

Does Raw Milk Kill Pathogens?

Reexamining the Evidence

by Ted Beals, M.S., M.D.

Amanda Rose describes herself as a consumer and supporter of raw milk. She represented the “pro-raw milk view” at a symposium entitled “The Raw Milk Conundrum” sponsored by the American Veterinarian Medicine Association (AVMA) at their convention in Seattle, Washington, in July 2009. In her talk, she presented the results of an online survey she conducted, which asked a number of questions about consumer attitudes towards raw milk.

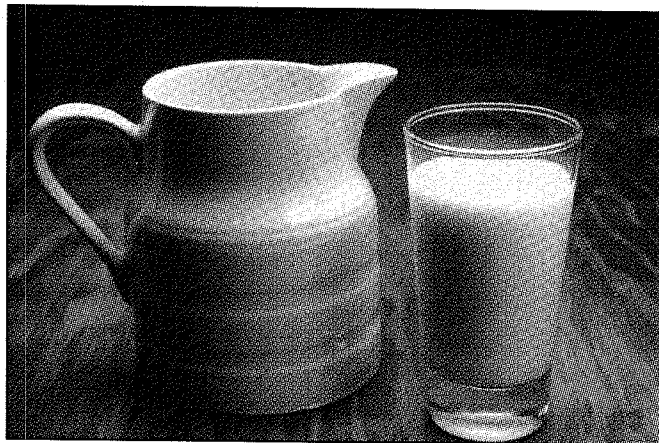
Shortly after the AVMA conference, Rose announced the publication of a position paper on raw milk entitled “Does Raw Milk Kill Pathogens? A Visual Analysis of the Research on Competitive Exclusion” (<http://rawmilk-whitepapers.com/assets/Does-raw-milk-kill-pathogens-12.pdf>). In it she describes the notion that raw milk is a better pathogen fighter than pasteurized milk as an “urban legend.” She concludes: “The evidence suggests that we really cannot count on raw milk killing enough pathogens to ensure its safety.”

I do not disagree that milk, like all foods, can be contaminated with disease-causing microorganisms, but the inquiring public needs accurate and objective information. The opponents of raw milk have learned how best to scare people. Rose claims to provide balanced information, but this position paper is far from balanced; it is specifically styled to scare, not inform, the public. The best she has to say in favor of raw milk is a back-handed compliment — “the pleasure of consuming the food.” Saying that she drinks raw milk and might choose contaminated raw milk over contaminated commercial processed milk is not a balanced statement,

nor one that provides consumers with the information they need to make informed choices about raw milk.

SCIENTIFIC PAPERS

In her position paper, Rose focuses on seven scientific papers along with a document from the Food and Drug Administration, information from a private lab’s test results and unpublished preliminary information. A lot more on this subject can be found in the scientific



literature, but I will focus on the reports that Rose cites in her paper.

Four of the papers look at what happens to pathogens when inoculated into milk. Rose concludes that the weight of the evidence indicates that the pathogens are not killed, or are not adequately killed, to make the milk safe. She fails to inform her readers that in each of these papers, the results and conclusions of the authors is that the inoculated pathogens are killed.

Rose first discusses “Prevalence and Survival of *Campylobacter jejuni* in Unpasteurized Milk” by Michael P. Doyle and Debra J. Roman (*Applied and Environmental Microbiology*, November 1982, 44 (5):1154-1158).

The authors inoculated raw milk with eight different strains of *Campylobacter jejuni*. Only three of these strains were from human sources (a fact Rose omits from her report). All strains do show reduction in pathogens with time. The only one without a steep decline tracks a nonhuman strain.

In her paper, Rose deemphasizes the extensive and dramatic results factually depicted by Doyle and Roman. That’s because the data she uses are from another experiment, reported in the same paper, which documents the fact that although the inoculated strains were dying, the generic bacteria already present in the raw milk were just as dramatically multiplying, increasing to as many as 800 million bacteria over the course of the experiment.

In another cited paper, researchers Massa, Goffredo, Altieri and Natola inoculated seven different strains of *E. coli* 0157:H7 into fresh unprocessed whole milk to determine their fate after days of storage (*Letters in Applied Microbiology*, 28 (1):89-92). Like Doyle and Roman, they spiked the milk with extraordinarily high numbers of each pathogen (1,000,000 per ml — Doyle and Roman used 10,000,000 per ml). Even with these huge numbers of pathogens, the *E. coli* 0157:H7 strains failed to grow and died off gradually. Actually, the purpose of this research was not to determine whether the pathogens were being killed, but whether it was acceptable to store milk at 8 C (46 F) rather than the standard 5 C (41 F). The authors conclude that the colder temperature should be used as the standard.

In the third paper, researchers Pitt, Harden and Hull (*Australian Journal of*

HEALTH & HEALING NEWS

Tick Spit vs. Tumors

A common South American tick (*Amblyomma cajennense*) has anticoagulant properties in its saliva that enable the insect to keep gorging itself on its host. Ana Marisa Chudzinski-Tavassi of the Instituto Butantan in Sao Paulo, Brazil, was investigating those properties when she noticed that one of the proteins shared some characteristics with a common anticoagulant that has been shown to interfere with cell growth. She began testing the protein in conjunction with cancerous cell cultures, and the results exceeded all expectations. Using tumors in rats, a 14-day treatment with tick saliva halted tumor growth, and a 42-day treatment eliminated it altogether. "To our surprise, it didn't kill normal cells... but it did kill the ~~tumorous cells.~~" She has applied for a patent on the tick protein and is presenting her team's discovery in medical journals and conferences around the world. To discover this is one thing. To turn it into a medicine is a whole other thing entirely, she commented.

Autism on the Rise

At the end of 2006, one of every 110 American children had an autism disorder diagnosed by age 8 — one in 70 boys and one in 315 girls. In 1989 the ratio was 1 of every 5,000 children. Health specialists are wondering how much of this staggering increase is due to new methods being used to identify the disorder, and how much may be due to changes in environment.

Mushrooms & Vitamin D

Vitamin D is a fat-soluble vitamin that we must acquire by exposure to sunlight or from foods containing it. Vitamin D is known to be a powerful immune enhancer, and mushrooms are the only vegetable kingdom source of vitamin D. Recently, researchers discovered that mushrooms convert ultraviolet light into vitamin D just like the human body does. Mushrooms are rich in the sterol ergosterol, a precursor of vitamin D, and when exposed to light, ergosterol is converted to ergocalciferol, also known as vitamin D₂. All mushrooms contain vitamin D₂, but some at significantly higher levels than others due to growing conditions and light exposure. Most commercial cultivated mushrooms grow in total darkness on substrate treated with chemical fungicides and are exposed to light only a short time at harvest. These conditions diminish their vitamin D production. Mushrooms grown outdoors or exposed to UV light are much higher in vitamin D, and ~~dried mushrooms are higher than fresh.~~ Over 75 percent of the mushrooms consumed in the United States are the button or white mushroom, which contains less than 1 percent daily value of vitamin D per serving. (Source: Edenews, www.edenfoods.com)

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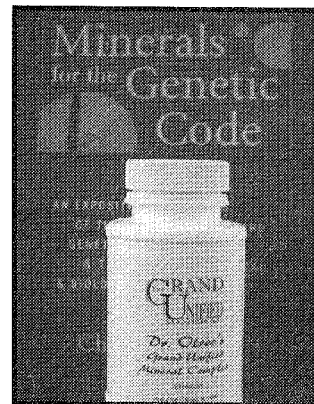
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