

Making Raw Milk Safer

or

When Cooperative Extension Turns Into A Blood Sport



*American Veterinary Medical
Association Annual Meeting
July 11, 2009*

Michael Payne DVM, PhD



Raw Milk: Panacea or Poison?

- Less than 0.5% of U.S. milk is consumed unpasteurized.
- In spite of this raw milk and cheese result in approximately twice the outbreaks as conventional products.
- About half the states allow some method of legal raw milk sales.
- Instate shipment of raw milk for human consumption (except for processing first) is illegal.
- CDC: 1998 - 2005 > 45 outbreaks, 100 illness, 2 deaths from raw milk or raw milk cheeses.



2006 E. coli / raw milk outbreak



★ Counties Involved

- 5/6 children (4 ♂, 2 ♀ average 8 YO, range 6-18) w/ bloody diarrhea report consuming same Fresno dairy brand raw products (whole & skim milk, colostrum) within one week of symptoms, Sept. 5 -24.
- 3 hospitalized, 2 with HUS.
- Control: 50 O157:H7 consecutive cases from October to June: no raw milk drank.
- 5 fecals available: indistinguishable DNA patterns (genetic finger-prints) new to CDC's PulseNet database; different from spinach outbreak strain.
- No suspect product still available.
- Oct. 31 *non-outbreak* O157:H7 was isolated from 3 heifers.
- Colostrum had fecal coliforms ranging from 320,000 to 140,000,000 MPN/gram.

Other recent raw milk outbreaks



- 2007 - Campylobacter 8 ill. One available human fecal sample had same DNA finger-print as fecal from 4 cows from the same Fresno dairy. No suspect product available for testing.
- 2007 - Listeria recall from the same Fresno dairy's raw cream. No illnesses reported.
- 2008 - Campylobacter recall Fresno dairy's raw cream. No illnesses reported.
- 2008 – Campylobacter 16 ill, one paralyzed from a illegal Del Norte cow share dairy.
- Also during 2008 there were 3 outbreaks in PN, CT, WA and 7 warnings or recalls in WA, NY, PN,

AB 1735 Implemented January 1, 2008



AB 1735 mandated that raw milk for human consumption meet the same sanitary standards as pasteurized milk (esp. 10 coliforms / ml).

Hearings by Senate & Assembly Ag Committees

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April 1, 2008

Michael A. Payne, DVM, PhD
Western Institute for Food Safety & Security
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Dear Dr. Payne:

The Senate Agriculture Committee and the Senate Select Committee on Food-Borne Illness will be holding a joint informational hearing to receive testimony regarding the safety of fresh farm milk, as well as the availability of fresh farm milk products to California consumers.

California State Senate

SENATOR DEAN FLOREZ

REPRESENTING KERN, KINGS, FRESNO, AND TULARE COUNTIES



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SELECT COMMITTEES

California Wine Industry
Public Health &
the Environment

Fresh Farm Milk: Assuring Safety and Consumer Choice

**Oral and Supplemental Written Testimony
by Dr. Michael Allen Payne, DVM, PhD**
*Western Institute for Food Safety and Security
University of California - Davis*



A joint informational hearing held by:
Senate Agriculture Committee &
Senate Select Committee on Food-Borne Illness

April 15, 2008 | State Capitol Building, Room 4203

**My oral and written
testimony contained
ten suggestions for
making raw milk for
human consumption
safer while still
maintaining
consumer choice.**

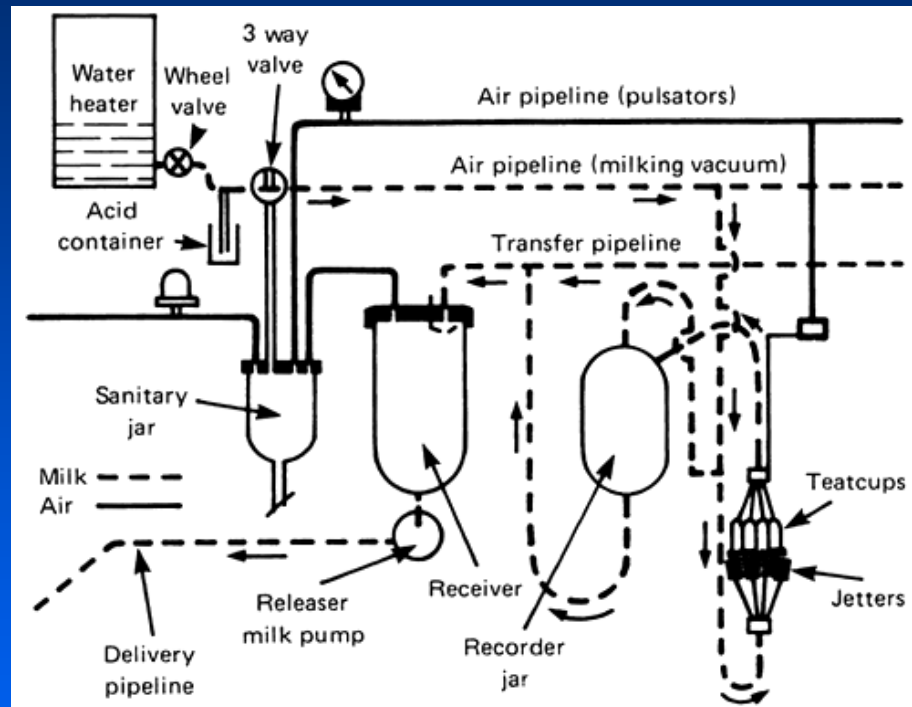
**A summary of these
ten proposals
follows...**

#1: Maintain Equal Sanitation Standards For Raw And Pasteurized Milk



2007 Survey: Washington State (23 raw dairies) & and Maine (19 dairies) maintain both a 10 coliform/ ml limit and vibrant and robust raw milk industries.

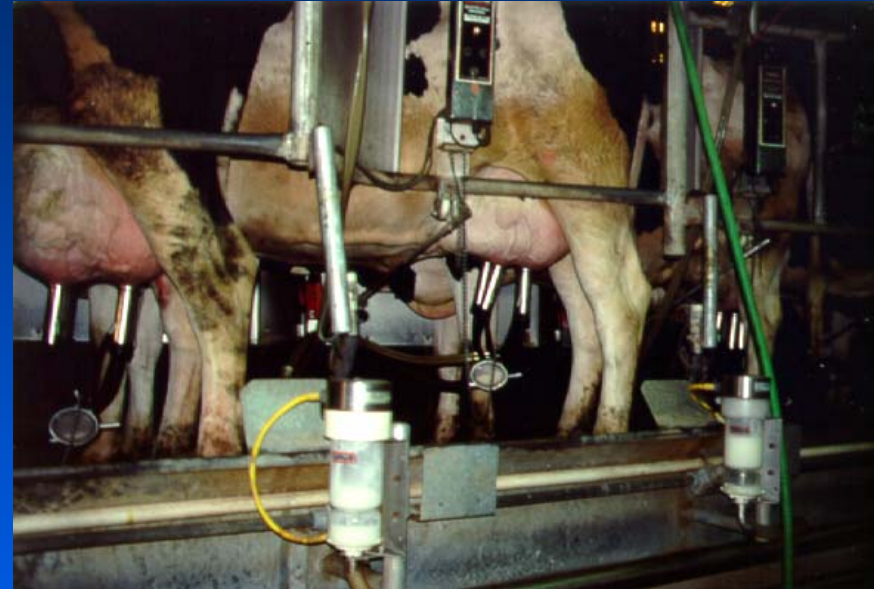
#2: Require Recording Devices For Equipment Cleaning Of Raw Dairies



Sanitizer for CIP system

Research performed by UC demonstrates that recording devices installed on Clean-In-Place (CIP) systems will reveal inadequate cleaning-sanitation procedures that are not always indicated by “high” bacterial counts.

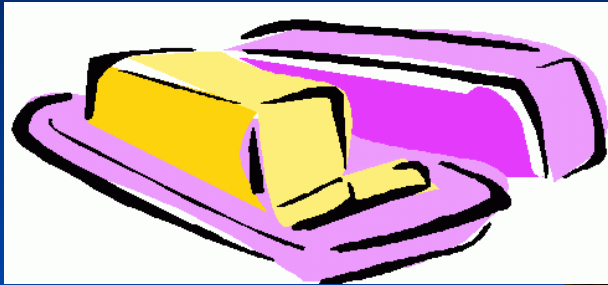
#3: Require Development Of A HACCP Plan For Each Raw Dairy



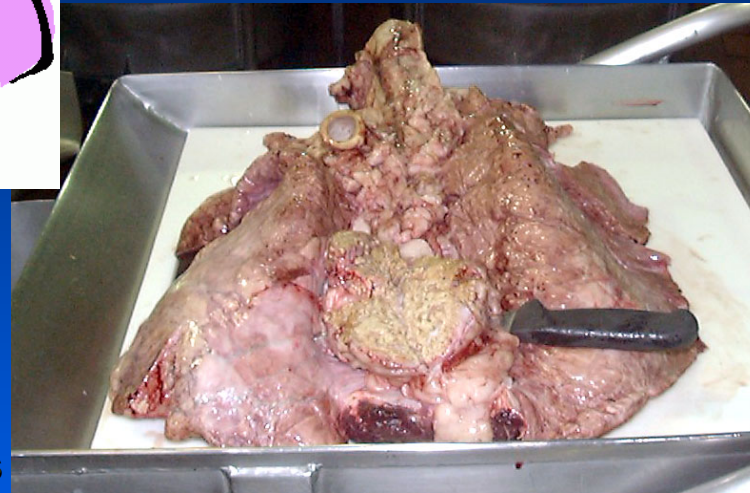
Hazard Analysis Critical Control Point (HACCP) is the most common and successful method food processing companies use to establish and document adherence to critical food safety procedures...

However there can be no functional HACCP without rigorous sanitation testing to verify compliance (i.e. tests to show that the HACCP program is actually working).

#4: Criminal Penalties For Out-sourcing From Non-licensed Dairies



Abscess in cow lungs caused by Bovine Tuberculosis



A California raw milk dairy reports it brings in dairy product from non-raw-milk-licensed dairies to cover product short-falls (particularly butter). This subverts the entire intent of California's required TB testing for raw dairies and puts the raw milk consumer at risk, particularly of TB in butter.

#5: Regulate Colostrum As Dairy Product, Not A Nutritional Supplement



In California colostrum (see red arrows) is designated as a “nutritional supplement” and has no sanitary standards.

During the 2006 raw milk outbreak in California, colostrum samples were found to contain fecal coliform counts of up to 140,000,000 MPN / gram, a situation which is *completely legal*.

#6: Stop Interstate Shipment Of Raw Milk Product Labeled As Pet Food



Importantly this misbranding practice removes protections related to storage and shipping which might otherwise exist. This practice was the subject of a federal criminal investigation in California.

#7: Increased Regulatory Pathogen Testing Of Raw Milk Product



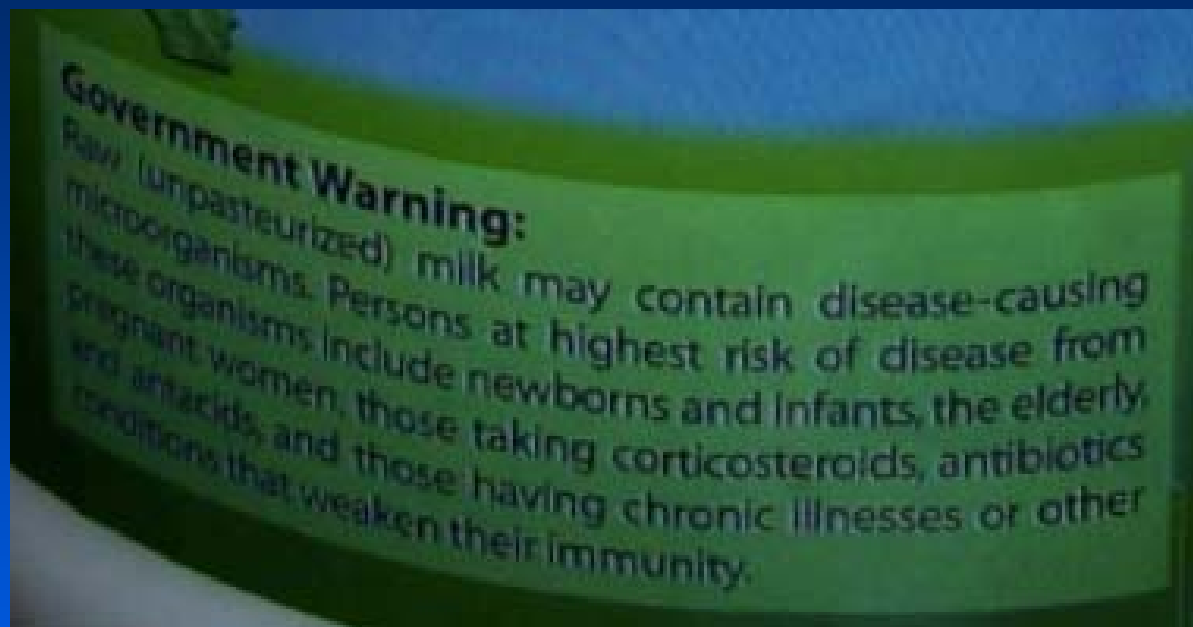
On-farm “quick tests” in most cases have not been tested or approved for use in milk. More importantly these assays typically would not have the sensitivity or specificity to indentify pathogens such as E. coli O157:H7 which cause infection at exposures as low as 10- 50 cells.

#8: Require Point-of-sale Warning For At-risk Populations



Alerting consumers through required point-of-sale messaging might greatly reduce the occurrence of some of the most devastating illnesses that have occurred in these highly susceptible population of consumers.

#9: More Visible (& Understandable) Warnings On Product Containers For At-risk Populations



“Government Warning:

Raw (unpasteurized) milk and raw milk dairy products may contain disease-causing micro-organisms. Persons at highest risk of disease from these organisms include newborns and infants; the elderly; pregnant women; those taking corticosteroids, antibiotics or antacids; and those having chronic illnesses or other conditions that weaken their immunity.”

Current warning required for raw milk in California.

A partial list of health benefits attributed to raw milk consumption include prevention or cure of:

- asthma
- arthritis
- anemia
- psoriasis
- hypertension
- diabetes
- tuberculosis
- infertility & impotence
- irritable bowel
- lactose intolerance
- tooth decay
- certain cancers
- various diseases of the heart, kidney and prostate.



#10: Pre-approve All Health Claims For Raw Milk Promotional Materials.



Raw milk manufacturers should be held to the same standard of review and approval of health and safety claims made in promotional materials as those applied to other foods, nutritional supplements or pharmaceuticals. This should include product containers and coupons, print and broadcast promotions and internet and tradeshow advertizing.

Rational discussion of appropriate safe-guards continues to grow more difficult...



Let Me Know If You Figure Out What This Raw Milk “Expert” Is Saying; A PA Politician Speaks Out

Tuesday, May 13, 2008 at 10:23PM

If you want to get a sense of the double-talk that passes for science around the raw-milk issue, take a look at [the transcript](#) from the California Senate hearing on raw milk held April 15 in Sacramento. [Organic Pastures Dairy Co.](#) has just published the complete 159-page transcript on its site.



Bootleg Milk & Bathtub Cheese





Questions?