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Policy Statement: Sale or Distribution of Raw Milk

According to the Centers for Disease Control and Prevention (CDC), unpasteurized milk is 150 times more likely to cause foodborne illness and results in 13 times more hospitalizations than illnesses involving pasteurized dairy products (CDC, 2014). The bacteria in raw milk can be especially dangerous to people with weakened immune systems, older adults, pregnant women, and children. CDC analysis found that foodborne illness from raw milk especially affects children and teenagers. Raw milk and products made from it (e.g., soft cheese, ice cream, yogurt) can pose severe health risks, including death (CDC, 2016a). The National Environmental Health Association (NEHA) recognizes the nutritional value of milk, as well as the scientific evidence that raw milk can transmit pathogenic bacteria to the consumer. NEHA further recognizes the scientific and public health evidence that pasteurization of milk is proven to be a sound method of preventing milk-borne disease.

NEHA specifically recommends the following:

- Legislation that requires pasteurization of all milk prior to sale or distribution to the final consumer, regardless if a fee is charged.
- Prevent arrangements such as cow shares, herd sharing, bartering, exchange, or any other action that would allow the consumer to obtain a portion of the production of raw, unpasteurized milk from a cow, sheep, or goat.
- The adoption of current best practices in food safety by state, local, tribal, territorial, and government agencies, as well as industry food safety professionals, to identify, eliminate, and/or mitigate potential food safety hazards inherent to their operations.
- Efforts to educate the consumer about the dangers inherent in consuming unpasteurized milk or products made from raw milk.

NEHA has long supported preventive measures to protect the safety of food for the public. NEHA acknowledges the importance of milk as a source of nutrition and is concerned about the safety of milk and milk products. NEHA's position regarding raw milk is consistent with sound, science-based, preventive public health measures.

Background

The Cornell University Department of Food Science has stated that milk is a natural food (Scott, 2002). Milk is nutrient rich and contributes high quality protein and essential vitamins and minerals, including calcium, to the diet (Scott, 2002). In its raw state, milk contains a number of bacteria, some of which might be pathogenic such as enterotoxigenic *Staphylococcus aureus*, *Campylobacter*, *E. coli*, *Listeria*, *Salmonella*, *Yersinia*, *Brucella*, and *Mycobacterium tuberculosis* (Headrick et al., 1998). These

bacteria are present in raw milk from all dairy animals, including cows, goats, and sheep. The process of pasteurization has been used for 100 years to destroy pathogenic bacteria that are present in raw milk (Schmidt & Davidson, 2008). The U.S. Department of Agriculture, Food and Drug Administration (FDA, 2003), World Health Organization (1988), and CDC endorse the process of pasteurizing milk as a public health control measure.

Several regulatory, educational, and public health organizations have issued position papers regarding the dangers associated with the consumption of raw milk. These include:

- American Academy of Pediatrics,
- American Medical Association,
- American Public Health Association,
- American Veterinary Medical Association,
- Association of Food and Drug Officials,
- Council of State and Territorial Epidemiologists,
- Food and Drug Administration,
- International Association for Food Protection,
- National Association of State Public Health Veterinarians, and
- United States Animal Health Association.

Justification

Milk-borne disease has been reduced greatly through the use of pasteurization. Prior to 1938, milk-borne illness represented 25% of all foodborne illness outbreaks (Weisbecker, 2007). As a result of efforts by the U.S. Public Health Service and individual states requiring the mandatory use of pasteurization, milk-borne illness represents less than 1% of foodborne illness outbreaks today (CDC, 2016b). Cases of illness caused by the consumption of raw, unpasteurized milk, however, continue to occur (Headrick et al., 1998). From 2006–2015 (the most recent year available), CDC has recorded outbreaks associated with raw milk consumption every year except for 2009 and 2013 (CDC, 2016a). Below is a sample of recent outbreaks.

- **January 2012:** Direct sales from a dairy farm in Pennsylvania led to 148 illnesses in Pennsylvania, Maryland, New Jersey, and West Virginia (Longenberger et al, 2013).
- **February 2012:** Twenty-two cases of *Campylobacter jejuni* were identified across nine counties in California. All cases reported illness and all had consumed raw milk from a designated farm. The age of the individuals from the reported cases ranged from 1–66 years (California Department of Public Health, 2013).

- **April 2012:** A herd share in Oregon led to 21 people becoming ill (19 cases of *E. coli*, 1 case of *Campylobacter*, and 1 case of *Cryptosporidium*). Four children were hospitalized and one had to receive a kidney transplant (Marler, 2012; Marler Clark, 2017).
- **May 2014:** Ninety-nine people became ill in seven counties in north Utah that reported cases of *Campylobacter jejuni* from the consumption of raw milk from a licensed dairy. Ten people were hospitalized and one person died. Eleven of the cases were in children under the age of five years (Davis et al., 2016).
- **2015:** CDC's Foodborne Outbreak Online Database (FOOD Tool) identified 11 outbreaks of foodborne illness from 2014–2015 that implicated unpasteurized milk. The database also noted that in just one year, these outbreaks accounted for 41 illnesses, seven hospitalizations, and one death (CDC, 2016a).

Moreover, the occurrence of outbreaks due to raw milk has been found to positively correlate with the legal status of raw milk sales within a state. In a review of raw milk-associated outbreaks reported to CDC during 1972–1992, Headrick and coauthors (1998) found that the rate of raw milk-associated outbreaks was higher in states in which the sale of raw milk was legal. The authors concluded that banning the intrastate sale of raw milk could reduce the number of milk-associated outbreaks. This association was revalidated in an examination of outbreaks occurring between 2007–2012 (Mungai, Behravesh, & Gould, 2015).

Recently, advocates for the consumption of natural foods have approached legislators to allow the sale of raw milk to consumers. They have contended that the pasteurization process destroys the nutritional benefits of milk. In some instances, these advocates are encouraging the adoption of legislation that would allow individuals to purchase a portion of the production of a milk cow through an arrangement known as a cow share.

John Sheehan, director of FDA's Division of Plant and Dairy Food Safety, stated that research shows that there is no significant difference in the nutritional value of pasteurized and unpasteurized milk (Sheehan, 2007). He indicated that casein, the major family of milk proteins, is largely unaffected by pasteurization and any modification in whey protein that might occur is barely perceptible (Bren, 2004). Sheehan (2007) further stated the following:

Raw milk is inherently dangerous and should not be consumed. Raw milk continues to be a source of foodborne illness and even a cause of death within the United States. ... Pasteurization destroys pathogens and most other vegetative microbes which might be expected and have been shown to be present in milk. (p. 14)

References

- Bren, L. (2004). Got milk? Make sure it's pasteurized. *FDA Consumer*, 38(5), 29–31.
- California Department of Public Health. (2013). *Environmental investigation of a Campylobacter jejuni outbreak in 2012 associated with Claravale Farms raw whole milk: Final report*. Sacramento, CA: Author. Retrieved from <https://www.cdph.ca.gov/pubsforms/Documents/fdbEIRCV2013.pdf>
- Centers for Disease Control and Prevention. (2014). *Nonpasteurized disease outbreaks, 1993–2006*. Retrieved from <https://www.cdc.gov/foodsafety/rawmilk/nonpasteurized-outbreaks.html>

- Centers for Disease Control and Prevention. (2016a). *Foodborne outbreak online database (FOOD tool)*. Retrieved from <http://www.cdc.gov/foodborneoutbreaks>
- Centers for Disease Control and Prevention. (2016b). *Raw milk questions and answers*. Retrieved from <https://www.cdc.gov/foodsafety/rawmilk/raw-milk-questions-and-answers.html>
- Davis, K.R., Dunn, A.C., Burnett, C., McCullough, L., Dimond, M., Wagner, J., . . . Nakashima, A.K. (2016). *Campylobacter jejuni* infections associated with raw milk consumption—Utah, 2014. *Morbidity and Mortality Weekly Report*, 65(12), 301–305.
- Food and Drug Administration. (2003). *M-I-03-4: Sale/consumption of raw milk-Position statement*. Retrieved from <https://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/milk/ucm079103.htm>
- Headrick, M.L., Korangy, S., Bean, N.H., Angulo, F.J., Altekruise, S.F., Potter, M.E., & Klontz, K.C. (1998). The epidemiology of raw milk-associated foodborne disease outbreaks reported in the United States, 1973 through 1992. *American Journal of Public Health*, 88(8), 1219–1221.
- Longenberger, A.H., Palumbo, A.J., Chu, A.K., Moll, M.E., Weltman, A., & Ostroff, S.M. (2013). *Campylobacter jejuni* infections associated with unpasteurized milk—Multiple states, 2012. *Clinical Infectious Diseases*, 57(2), 263–266.
- Marler, B. (2012, April 20). *Summary of the Foundation Farm raw milk-associated E. coli O157:H7 outbreak* (Web log post). Retrieved from <http://www.marlerblog.com/case-news/summary-of-the-foundation-farm-raw-milk-associated-e-coli-o157h7-outbreak/#.WQFc3rmGOuk>
- Marler Clark. (2017). *Foundation Farm raw milk E. coli outbreak*. Retrieved from http://www.about-ecoli.com/ecoli_outbreaks/view/cow-share-e.-coli-outbreak-oregon/
- Mungai, E.A., Behraves, C., & Gould, L. (2015). Increased outbreaks associated with nonpasteurized milk, United States, 2007–2012. *Emerging Infectious Diseases*, 21(1), 119–122.
- Schmidt, R.H., & Davidson, P.M. (2008). International Association for Food Protection position paper: Milk pasteurization and the consumption of raw milk in the United States. *Food Protection Trends*, 28(1), 45–47.
- Scott, D.L. (2002). *Why pasteurize? The dangers of consuming raw milk* (Dairy Food Science Notes). Ithaca, NY: Cornell University Department of Food Science. Retrieved from https://foodsafety.foodscience.cornell.edu/sites/foodsafety.foodscience.cornell.edu/files/share_d/documents/CU-DFScience-Notes-Raw-Milk-Risks-for-Consumers-03-02.pdf
- Sheehan, J.F. (2007). *Testimony of John F. Sheehan, BSc (Dy), JD, director, Division of Plant and Dairy Food Safety, Office of Food Safety, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration before the Health and Government Operations Committee, Maryland House of Delegates, March 15, 2007*. Retrieved from <https://www.fda.gov/downloads/Food/FoodbornellnessContaminants/UCM185696.pdf>
- Weisbecker, A. (2007). A legal history of raw milk in the United States. *Journal of Environmental Health*, 69(8), 62–63.
- World Health Organization. (1988). *Food irradiation: A technique for preserving and improving the safety of food*. Geneva, Switzerland: Author. Retrieved from <http://apps.who.int/iris/handle/10665/38544>

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