

the per cent of casein in milk and such a solution is also satisfactory for use in connection with the acidimeter. A 1 per cent solution is prepared by dissolving 1 gram of phenolphthalein in 100 c.c. of 95 per cent alcohol.

TESTING CREAM, SKIMMILK, BUTTERMILK AND WHEY.

The acidimeter is also used to determine the per cent of acid in cream, skimmilk, buttermilk and whey in the same manner as it is used in determining the per cent of acid in milk.

DETERMINATION OF THE PER CENT OF CASEIN IN MILK BY MEANS OF THE WALKER CASEIN TEST.

In determining the per cent of casein in milk by means of the Walker method, the acidimeter as described in this bulletin is used. In addition to the acidimeter, it is necessary to have:

1. A 16.3 c.c. pipette.
2. A 2 c.c. graduate.
3. A bottle of neutral formaldehyde solution (40 per cent).

The neutral formaldehyde solution is prepared by adding a few drops of phenolphthalein indicator to the bottle of commercial formaldehyde and then adding the caustic soda solution until a faint permanent pink colour is obtained.

MAKING THE TEST.

In making the test, first secure a representative portion of the milk to be tested. After thoroughly pouring this portion, take a sample with the 16.3 c.c. pipette and deliver the sample into a white delf cup or beaker. Add about 1 c.c. of indicator (1 per cent solution) and add the alkaline solution as in testing for acidity until a decided permanent pink colour is obtained. Now add 2 c.c. of the neutral formaldehyde solution, which destroys the pink colour in the sample. The burette is again filled to the 0 mark with the alkaline solution, after which the solution is again added to the cup or beaker until a permanent pink colour, of the same shade as in the first operation, is obtained. The number of cubic centimetres of solution used in the second operation is noted and will represent the per cent of casein in the milk. For example, if 2.5 c.c. of solution are used, the percent of casein in the milk is 2.5.

The neutral formaldehyde solution should be kept preferably in a glass-stoppered bottle. In time the faint pink colour of the formaldehyde solution will disappear, owing to the action of the carbonic acid of the air, when a few drops of the alkaline solution should again be added to the formaldehyde to restore the colour.

Using slightly more than 2 c.c. of formaldehyde solution in making the test will not in any way affect the results.

In case a 16.3 c.c. pipette is not obtainable, the 10 c.c. pipette may be used and the test performed as outlined. The number of cubic centimetres of solution required in the second neutralization must be multiplied by the factor 1.63 to give the per cent of casein when the 10 c.c. pipette is used.