

bottles and compare the readings. A bottle that differs by more than .2 ($\frac{1}{5}$) in its reading from the rest should be discarded. As the capacity of that part of the neck over which the scale extends should be 2 c. c., the accuracy of the scale may be tested by filling the bottle to the bottom of the scale with water at the temperature of the room, and then adding 2 c. c. of water at the same temperature by means of a 2 c. c. pipette.

2. Mix the milk well to obtain a representative sample. Mix by pouring from one vessel to another, as violent shaking tends to churn the milk and does not ensure so thorough mixing.

3. Be very careful to measure the exact amount of milk for a test, and to blow out the pipette well.

4. The amount of acid used must be varied to suit its strength. The right amount is being used when the fat presents a bright golden appearance. Acid that is much too strong or too weak should be discarded, as satisfactory results cannot be obtained from its use.

5. Hold the test bottle at a slant when pouring in the milk and acid, to avoid choking the neck of the bottle.

6. Mix the milk and acid thoroughly.

7. If the temperature of the room be low, it is necessary to pour hot water into the tester to keep up the temperature.

8. The water added to the test bottles should be soft or distilled. If hard water be used add a little sulphuric acid (half an acid measure, or a little more to a gallon of water) to soften it; this will prevent foam above the fat.

9. Correct readings cannot be taken after the fat has cooled. In such cases set the bottles in hot water before reading.

Always do this when you have several readings to take. Adopt a fairly constant temperature of the water—130 to 140 degrees F.—for this purpose.

10. A pair of dividers or compasses is excellent for taking the length of the column of fat in reading. Measure from highest to lowest point in column.

11. The following are the causes of cloudy or burnt readings:

(1) The use of too much or too strong acid.

(2) Allowing the acid to fall directly upon the milk.

(3) Having the milk at too high a temperature when adding the acid—the higher the temperature the less acid is required.

(4) Allowing the sample to stand too long, after adding the acid, before mixing the milk and acid.

12. Light colored readings and floating particles of curd are due to—

(1) The use of too little or too weak acid.

(2) Having the milk or the acid at too low a temperature—the lower the temperature of either the more acid is required.

Note.—It is always better to bring the milk to the right temperature—about seventy degrees.

(3) Insufficient shaking of the bottles to completely unite the milk and acid.

13. See that your pipettes and test bottles are clean before using.