set to beat 55 to 56 beats per minute and the crank is turned 55 to 56 revolutions per minute for seven and one-half to eight minutes.

The bottles are now taken from the machine and placed in a perpendicular position in a rack made for the purpose.

In the lower part of the graduated tube, there is now a liquid which is composed of the chloroform and fat. Above this is the casein, which should appear as solid white column free from ragged edges, and above the casein is the acetic acid mixed with the remaining portion of the milk.

After the bottles have been allowed to stand ten minutes, the per cent of casein is read from the graduated scale.

The test is very sensitive to changes in conditions under which it is operated. Increasing the temperature of the milk, the chemicals, or the room in which the work is performed, will give lower readings, while decreasing the temperature of the milk, the chemicals, or the room, will give higher readings. Decreasing the speed of the centrifuge will give higher readings, while increasing the speed will give lower readings.

THE TESTING OF BUTTER.

DETERMINATION OF THE PER CENT OF WATER IN BUTTER.

As the principles which determine the percentage of water incorporated in butter have become better understood by buttermakers, a gradual increase in the water content has been apparent. Since it is unlawful to manufacture or to sell butter in Canada containing more than sixteen per cent of water, a simple, rapid and reasonably accurate means of determining the percentage of water in butter has become a necessity for the guidance of the buttermaker as well as for inspection purposes.

METHOD OF DETERMINING THE PER CENT OF WATER IN BUTTER.

Some of the moisture tests which have been put on the market have been complicated and lacked durability. The method most commonly used in Canada at the present time, consists of the evaporation of the water from a definite weight of butter and the determination of the percentage of water from the loss in weight.