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# Створення системи контролю за безпечністю харчових продуктів на основі оцінки ризиків у циклі виробництва та збуту молочних продуктів в Україні

## Важливість безпечного сирого молока - здоров'я людини

Семінар з підвищення обізнаності

Джордж Пінто Ферейра

Київ, 16.08.2016



Schweizerische Eidgenossenschaft  
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# Початкова точка: яке можна дати визначення поняттю «молоко»?

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**“ [Milk is]The integral product of the full and uninterrupted milking of a healthy, well-nourished and not overworked milk-producing female. It should be collected under hygienic conditions and should not contain colostrum. ”**

*International Congress on Prevention of Fraud in Paris, 1909*

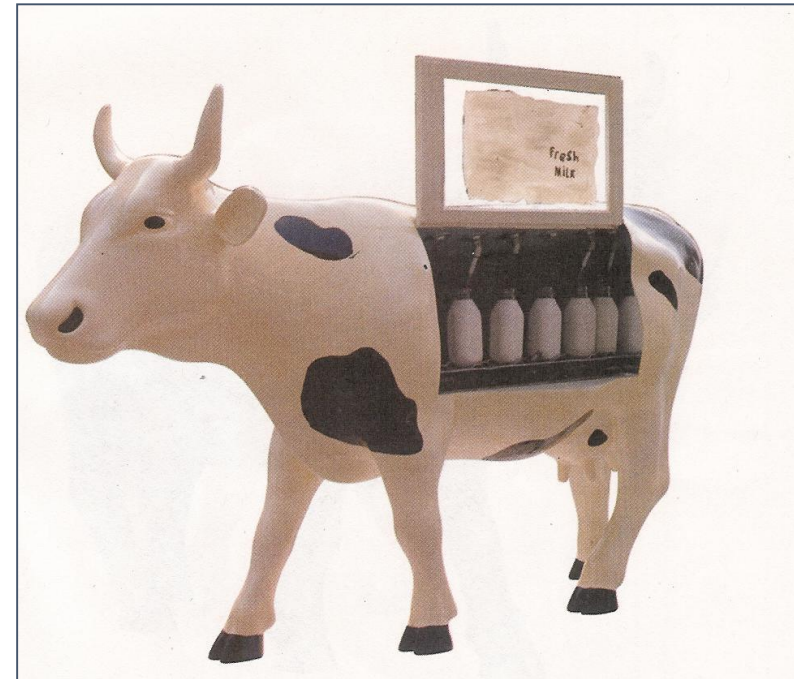
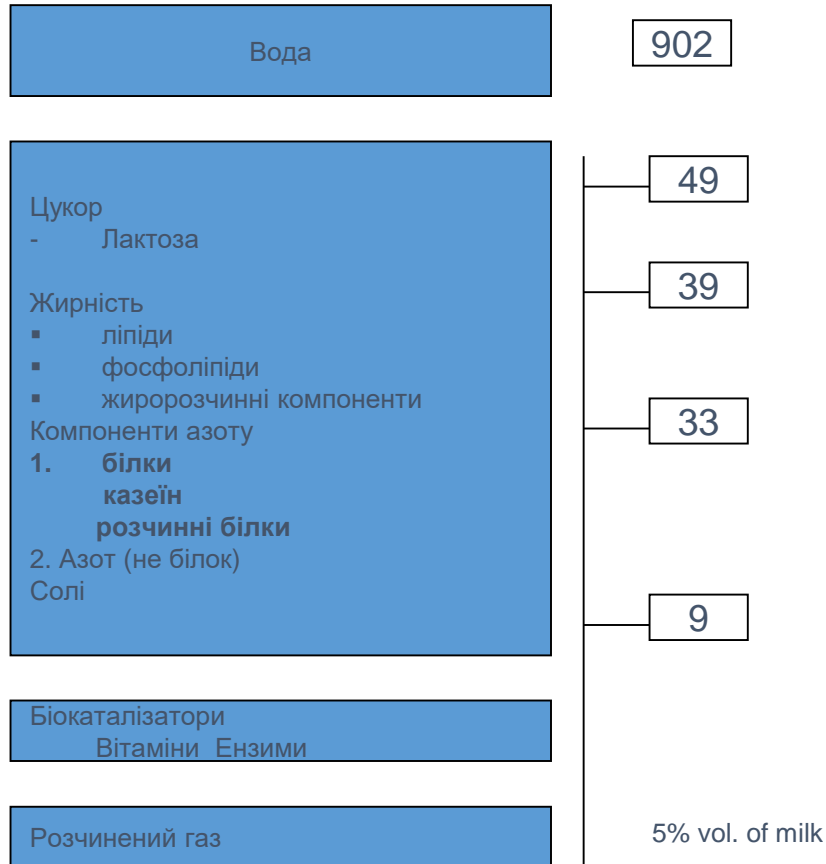
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*cited in Yvan Chouinard & Girard, Animal Frontiers, 2014*



# Молоко: одне з основних поживних ресурсів

Склад 1 л молока (приблизно)

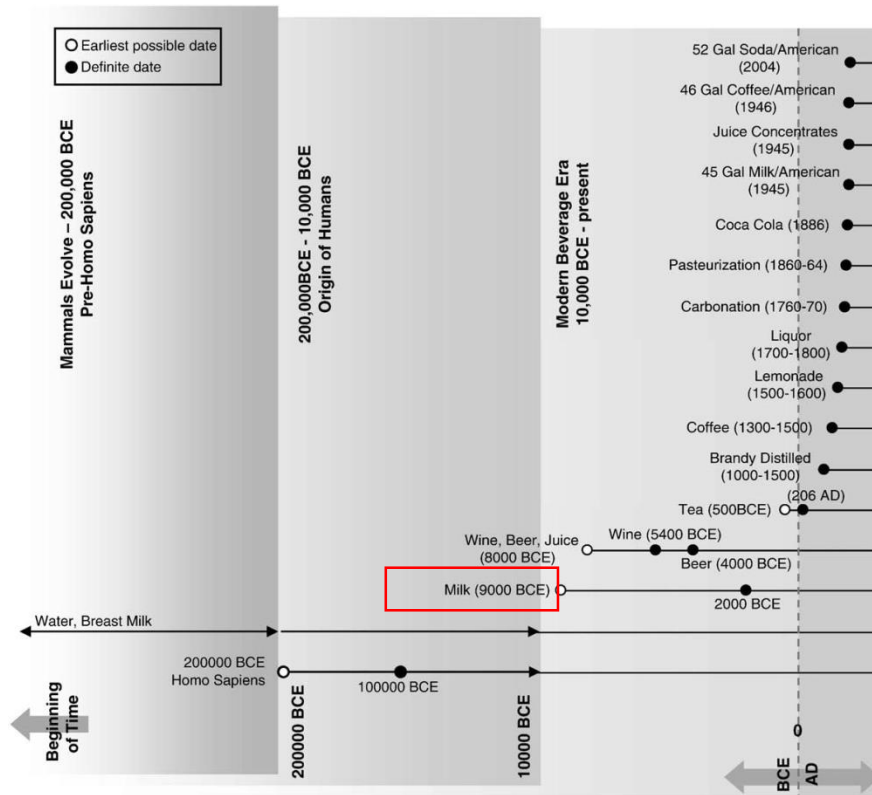


Загальний вміст  
сухих речовин

130 g/l (щільність при 15°C ± 1.030)



# Коли молоко було частиною дієти людини?



**SCIENTIFIC REPORTS**

**OPEN** Direct evidence of milk consumption from ancient human dental calculus

**SUBJECT AREAS:**  
 PROTEOMICS  
 BIOMARKERS  
 ZOOLOGY  
 ARCHAEOLOGY

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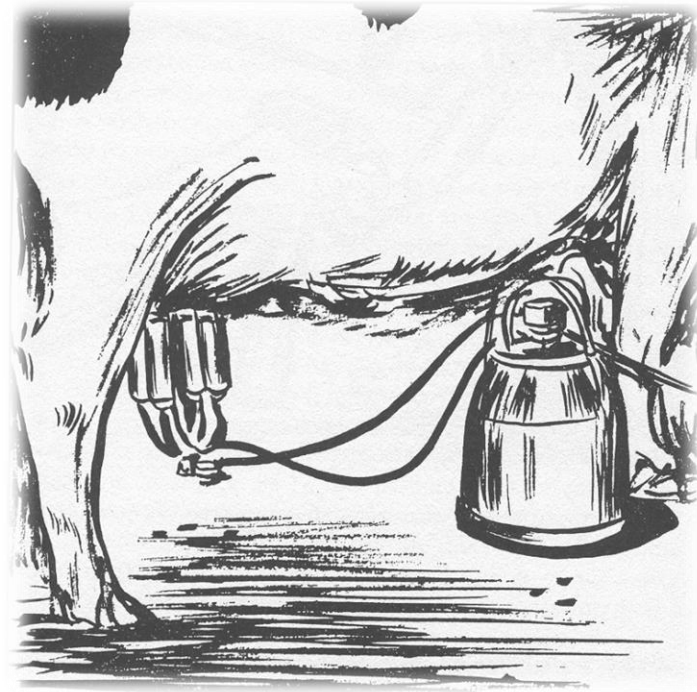
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Fig. in "Patterns of beverage use across the lifecycle", Barry M. Popkin (2010). *Physiology & Behaviour* 100 (4-9)



# В останні роки: дебати про сире молоко

«Сире молоко – молоко, вироблене шляхом секреції молочних залоз сільськогосподарських тварин, яке не зазнало теплового впливу вище 40 °C або не пройшло жодної обробки з еквівалентними наслідками»



# Здоров'я людини: чи безпечно пити сире молоко?

The screenshot shows a blog post on the website 'nourishing the planet'. The page features a navigation menu with links for 'ABOUT US', 'BLOG', 'RESEARCH', 'PRESS', 'EVENTS', and 'CONTACT'. The main article is titled 'The Raw Milk Debate' and is attributed to Keshia Pendigast. The text discusses a study from the CDC and the demand for raw milk in the US. It includes a map titled 'RAW MILK NATION: State-by-State Review of Raw Milk Laws' which shows various regulations across the United States. The article also mentions that in 1948 Michigan was the first state to mandate pasteurization and that raw milk consumption is restricted to farm owners only. A quote from John Partridge, a Dairy Food Extension Specialist at Michigan State University, explains that pasteurized milk is treated to destroy heat-resistant pathogens like E. coli and salmonella. The article concludes by noting that pasteurization reduces nutritional value, such as Vitamin C and Beta-lacto globulin, and that many people who consume raw milk do so because they believe it is healthier.

**RAW MILK NATION**  
State-by-State Review of Raw Milk Laws

The legal status of raw milk around the country. (Photo credit: Farm to Consumer Legal Defense Fund)

„... сире молоко і продукти його переробки в **150 разів частіше, ніж пастеризовані продукти, призводять до захворювань у споживачів.** Проте, більше 10 мільйонів американців вимагають доступу і вибору споживати непастеризоване, сире молоко ...“



# Здоров'я людини: чи безпечно пити сире молоко?

## Increased Outbreaks Associated with Nonpasteurized Milk, United States, 2007–2012

Elisabeth A. Mungai, Casey Barton Behravesh, and L. Hannah Gould

The number of US outbreaks caused by nonpasteurized milk increased from 30 during 2007–2009 to 51 during 2010–2012. Most outbreaks were caused by *Campylobacter* spp. (77%) and by nonpasteurized milk purchased from states in which nonpasteurized milk sale was legal (81%). Regulations to prevent distribution of nonpasteurized milk should be enforced.

Pasteurization is an effective way to improve milk safety; however, in the United States, illness related to consumption of nonpasteurized milk continues to be a public health problem. The first statewide requirements that dairy products be pasteurized were enacted in Michigan in 1948 (1). In 1987, the US Food and Drug Administration banned the interstate sale or distribution of nonpasteurized milk. However, the laws regulating intrastate sales are set by each state (2). Regulations for intrastate sales of nonpasteurized milk vary from complete bans to permitting sales from farms or retail outlets (2). Even in states in which sale of nonpasteurized milk is illegal, milk can often be obtained through other means. For example, some states allow cow-share or herd-share agreements, in which buyers pay farmers a fee for the care of a cow in exchange for a percentage of the milk produced (3,4).

Consumption of nonpasteurized milk has been associated with serious illnesses caused by several pathogens, including *Campylobacter* spp., Shiga toxin-producing *Escherichia coli*, and *Salmonella enterica* serotype Typhimurium (3,4). Despite the health risks associated with consuming nonpasteurized milk, the demand for nonpasteurized milk has increased (3,5,6). Recently, many state legislatures have considered relaxing restrictions on the sale of nonpasteurized milk (2,6). We report that the number of outbreaks associated with nonpasteurized milk increased from 2007 through 2012.

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### The Study


A foodborne disease outbreak is defined as the occurrence of  $\geq 2$  cases of a similar illness resulting from ingestion of a common food. State and local health departments voluntarily report outbreaks to the Foodborne Disease Outbreak Surveillance System of the Centers for Disease Control and Prevention through a standard web-based form (<http://www.cdc.gov/nors>). We reviewed outbreaks reported during 2007–2012 in which the food vehicle was nonpasteurized milk. Outbreaks attributed to consumption of other dairy products made with nonpasteurized milk, such as cheese, were excluded. We analyzed outbreak frequency, number of illnesses, outcomes (hospitalization, death), pathogens, and age groups of patients. Data on the legal status of nonpasteurized milk sales in each state were obtained from the National Association of State Departments of Agriculture (7–9) and an online search of state regulations. The sources from which nonpasteurized milk was obtained or purchased were categorized according to the description from the state outbreak reports, when available.

During 2007–2012, a total of 81 outbreaks associated with nonpasteurized milk were reported from 26 states. These outbreaks resulted in 979 illnesses and 73 hospitalizations. No deaths were reported. The causative agent was reported for all outbreaks. Of the 78 outbreaks with a single etiologic agent, *Campylobacter* spp. was the most common pathogen, causing 62 (81%) outbreaks, followed by Shiga toxin-producing *E. coli* (13 [17%]), *Salmonella enterica* serotype Typhimurium (2 [3%]), and *Coxiella burnetii* (1[1%]) (Figure 1). Three outbreaks were caused by multiple pathogens (Figure 1). The number of outbreaks increased from 30 during 2007–2009 to 51 during 2010–2012. During 2007–2009, outbreaks associated with nonpasteurized milk accounted for  $\approx 2\%$  of outbreaks with an implicated food; during 2010–2012, this percentage increased to 5%. The number of outbreaks of *Campylobacter* spp. infection also increased, from 22 during 2007–2009 to 40 during 2010–2012 (Figure 1).

Information about the age of patients was available for 78 outbreaks (Figure 2). For 59% of outbreaks, at least 1 patient  $< 5$  years of age was involved (Figure 2), and 38% of illnesses caused by *Salmonella* and 28% of illnesses caused by Shiga toxin-producing *E. coli* were in children 1–4 years of age (Figure 2).

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MYS8, METV, MOVIES, ESTRELLA

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By KCRA Staff

### Salmonella forces recall of raw milk from Fresno Co. company

Bacteria detected in Organic Pastures Dairy raw dairy products

UPDATED 4:48 PM PDT May 23, 2016

Text Size: A A A



File Photo KCRA

FRESNO COUNTY, Calif. (KCRA) — Raw milk and cream produced by a Fresno County-based dairy company were recalled Monday due to salmonella, the California Department of Food and Agriculture said.



# Споживання сирого молока: наука чи релігія?

European Food Safety Authority

EFSA Journal 2015;13(1):3940

## SCIENTIFIC OPINION

### Scientific Opinion on the public health risks related to the consumption of raw drinking milk<sup>1</sup>

EFSA Panel on Biological Hazards (BIOHAZ)<sup>2,3</sup>

European Food Safety Authority (EFSA), Parma, Italy

#### ABSTRACT

Raw drinking milk (RDM) has a diverse microbial flora which can include pathogens transmissible to humans. The main microbiological hazards associated with RDM from cows, sheep and goats, horses and donkeys and camels were identified using a decision tree approach. This considered evidence of milk-borne infection and the hazard being present in the European Union (EU), the impact of the hazard on human health and whether there was evidence for RDM as an important risk factor in the EU. The main hazards were *Campylobacter* spp., *Salmonella* spp., shigatoxin-producing *Escherichia coli* (STEC), *Brucella melitensis*, *Mycobacterium bovis* and tick-borne encephalitis virus, and there are clear links between drinking raw milk and human illness associated with these hazards. A quantitative microbiological risk assessment for these hazards could not be undertaken because country and EU-wide data are limited. Antimicrobial resistance has been reported in several EU countries in some of the main bacterial hazards isolated from raw milk or associated equipment and may be significant for public health. Sale of RDM through vending machines is permitted in some EU countries, although consumers purchasing such milk are usually instructed to boil the milk before consumption, which would eliminate microbiological risks. With respect to internet sales of RDM, there is a need for microbiological, temperature and storage time data to assess the impact of this distribution route. Intrinsic contamination of RDM with pathogens can arise from animals with systemic infection as well as from localised infections such as mastitis. Extrinsic contamination can arise from faecal contamination and from the wider farm environment. It was not possible to rank control options as no single step could be identified which would significantly reduce risk relative to a baseline of expected good practice, although potential for an increase in risk was also noted. Improved risk communication to consumers is recommended.

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#### KEY WORDS

raw milk, food-borne, pathogen, public health, antimicrobial resistance, vending machine, control options

<sup>1</sup> On request from EFSA, Question No EFSA-Q-2013-01026, adopted on 4 December 2014.

<sup>2</sup> Panel members: Olivier Androletti, Dorte Lau Baggesen, Declan Bolton, Patrick Butaye, Paul Cook, Robert Davies, Pablo S. Fernández Escámez, John Griffin, Tine Hald, Arie Havelaar, Kostas Koutsoumanis, Roland Lindqvist, James McLauchlin, Truls Nesbakken, Miguel Prieto Maradona, Antonia Ricci, Giuseppe Ru, Moez Sanaa, Marion Simmons, John Sofos and John Threlfall. Correspondence: biohaz@efsa.europa.eu

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## Журнал Європейського Органу з Безпечності харчових продуктів 2015; 13 (1):3940

i. Основні небезпеки: *Campylobacter* spp., *Salmonella* spp., shigatoxin-producing *Escherichia coli* (STEC), *Brucella melitensis*, *Mycobacterium bovis* і вірус кліщового енцефаліту

ii. «Є чіткий зв'язок між вживанням сирого молока і людськими хворобами»

iii. «Кількісна оцінка мікробіологічного ризику для цих небезпек не можуть бути використані, оскільки дані по країнам і ЄС є обмеженими»

iv. «Рекомендується покращити сповіщення про ризику»







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