

APPARATUS FOR THE DETERMINATION OF FAT AND WATER IN BUTTER.

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In 1904 the writer examined and reported upon the 'Carroll tester' and 'Geldard butter tester,' both being forms of apparatus devised in England for the ready estimation of water in butter. The former was not found trustworthy, and could not be recommended even where approximate results only were required. The latter gave extremely satisfactory results, the data being in close accord with those obtained by analysis, provided the operation was carried out with care.*

During the past season two further pieces of apparatus have been examined—the one for the determination of fat, and the other of water, in butter. Both are from the manufactory of the Wagner Glass Works, New York, U.S.A.

THE WAGNER BUTTER TEST BOTTLE.

By means of this bottle, it is stated, a practical and convenient method is offered for obtaining the percentage of fat in any sample of butter. The directions furnished with the bottle give no definite information regarding the quantity of acid to be used, nor the temperature at which the fat column is to be read.† We found at the outset of this investigation to ascertain its accuracy, that these were matters of very considerable importance, and that the percentages of fat as indicated in the graduated tube varied within quite wide limits, according to the quantity of acid employed and, more particularly, with the temperature of reading.

On writing the Wagner Glass Works, New York, on these points, they replied as follows:—

1. About 2 cc. of normal strength sulphuric acid are required for making the test in the Wagner Test Bottle.

2. The fat column should be read at about 140° F. The easiest way to control temperature is to use a water-bath at 140° F. and leave the bottle in it for about 5 minutes. The contents of the bottle will take the same temperature as the water-bath.

*Chemical investigations relating to dairying undertaken in 1904, Bulletin No. 6, Dairy Commissioner's Branch, Ottawa.

†Directions accompanying the Wagner Butter Test Bottle: 'After bottle being balanced on a scale add 9 grams of butter, solid form, in the side tube (funnel-shaped tube) the bottle is then to be placed in hot water, which will soon melt the butter and the butter runs into the bottle. A small amount of acid should then be added and the bottle is then to be placed in a tester, the test is completed as any cream test. To read off the butter-fat, fill the side tube (funnel-shaped tube) with hot water which will raise the fat column in the graduated neck, by gently pressing down or gently drawing up the rubber cork on top of the graduated neck, the fat column may be moved in the graduated neck so as to bring the lower end of the fat column level with the zero mark which is indicated by a ring below the bulb, and the percentage of fat may be read directly, without the use of dividers, or other measuring tools.'

