

In testing skim-milk or buttermilk especial care must be taken to have all glass-ware perfectly clean, as a slight amount of fat in the pipette or bottle would seriously affect the results.

A 17.6 cc. pipette is used to measure the sample and 17.5 cc. of acid is ordinarily used. It is probable that a slightly more perfect separation of the fat will be obtained if the milk and acid are cooled below 60° F. and about 20cc. of acid used.

Care must be taken in mixing the milk and acid to avoid closing the graduated neck of the bottle with small pieces of curd. If this occurs the mixture of milk and acid will be forced out of the other neck and the work must then be repeated. It is a good practice to add half the acid, and mix, then add the remaining half of the acid and mix again. The water must be added slowly to avoid forcing the fat out of the neck. If necessary when reading the test, the fat can be raised by pressing the finger over the opening of the larger neck.

In testing skim-milk or buttermilk the fat is not all recovered in the neck of the bottle. Some fat remains in the mixture of milk and acid. It has been recommended that five one-hundredths of one per cent be added to the reading shown on the bottle to allow for this error and thus make the test correspond more closely with chemical analysis. However, since the fat remaining in the mixture in the bottle cannot be recovered by mechanical means and is, therefore, not available for the manufacture of cheese or butter, and since the testing of these by-products is largely to determine the *comparative* loss from time to time, such addition to the reading would seem to be unnecessary.

DETERMINATION OF THE PER CENT OF FAT IN WHEY.

The double-neck bottle and 17.6 cc. pipette are used in testing whey. Care should be taken to have the temperature of the whey well down to 60° F. Owing to the fact that part of the milk solids have been removed in the process of cheesemaking less acid is required, and usually slightly over half a measure of acid will be sufficient.

THE AVERAGE COMPOSITION OF MILK, SKIM-MILK, BUTTERMILK AND WHEY.

	Milk.*	Skim-milk.†	Buttermilk.†	Whey.†
	Per cent.	Per cent.	Per cent.	Per cent.
Water	87.5	90.30	90.6	93.40
Fat	3.6	0.10	0.1	0.35
Casein	2.5	2.75	2.8	0.10
Albumen	0.7	0.80	0.8	0.75
Sugar	5.0	5.25	4.4	4.80
Ash	0.7	0.80	0.7	0.60
Lactic Acid			0.6	

* Dean. † Van Slyke.