



## Daily Laboratories

Division of Mobilab, Inc.  
2200 W. Altorfer Dr. Suite B · Peoria, IL 61615

ISO 17025  
Registry no. 17-B-00133

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### ***The Dairy Industry and the Laboratory's Role***

#### **Regulations**

Pasteurized Milk Ordinance (PMO)  
FDA Interstate Milk Shippers (IMS)

**Raw milk outbreaks** in unpasteurized (raw) milk and raw milk products, United States 1998 – 2013

#### **136 Total outbreaks**

102 were from fluid milk. 27 cow. 4 goat. 71 unspecified type  
28 were from cheese. 2 aged. 3 homemade. 18 Mexican-style queso fresco. 1 goat chevre. 1 curds. 3 unspecified.  
6 multiple raw dairy products (fluid milk, cheese, and/or colostrum)

#### **2,468 total illnesses, 2 deaths**

1,803 fluid milk-related illnesses, no deaths: 477 cow, 63 goat, 1,263 unspecified  
608 cheese-related illnesses, 2 deaths: 46 aged, 80 homemade, 349 Mexican-style queso fresco (2 deaths), 5 goat chevre, 63 curds, 58 unspecified.  
57 multiple raw dairy products (fluid milk, cheese, and/or colostrum)

#### **From January 2015 to March 2016**

15 recalls of unpasteurized “raw” milk  
States include California (4), Pennsylvania (3) New York (3), Washington (2), Idaho, Tennessee, Indiana.  
Contaminants: *Campylobacter sp.* (7), *Salmonella sp.* (2), *E. coli* 0157:H7 (4), *Listeria spp.* (4), *Cryptosporidium* (1).  
Some recalls were in response to routine testing yielding positive results. Others were due to illnesses related to the consumption of raw milk. In states that allow the sale of raw milk, there are mandatory testing requirements that vary from state to state. Some states require routine pathogen testing, others don't until there is a complaint or outbreak.

#### **Bacteriological requirements and standards**

Total bacterial count – raw milk to be pasteurized: limit 100,000/ml  
Pasteurized products limit: 20,000/ml  
Nonfat dry milk limit: 10,000/ml  
Raw milk to be sold from the farm to the consumer limit: 20,000/ml.

Drug residue – no positive results by a FDA approved drug residue detection method.

Somatic cell count – Somatic cells are “body” cells. They include white blood cells and detached epithelial cells. These are normally present. They are detected by a stained slide (DMSCC) or electronically (ESCC).

Cow milk – US limit is 750,000/ml. EU regulations require milk products exported to the EU have a maximum SCC of 400,000/ml. Some states have already reduced their limits.



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Goat milk – US limit is 1,500,000/ml. Raw milk for sale limit will be 1,000,000/ml.

Goats and cows differ in how their mammary glands secrete milk. Goats (and humans) glands use an apocrine system and they slough off cells. Cow glands use a merocrine system and the cells remain intact.

A coliform count is an indication of sanitation. That test is not required on raw milk that will be pasteurized. It will be required for raw milk sold from the farm to the consumer. The limit will not exceed 10/ml. Pasteurized products are tested and the coliform count will not exceed 10/ml.

Phosphatase test looks for an enzyme that is normally present in raw milk. It is destroyed at a temperature higher than the temperature required to kill non-sporeforming bacteria.

Water is tested for coliform bacteria and the limit is less than 1 coliform/100 ml water.

Containers and closures used for dairy products are tested at least 4 times in a 6 month period for residual microbial count and residual coliform count.

Environmental monitoring is done as part of a dairy plant's sanitation operating plan. A well-designed, regularly scheduled program not only verifies cleanliness and sanitation, but it is also a critical part for the protection of the brand. Testing should be done with regards to the zones around food production.

### References:

Pasteurized Milk Ordinance (PMO) 2013

Grade "A" Pasteurized Milk and Milk Products – 77 IL Adm. Code 775

FDA Interstate Milk Shippers List

Grade "A" Pasteurized Milk and Milk Products Act – 410 ILCS 635

Center for Disease Control and Prevention's (CDC) online foodborne outbreak database

Dairy Herd Improvement Association (DHIA)

USDA Animal and Plant Health Inspection Service (APHIS)

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