



## Memorandum

### Using the Gerber Method for Testing Eggnog

*Standard Methods for the Examination of Dairy Products*, 17th edition, details the procedures to be followed in testing all dairy products by the Gerber method, including sweetened and flavored milk. However, when it comes to testing eggnog, many laboratories have experienced a high degree of success using the following modification:

1. Reading percent of fat directly using milk bottle:

- a) Into a Gerber 8% milk bottle (catalog #1011), add 10 ml of specially diluted Gerber ice cream acid (specific gravity of 1.800-1.805, catalog #1083-00).
- b) Weigh 11.125 grams of sample.
- c) Add 1 ml of iso amyl alcohol.
- d) Insert lock stopper.
- e) Shake well, extra shaking may be required (see below).
- f) Invert bottles 4 times.
- g) Centrifuge for 4 minutes.
- h) Temper at 140 - 145°F for 5 minutes.
- i) Read percentage of fat directly to nearest 0.05% ( $\frac{1}{2}$  of smallest graduation).
- j) 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 you are not satisfied with the above procedure, you may want to adopt the following technique.

2. Dilution method using milk bottle:

- a) Into a Gerber 8% milk bottle (catalog #1011), add 10 ml of specially diluted Gerber ice cream acid (specific gravity of 1.800-1.805, catalog #1083-00).

- b) Weigh 5 grams of sample. Then add 6 ml of distilled water.
- c) Add 1 ml of iso amyl alcohol.
- d) Insert lock stopper.
- e) Shake well.
- f) Invert bottles 4 times.
- g) Centrifuge for 4 minutes.
- h) Temper at 140 - 145°F for 5 minutes.
- i) Multiply the reading obtained by 11.125/5 - the dilution factor. (Keep in mind that the scale precision error of this Gerber bottle -  $\pm 0.05$  - will also increase by this same factor.)
- j) Re-centrifuge, re-temper and re-read.

The fat globules of chocolate-flavored milks, and of ice creams, ice milks and sherbets, homogenized after the fortification of their formulas with "stabilizers", make them more difficult to clear than those of unhomogenized milk or cream. Unless the bottles containing these "stabilized" formulations are given thorough shaking AFTER the curd appears to have become fully solubilized, their tests will not show proper clear, light yellow, fat columns. 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. Also, the lower 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. 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 bottles cannot be "overshaken". What is important is that only after the last bottle has fully reached visible solubilization, is the time for the "extra shaking" to begin. From the practical aspect: if 45 seconds is the longest time taken to solubilize the initial curd, give the bottle 90 seconds of shaking.

You may want to consider a mixer (our item #3067-02) for use with the Gerber test. The bottles can be placed directly onto the dimpled mat. Or a simple bungee cord will also allow a Gerber bottle rack and locking cover to be clamped into place for convenient mechanical shaking.