



WEBER SCIENTIFIC

Memorandum

Date: November 22, 1995
From: Fred Weber
Subject: **Gerber Method for Testing Yogurt**

Measuring fat percentage directly:

1. Depending upon the presumed fat content use an appropriate percent bottle. 4% and 8% are available. The 4% bottle is calibrated in 0.05% divisions; the 8% bottle in 0.10% divisions. Skim bottles are also available for fat-free product.
2. Bring the sample to room temperature. If you use a water bath the water temperature should not exceed 32°C/90°F.
3. If product has already been set, stir the sample to bring it to homogeneity; this will change it from a "plastic" to a viscous consistency, which is essential in obtaining a properly representative aliquot. This initial preparation should bring the viscosity of the product down to a point where you can push it through the cream syringe and cannula when weighing.
4. Add 10 ml of standard Gerber sulfuric acid for unsweetened product. Use diluted acid (ice cream acid) for sweetened product.
5. Weigh 11.125 grams into the bottle.
6. Add 1 ml of iso amyl alcohol.
7. Insert lock stopper.
8. Shake well.

A somewhat longer shaking is needed to digest the product. If shaking is stopped when the curd formed initially, first appears to have become solubilized, the materials absorbed on fat globules will not have been completely removed, and the lower fat portion of the fat which rises into the column, after centrifuging, will not be properly clear and straw colored light yellow. It may be white, whitish or cloudy - all signs of inadequate shaking.

Because the solids contained in a 11.125 gram sample, by always giving all bottles 45 to 60 seconds of vigorous shaking, after the curd is fully solubilized, you insure that all of any sample's fat will always rise properly into the column. The amount of shaking needed to solubilize the initially formed curd will vary slightly, among samples of the same type, or to a greater degree, when samples of different types are shaken in the same rack, by hand or by machine. If, when shaken bottles of the same type of sample show much difference in the time taken to reach curd solubilization, the energy received by individual bottles may differ. This is of no particular importance, since the bottle cannot be over-shaken. What is important is that only after the last bottle shaken has fully reached visible solubilization, is the time for extra shaking to begin.

From a practical aspect: if 45 seconds is the longest time taken to solubilize the initial curd, give the bottles 90 seconds of shaking.

9. Invert bottles 4 times.
10. Centrifuge for 4 minutes.
11. Temper at 60 – 63°C/140 – 145°F for 5 minutes.
12. By applying gentle pressure to the lock stopper, bring bottom line of that column to coincide with

a unit graduation. Read the bottom of the upper meniscus on scale to $\frac{1}{2}$ of smallest graduation; subtract bottom percentage and record. This will give you the percentage of fat directly.

13. Re-centrifuge, re-temper and re-read. This duplicate procedure should match your initial reading. If the second reading is higher than the first reading, this indicates that additional shaking is required initially.

If an 11.125 gram sample size creates a curd that is too thick to digest, you may want to adopt the following dilution method:

- In step 5 Weigh 5 grams of sample. Then add 6 ml of distilled water.
- In step 12, multiply the reading obtained by $11.125/5$ - the dilution factor. (Keep in mind that the scale precision error of this Gerber bottle will also increase by this same factor.)