

**International Association for Food Protection (IAFP)  
Position Statement**

***Milk Pasteurization  
and the Consumption of Raw Milk***

Prepared by Ronald H. Schmidt<sup>1</sup> and P. Michael Davidson<sup>2</sup>  
On behalf of the IAFP Dairy Quality and Safety Professional Development Group (PDG)  
and the 3-A Committee on Sanitary Procedures

**Milk Pasteurization**

Federal regulation of milk pasteurization and sanitation in dairy processing plants has been in existence in the United States for nearly 100 years (1). This comprehensive program involves application of sanitary procedures throughout production, handling, pasteurization, and distribution. As a result of regulations under the US Public Health Service and a variety of state and local regulatory agencies, the incidence of milk-borne illness in the US has decreased from approximately 25 per cent of all reported foodborne illness outbreaks in 1938 **to less than 1 per cent of reported outbreaks today** (1). Similar trends have been observed internationally with mandatory milk pasteurization having a significant positive impact on public health and safety in many countries.

**Risks of Raw Milk Consumption**

Pathogenic or disease-causing microorganisms may be shed into milk even by healthy cows, goats, and sheep (2). Further, milk handling procedures on the dairy farms may introduce pathogenic microorganisms into the milk. Milk is an excellent growth medium and when stored improperly will allow the rapid proliferation of pathogens. A recent survey by Jayarao et al. (3) identified several foodborne pathogenic bacteria, including *Campylobacter jejuni*, Shigatoxin producing *Escherichia coli*, *Listeria monocytogenes*, *Salmonella* serovars, and *Yersinia enterocolitica* associated with raw milk. This is but one of several studies demonstrating that pathogenic bacteria are common in raw milk (4,5). In addition, unpasteurized milk is a vehicle for transmission of other pathogenic microorganisms (e.g. *Brucella*, *Mycobacterium*) (6,7). While these pathogens can affect the health of anyone who drinks raw milk, they are especially dangerous to high risk consumers (e.g., pregnant women, children, the elderly, and people with weakened immune systems).

The consumption of raw milk has been associated with numerous foodborne illness cases and outbreaks and has resulted in product recalls (8,9,10). According to the survey report by the National Association of State Departments of Agriculture (NASDA) in

<sup>1</sup>Food Science and Human Nutrition Department, University of Florida, Gainesville, FL

<sup>2</sup>Food Science and Technology Department, University of Tennessee, Knoxville, TN

2004 (11), 29 states have recorded illness outbreaks traceable to raw milk consumption. Further, in 2005-2006, more than 10 outbreaks caused by the consumption of raw milk or raw milk cheese were reported by the Food and Drug Administration (FDA) (12-15).

Pasteurization assures the destruction of pathogenic microorganisms that may be present in raw milk. Since 1987, US FDA regulations (16) have required mandatory pasteurization of packaged milk and milk products for human consumption in interstate commerce. Milk pasteurization as a public health control measure is endorsed by the Centers for Disease Control and Prevention (CDC) (8) and the U. S. Department of Agriculture (USDA) Agricultural Marketing Service (17). In spite of this, the majority of state regulations currently allow raw milk sales with certain limitations and legislative changes have been or are being proposed in many other states to allow raw milk sales.

As a public health control procedure, the milk pasteurization process (or equivalent) has been recognized throughout the world. According to the World Health Organization (WHO) (18): *“Pasteurization of milk is almost universally accepted as an essential public health technology that enjoys the confidence and support of the consuming public”*. In Canada, federal and many provincial regulations prohibit the sale of raw milk (18). However, direct sale of unpasteurized milk to the consumer is allowed in many regions of the world, with certain restrictions and limitations.

A variety of regulatory, educational and public health authorities have issued position statements, fact sheets, and related documents which warn against the risks of raw milk consumption, including:

- American Veterinary Medical Association (AVMA) (1);
- Association of Food & Drug Officials (AFDO) (20);
- Health Canada (21,22);
- NASDA (11);
- National Association of State Public Health Veterinarians (NASPHV) (23);
- National Conference on Interstate Milk Shipments (NCIMS) program (24);
- State regulatory agencies (25,26); and
- University cooperative extension programs (27-30).

In recent years, organizations (31,32) have emerged promoting raw milk consumption and making unsubstantiated and false claims regarding the health benefits achieved by drinking raw milk and the “toxic effects of drinking pasteurized milk”. Further, they make unsupported statements that raw milk sales will “save the family farm.” These organizations have sought to overturn state regulations prohibiting the sale of raw milk. This movement has had some support from some individual state cooperative extension specialists who are promoting direct farm sales under sustainable and value added agriculture programs.

As the premier professional association for microbiological safety of foods, the International Association for Food Protection (IAFP), the IAFP Dairy Quality and Safety Professional Development Group, and the 3-A Committee on Sanitary Procedures,

<sup>1</sup>Food Science and Human Nutrition Department, University of Florida, Gainesville, FL

<sup>2</sup>Food Science and Technology Department, University of Tennessee, Knoxville, TN

commend the success of the time honored and effective, regulatory program for milk pasteurization and sanitation through the NCIMS (24), a cooperative federal/state regulatory program. We hereby join the numerous other associations and agencies in warning consumers regarding the risk of raw milk consumption. It is overwhelmingly clear from scientific and epidemiological evidence that the risks of raw milk consumption far outweigh any perceived benefits. Therefore, it is the position of IAFFP that:

- consumption of unpasteurized milk will lead to increased risk of serious milkborne illness and even death, especially among at risk populations; and
- allowing the sale of unpasteurized milk for direct consumption, as a public health policy, would place many consumers at risk and should be prohibited.

## References

1. Food and Drug Administration Center for Food Safety and Applied Nutrition. 2004. *Grade "A" Pasteurized Milk Ordinance, 2003 Revision*. <http://www.cfsan.fda.gov/~ear/pmo03toc.html>
2. American Veterinary Medical Association (AVMA). 2005. *Position statement – milk quality and pasteurization*. Accessed June 29, 2007. <http://www.avma.org/issues/policy/milk.asp>
3. Jayarao, B. M., S. C. Donaldson, B. A. Straley, A.A. Sawant, N. V. Hegde, N. V., and J. L. Brown. 2006. *A survey of foodborne pathogens in bulk tank milk and raw milk consumption among farm families in Pennsylvania*. J. Dairy Sci. 89:2451-2458.
4. Rohrbach, B.W., F.A. Draughon, P.M. Davidson and S.P. Oliver. 1992. *Prevalence of Listeria monocytogenes, Campylobacter jejuni, Yersinia enterocolitica, and Salmonella in bulk tank milk: risk factors and risk of human exposure*. J. Food Prot. 55:93-97.
5. Van Kessel, J.S., J.S. Karns, and L. Gorski. 2004. *Prevalence of Salmonellae, Listeria monocytogenes, and fecal coliforms in bulk tank milk on US Dairies*. J. Dairy Sci. 87:2822-2830.
6. Food and Drug Administration Center for Food Safety and Applied Nutrition. 2003. *Sale/consumption of raw milk-position statement (M-I-03-4)*. Accessed June 29, 2007. <http://www.cfsan.fda.gov/~ear/mi-03-4.html>
7. Food and Drug Administration Center for Food Safety and Applied Nutrition, 2007. *Testimony before the house and government operations committee*, J. Sheehan, Dir, Division of Plant and Dairy Food Safety, <http://www.cfsan.fda.gov/~acrobat/rawmilk3.pdf>
8. Center for Disease Control and Prevention (CDC). [www.cdc.gov](http://www.cdc.gov)
9. Headrick M, S. Korangy, N. Bean, F. Angulo, S. Altekruse, M. Potter, and K. Klontz. 1998. *The epidemiology of raw milk-associated foodborne disease outbreaks reported in the United States, 1973-1992*. Am J Pub Health 88 (8):1219-1221.

- 10 Boor, K. J. and R. N. Zadoks, 2003. *Dairy foods involved with few disease outbreaks*. Accessed June 29, 2007.  
[http://qmps.vet.cornell.edu/articles/Dec\\_03\\_Pasteurize.pdf](http://qmps.vet.cornell.edu/articles/Dec_03_Pasteurize.pdf)
- 11 National Association of State Departments of Agriculture (NASDA). *NASDA Policy Statement*. Accessed June 29, 2007.  
<http://www2.nasda.org/NR/exeres/480DACB7-AC68-4980-AB3C-3F50BCEC252F.htm>
- 12 Food and Drug Administration Center for Food Safety and Applied Nutrition 2005. *On the safety of raw milk (with a word about pasteurization)*. Presented at National Conference on Interstate Milk Shipments, C. Leonard, Accessed June 29, 2007,  
<http://www.cfsan.fda.gov/~ear/milksafe.html>.
- 13 Food and Drug Administration Center for Food Safety and Applied Nutrition. 2006. *The dangers of raw milk, unpasteurized milk can pose a serious health risk*  
<http://www.cfsan.fda.gov/~dms/rawmilk.html>
- 14 Food and Drug Administration Center for Food Safety and Applied Nutrition, 2007. *FDA and CDC remind consumers of the dangers of drinking raw milk*. Accessed June 29, 2007, <http://www.fda.gov/bbs/topics/NEWS/2007/NEW01576.html>
- 15 Food and Drug Administration Center for Food Safety and Applied Nutrition, 2007. *Raw milk – associated public health risks*. Accessed June 29, 2007.  
<http://www.cfsan.fda.gov/~dms/rawmilk2.html>
- 16 Food and Drug Administration Center for Food Safety and Applied Nutrition. 1987. *Requirements affecting raw milk for human consumption in interstate commerce*, 21 CFR1240; Federal Register/Vol. 52. No. 153/August 10, 1987.
- 17 U. S. Department of Agriculture (USDA) Agricultural Marketing Service (AMS).  
[www.usda.ams.gov](http://www.usda.ams.gov).
- 18 World Health Organization. *Populations at risk*.  
[http://www.who.int/foodsafety/publications/general/en/fos\\_brochure1999\\_2en.pdf](http://www.who.int/foodsafety/publications/general/en/fos_brochure1999_2en.pdf)
- 19 Department of Justice Canada. *Canada Agricultural Products Act - Dairy Products Regulations (SOR/79-840)*. <http://laws.justice.gc.ca/en/C-0.4/SOR-79-840/index.html>.
- 20 Association of Food & Drug Officials (AFDO). 2006. *Position statement of the Association of Food & Drug Officials on raw milk*. Accessed June 29, 2007.  
<http://www.afdo.org/afdo/position/PosStmt-2006-RawMilk.cfm>.
- 21 Health Canada. 2006. *Statement from Health Canada about drinking raw milk*.  
[http://www.hc-sc.gc.ca/fn-an/securit/facts-faits/rawmilk-laitcru\\_e.html](http://www.hc-sc.gc.ca/fn-an/securit/facts-faits/rawmilk-laitcru_e.html)
- 22 Health Canada. 2006. *Health Canada reminds Canadians about the risks of drinking raw milk*. [http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/2006/2006\\_65\\_e.html](http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/2006/2006_65_e.html)
- 23 National Association of State Public Health Veterinarians (NASPHV).  
<http://nasphv.org/>
- 24 National Conference on Interstate Milk Shipments. 2005. NCIMS Resolution 10.  
<http://www.ncims.org/>
- 25 Colorado Department of Public Health & Environment. 2003. *Most frequently asked milk and dairy questions*. Accessed June 29, 2007.  
[http://www.ceph.state.co.us/cp/Dairy/faq\\_dairy.html](http://www.ceph.state.co.us/cp/Dairy/faq_dairy.html)

- 26 Washington State Department of Agriculture. 2006. *The truth about raw milk sales*. Accessed June 29, 2007.  
<http://agr.wa.gov/Foodanimal/Dairy/docs/RawMilkTruth.pdf>
- 27 Alvarez, V. B. and F. Parada-Rabell. 2006. *Health benefits, risks, and regulations of raw and pasteurized milk*. Ohio State University Extension Fact Sheet FSE 3-05.  
<http://ohioline.osu.edu/fse-fact/003.html>
- 28 Anonymous. 1998. *Why pasteurize? The dangers of consuming raw milk*. Cornell University, College of Agriculture and Life Sciences, Department of Food Science. Dairy Science Facts.
- 29 Anonymous. 2006. *Raw milk, why pasteurize?* 2006. Colorado State University Extension. Safe Food News - Winter 2006 - Vol 10 No.2
- 30 Hillers, V. 2003. *Drinking raw milk is risky even for dairy families*. Western Dairy News 1:4.
- 31 Weston A. Price Foundation. [www.realmilk.org](http://www.realmilk.org)
- 32 Natural Milk Coalition of Canada. [www.naturalmilk.org](http://www.naturalmilk.org).