

August 22nd, 1946.

Recent Developments in Methods for Determining the Sanitary Quality of Milk.

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No one test or combination of tests is sufficient to give a report. The sanitary picture must be added. Opinions, as to the value of tests, vary. State shortages have shifted the stress in the examination points. Pasteurization, for example, has been stressed. At the Plant, the aesthetic expression is a factor and an index. Some say Farm examination is just as important.

Recent development connect a three-point program:-

- (1) - Direct microscopic count.-Grade "A"-200,000.-Grade "B"-500,000.
- (2) - Coliform test-none in 1 c.c.
- (3) - Phosphatase test.

First: A truer picture of the count--more rapid.  
Second: Check's improper handling after pasteurization.  
Third: Only positive test of effective pasteurization.

Gunderson's Approach:-

- a.-Sediment test.
- b.-Reductose test.
- c.- Phosphatase test.
- d.-Swabs (faulty cleaning and sterilization in the Pasteurizing Plant).

There is a tendency to Plant, rather than Farm inspection.

Across the nation, the plate count seems to be going out, and the direct microscopic count taking its place.

Specific New Tests.

- (1)- Use of 60-125c.c. Sterile pyrex flask, for sampling milk.
- (2)- For Thermotolerant Bacteria by Bryan of Michigan.

A modification of the Frost plate method. 100. sampling, -add 1cc. sterile

~~Neutrient~~

Neutrient agar and make Frost plate count. Pasteurize in tube and make second plate count. Incubate for four hours, -stain and count.

(3)-Swab test for Equipment: Moisten sterile swab, pass over equipment and inoculate in slant agar tube.

(Cont'd)



(4)- Ninth Edition of "Standard Methods of Milk Examination" will be out in 1947.

Changes in technique:-

Re: Methylene Blue Test (important in East, but not here).

Tubes are inverted at intervals during incubation, to mix fat back into sample--some Bacteria are carried up with fat.

Re: Resazurin Test: Period Shorter--(1 hr. vs. 8 for M. Blue).

(5)- Gyger has developed tests for judging quality of milk.

(6)- Coliform Test used extended in services during war on milk and ice cream. Technique is different in most Labs.

(7)- Recent tests show that Coliform organisms multiply at storage temperatures. Time of storage important.

(8)- Hassen Culture Bottle:- Agar slant in a 2oz. bottle; bottle is immersed in milk and milk drained out. (app. .01c.c. adheres).

Incubate 16 - 18 hours; suitable for field Sanitarians.

(9) - By Dr. Golding, Washington:-A modification of the Resazurin and Meth. Blue Test. Tube used that will hold 10c.c.milk. Proper amount of dye is added to empty tube and evaporated and sealed. In the Field, 10c.c. milk is added with a sterile dipper and the sample incubated.

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*Bacteria counts merely to confirm inspectors findings.  
B. coli multiply at 40° F.*



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"KEEPING MILK EQUIPMENT CLEAN".

(George Lehn, -Turco Products Co.)

Read from "MILK PLANT MONTHLY"-by Turco Co.  
"SURFACE CHEMISTRY in SURFACE CLEANERS".

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A very good article on the principle behind the work of various types of cleaners--there are special compounds for special jobs.

(1)- Wetting action: to remove oils & fats--also to penetrate them.

(2)-Emulsifying action--work with above in loosening and dispersion

(3)-saponification--of animal fats by chemical action.

(4)-Colloidal Action--Breaks up and spreads particles in water solution.

(5)-Solvent--a.-Ionization (Water).  
b.-Dissolve (Coal tars)

(6)  $\begin{matrix} \text{N}^+ & \text{H}^+ \\ \text{H}^+ & \text{N}^+ \end{matrix}$

(6)-Neutralization.

(7)-Buffer action--gives more prolonged cleaning power.

(8)- Total alkalinity.

(9)-Water conditioning--softening & preventing loss of efficiency of agent.

Mr. Lehn demonstrated the Wetting Action of chemical. A small ball of wool was placed on the surface of each of two tumblers of water, to one of which a very small quantity of chemical had been added.

The wool in the treated glass began to sink at once, while the normal water would hold the wool for hours, without wetting it.



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"The Work of the Milk Sanitarian:--Fruitful or frightfully Fretful."

H.A. Bendixen, Ph.D.,--Prof. Dairy Manufacturing,  
State College of Washington.

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A milk Sanitarian "is a person, qualified by technical training and experience, to supervise all phases of an adequate, clean, safe, and palatable supply of milk, in the interest of Public Health"----Fookes.

He must, therefore, be a Nutritionist, an Economist, a Bacteriologist, and an Engineer.

A recent discovery in Dairying, is NUTRIENT "X", which has the nature of a vitamin; it aids in providing nutrient value and is found in grass and hay. NUTRIENT "X" fixes itself in the casein, making that part of milk, now, a more important constituent.

The qualities of any Inspector must include Fairness, Friendliness, and Firmness.

He must show tolerance and cool judgment.

He records and even has pictures in his files, to show progress of ~~trade~~ the trade & in his work.

"SAFE MILK", In the August Reader Digest, is ~~x~~ recommended to the Layman for profitable reading.

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*The time is short when milk & cream will  
be required to meet the same standards.*