



Slow Food[®] Ireland

Tuesday, 9th November 2010

Minister for Agriculture, Fisheries and Food
Agriculture House
Kildare Street
Dublin 2

Dear Minister Smith

Should the Government be considering changing the regulations on the production and sale of raw milk in Ireland we would like to emphasize that a significant lobby wish that the FSAI would ask the Department of Agriculture to draw up a protocol for best practice for the production and sale of unpasteurised milk to the 100,000 and Irish people who currently avail of it.

I understand the corporate memory of Tuberculosis and Brucellosis in the 1950's but today standards are very different and people deserve a choice. Other EU countries have found a solution to this dilemma and it would seem grossly unfair if Irish people were to be deprived of the opportunity to choose. In the US, the sale of raw milk is permitted in Arizona, California, Connecticut, Idaho, Maine, Pennsylvania, New Hampshire, South Carolina and Washington. There is a growing body of science which support the value of drinking raw milk for health and to help to immunise against asthma and eczema. * see references

I'd appreciate your attention to this matter.

Yours sincerely,

Darina Allen
Slow Food Councillor for Ireland



Slow Food[®] Ireland

10 Reasons to allow sales of Raw Milk

- **Freedom of choice:** Raw milk is ultimately a freedom-of-choice issue. It should be a fundamental right for people to obtain the foods they wish to eat, provided they are produced according to strict guidelines to ensure safety. On-farm and some retail sales of raw milk are permitted in Belgium, Denmark, France, Germany, Holland, Italy, Sweden and Switzerland where raw milk vending machines are becoming increasingly popular. In the USA retail sales of raw milk are allowed in 8 states (Arizona, California, Connecticut, Maine, Pennsylvania, New Mexico, South Carolina and Washington). On-farm sales of raw milk are allowed in about 28 states.
- **Increased demand:** There is a noticeable rise in the numbers of consumers seeking out raw milk, generally for health or taste reasons. The process of pasteurisation is usually linked to homogenisation. It is virtually impossible for consumers to buy non-homogenised milk apart from directly from the producers.
- **It is a safer product than it was in the past;** It is accepted that raw milk has the potential to transmit diseases including TB and Brucellosis as well as organisms such as salmonella, E coli and Campylobacter. However, since strict inspections and testing have been introduced, these risks have fallen substantially. **Compared to 30-50 years ago, dairy farmers today can take advantage of many advances that contribute to making it a safe product:**
 - **Managed rotational grazing, ensures healthy cows**
 - **Understanding of and effective testing for all zoonoses (diseases that cross-infect from animals to humans)**
 - **Understanding of how water-borne pathogens get into bulk milk and control measures. Effective cleaning systems.**
 - **Refrigerated bulk tanks**
 - **Refrigerated transportation**
 - **Easier and inexpensive milk testing techniques**
 - **Better educated and technically adept operators**

Current regulations in England and Wales specify the following criteria for raw milk being sold direct to the consumer:

- . Plate count at 30°C - < 20,000/mL
- . Coliforms - < 100/mL
- . Pathogens/toxins - not present in quantities to affect health of the consumer.



Slow Food® Ireland

- **Economic benefits;** Raw milk sales hold the potential for a rural revival. Every 1 euro earned on the farm generates 5-7 euro for the local community. The price is *not* subject to typical market fluctuations, but is generally based on factors within the farmers' control, such as the breed of cow and management of the herd. The farmer captures the full retail value. **If the farmer is making cheese, cream or butter, he can use the whey and skim milk as free food for pigs and hens in order to diversify and increase his income.**
- **Food safety;** A complete ban would encourage an 'underground' supply of raw milk to those that want it, with none of the recommended controls in place.
- **Protective components of unprocessed milk;** Raw milk contains numerous components that assist in:
 - Killing pathogens in the milk (lactoperoxidase, lactoferrin, leukocytes, macrophages, neutrophils, antibodies, medium chain fatty acids, lysozyme, B12 binding protein, bifidus factor, beneficial bacteria);¹
 - Preventing pathogens from being absorbed across the intestinal wall (polysaccharides, oligosaccharides, mucins, fibronectin, glycomacropetides, bifidus factor, beneficial bacteria);² and
 - Strengthening and modulating the immune system (lymphocytes, immunoglobulins, antibodies, hormones and growth factors).³
 - Note that breast milk is raw. The safety and health benefits of breast milk have been well documented.⁴

- **Asthma and Eczema**

Asthma is a crippling, even life-threatening condition. In the US over 5000 people die from asthma each year.

In the US, according to the CDC, asthma is the second most prevalent chronic condition among children, affecting at least 5 million.

Recently three studies have been carried out in Europe looking at farm (raw) milk as one of several factors that might protect children against allergies and asthma. All the studies were published in prestigious journals.

The first was published in The Lancet in 2001, involving 2,600 families, and researchers found that 'Long-term and early exposure to stables and (raw) farm milk induces a strong protective effect against development of asthma, hay fever and atopic sensitisation (rashes).'¹



Slow Food® Ireland

In the second, published in the Journal for Allergy and Clinical Immunology, 2006, researchers concluded that 'children who even infrequently drank raw milk had significantly less current exzema symptoms and a greater reduction in atopy (allergic hypersensitivity).'

The third study, called the PARSAVAL study, looked at almost 15,000 children aged 5 to 13. Researchers found that consumption of raw milk was the strongest factor in reducing the risk of asthma and allergies, a stronger factor than living on a farm or having a pet. These findings are published in Clinical and Experimental Allergy, 2007.

1. Riedler, J. et al. 2001. Exposure to farming in early life and development of asthma and allergy: a cross-sectional survey. Lancet 358:1129-33.

2. Perkin, M.R. and D.P. Strachan. 2006. Which aspects of the farming lifestyle explain the inverse association with childhood allergy? J Allergy Clin Immunol. 117(6):1374-8.

3. Perkin, M.R. 2007. Unpasteurized milk: health of hazard? Clinical and Experimental Allergy 37:627-630.

- **Loss of protective components due to pasteurisation;** Many of these anti-microbial and immune-enhancing components are greatly reduced in effectiveness by pasteurisation.⁵
- **Loss of nutrients due to pasteurisation;** ⁶

Vitamin A	Beta-lactoglobulin, a heat-sensitive protein in milk, increases intestinal absorption of vitamin A. Heat degrades vitamin A. ⁷
B Vitamins (incl. folate)	Significant percentages of Vitamins B6, B12, thiamin and folate are destroyed by heat treatment, although the specific percentages found vary from study to study. ⁸ In addition, the folacin-binding protein in raw milk is rendered ineffective during pasteurization and processing. ⁹
Vitamin C	Heating leads to a loss of Vitamin C in pasteurized milk. ¹⁰ "Without doubt, the explosive increase in infantile scurvy during the latter part of the 19 th century coincided with the advent of use of heated milks and proprietary foods. ... Hess [a pediatrician] was able to effect a cure for scurvy by providing raw milk or orange juice or potatoes." ¹¹
Vitamin D	Vitamin D is present in milk in protein-bound form, which may be lost during pasteurization. ¹²



Slow Food® Ireland

- **Health benefits of raw milk;** Raw milk is the only food that has built-in safety mechanisms and numerous components to create a healthy immune system. The FSA 00/05/04 review acknowledges that long-term consumers of raw milk may be immunologically privileged as a result of this consumption.

In early studies involving humans, raw milk was shown to be superior to pasteurized in protecting against infection, rickets, and TB; and children receiving raw milk had better growth than those receiving pasteurized milk.¹³

Several recent studies in Europe have found that drinking “farm” (raw) milk protects against asthma and allergies.¹⁵

Infants and premature babies on pasteurised human milk did not gain weight as quickly as those fed raw human milk; problems were attributed to pasteurization’s destruction of lipase.¹⁶ In another study, neonates given raw human milk had a markedly lower incidence of infection than those who received pasteurized human milk and formula.¹⁷

- **The best quality raw milk is from grass-fed cows;** We do not recommend the consumption of milk from dairy cattle that are housed indoors and fed grain meals. Under extreme conditions the multiple anti-microbial components of the raw milk may be overwhelmed.

References

- ¹ Shah, N.P. 2000. Effects of milk-derived bioactives: an overview. *British J of Nutrition* 84(Suppl. 1):S3-S10. Cross, M.L. and H.S. Gill. 2000. Immunomodulator properties of milk. *British J. of Nutrition* 84(Suppl. 1): S81-S89. Korhonen, H., P. Marnilla, and H.S. Gill. Milk Immunoglobulins and complement factors. *British J. of Nutrition* 84 (Suppl. 1): S75-S80. Arnold, D. et al. 2002. Antiadenovirus activity of milk proteins: lactoferrin prevents viral infection. *Antiviral Res.* 53:153-158. Dionysius, D.A. and J.M. Milne, 1997. Antibacterial peptides of bovine lactoferrin: purification and characterization. *Journal of Dairy Science* 80, 667-674. Campanella, L. et al. 2009. Determination of lactoferrin and immunoglobulin G in animal milks b new immunosensors. *Sensors* 9: 2202-2221. Seifu, E., E.M. Buys and E.F. Donkin. 2005. Significance of the lactoperoxidase system in the dairy industry and its potential applications: a review. *Trends in Food Science & Tech.* 16(4):137-154.
- ² Shah (2000); Cross and Gill (2000); Korhonen et al (2000).
- ³ Shah (2000); Cross and Gill (2000); Korhonen et al (2000).
- ⁴ Newman, J. 1995. How breast milk protects newborns: some of the molecules and cells in human milk actively help infants stave off infection. *Scientific American* Dec. 1995 pp.76.
- ⁵ Shah (2000); Cross and Gill (2000); Korhonen et al (2000).
- ⁶ Haug, A., A.T. Hostmark, and O.M. Harstad. 2007. Bovine milk in human nutrition—a review. *Lipids Health Disease* 6:25 (“Proteins and peptides are heat sensitive, and their bioactivity may be reduced by pasteurization of milk. Heating of milk may also result in the formation of potentially harmful new products, i.e. when carbohydrates in milk react with proteins.”). Wong, D.W.S. and W.M. Camirand. 1996. Structures and functionalities of milk proteins. *Critical Rev Food Science Nutr.* 36(8): 807-844
- ⁷ Said, H.M., D.E. Ong, and J.L. Shingleton. 1989. Intestinal uptake of retinol: enhancement by bovine milk Beta-lactoglobulin. *Am J Clin Nutr.* 49:690-694. Runge, F.E. and R. Heger. 2000. Use of



Slow Food[®] Ireland

microcalorimetry in monitoring stability studies. Example: Vitamin A Esters. *J Agric Food Chem* 48(1):47-55.

⁸ Kilshaw, P.J., L.M. Heppell, and J.E. Ford. 1982. Effects of heat treatment of cow's milk and whey on the nutritional quality and antigenic properties. *Arch Disease Childhood* 57: 842-847 (heat treatment destroyed all of the Vitamin B12, about 60% of the thiamin and Vitamin B6, 70% of the ascorbic acid, and about 30% of the folate).

⁹ Gregory, J.F. 1982. Denaturation of the folacin-binding protein in pasteurized milk products. *J Nutr.* 112: 1329-1338.

¹⁰ Effect of several heat treatments and frozen storage on thiamine, riboflavin, and ascorbic acid content of milk. *J Dairy Sci.* 66: 1601-6;

¹¹ Rajakumar, K. 2001. Infantile scurvy: a historical perspective. *Pediatrics* 108(4):E76.

¹² Hollis, B.W. et al. 1981. Vitamin D and its metabolites in human and bovine milk. *J Nutr.* 111:1240-1248. *See also* Levieux, D. 1980. Heat denaturation of whey proteins: comparative studies with physical and immunological methods. *Ann Rech Vet.* 11(1): 89-97 ("Nutritionists believe that high losses of nutritive value occur in heated proteins following cross-linking since high cross-linked proteins cannot be degraded by digestive enzymes.").

¹³ Parliamentary Intelligence. 1937. Milk Pasteurization: The Poole Experiment. *Lancet* 1141-43 (comments in the House of Lords referencing a study showing that raw milk decreases the likelihood of tooth decay and increased resistance to tuberculosis, compared to consumption of pasteurized milk). Ladd, M. et al. 1926. The relative efficiency of certified and pasteurized milk in infant feeding. *Arch. Ped.* 43:380-85 (found that babies fed raw milk had less frequent rickets and better weight gain compared to those fed pasteurized milk). *See also* Cornish, J. et al. 2004. Lactoferrin is a potent regulator of bone cell activity and increases bone formation *in vivo*. *Endocrinology* 145(9):4366-74.

¹⁴ Scott, E. and L.E. Erf. 1931. Ohio tests prove natural milk is best. *Jersey Bulletin* 50:210-211, 224-226 (documented normal growth, good health and gentle disposition in rats fed an exclusive raw milk diet. Rats fed pasteurized milk were anemic, had slow growth, rough coats, loss of vitality and weight, and were very irritable, often showing a tendency to bite when handled).

¹⁵ Riedler, J. et al. 2001. Exposure to farming in early life and development of asthma and allergy: a cross-sectional survey. *Lancet* 358:1129-33. Perkin, M.R. and D.P. Strachan. 2006. Which aspects of the farming lifestyle explain the inverse association with childhood allergy? *J Allergy Clin Immunol.* 117(6):1374-8. Perkin, M.R. 2007. Unpasteurized milk: health of hazard? *Clinical and Experimental Allergy* 37:627-630.

¹⁶ Pettifor, J.M. et al. 1986. Mineral homeostasis in very low birth weight infants fed either own mothers' milk or pooled pasteurized preterm milk. *J Pediatr Gastroenterol Nutr.* 5(2):242-53.

¹⁷ Antibiotic-like action of essential fatty acids. 1985. *Can. Med. Assoc. J.* 132:1350 (referencing Narayanan, I. et al. 1984. Randomised controlled trial of effect of raw and holder pasteurized human milk and of formula supplements on incidence of neonatal infection. *Lancet* 2:1111-1113).



Slow Food[®] Ireland

Fact Sheet: Grade A Raw Milk In Texas

Existing Regulations for Grade A Raw Milk

- Dairy farms, both facilities and records, are inspected twice every 6 months (217.26a)
- If a condition is found that poses an imminent health hazard, the department is required to suspend the dairy's permit immediately (217.26d)
- Samples of the milk are collected at least every six weeks and tested for: bacterial counts, coliform counts, somatic cell counts, water adulteration, and cooling temperatures. (217.27)
- At least twice every six months, the samples are also tested for pathogenic bacteria
- At least four times every six months, the samples are also tested for antibiotics
- Grade A raw milk must meet the following standards (217.28)
- Cooled to 45 degrees or less within 2 hours (also regulated in 217.29s).
- Somatic cell counts not to exceed 750,000 per milliliter (ml) for cow's milk or 1,000,000/ml for goat's milk.
- Bacteria limits of 20,000 per ml (not applicable to cultured products).
- Coliform not to exceed 10 per ml.
- Pathogen limit of zero.
- Section 217.29, Sanitization Requirements for Grade A Raw Milk, has 20 subparts, which have in turn multiple sub-subparts, of rules (217.29). Some highlights include:
 - Abnormal milk shall be discarded, and animals which show evidence of abnormal secretion must be isolated from the non-abnormal milk and equipment cleaned (a)
 - Milk barn must meet detailed construction and cleanliness requirements (b,c, e-g)
 - Animal yard shall be properly graded to prevent standing pools of water or waste, housing areas maintained to prevent soiling of animals udders and flanks (d)
 - Clean water in sufficient quantity for the dairy operations (h)



Slow Food[®] Ireland

Containers, utensils and equipment must meet standards for construction (type of materials), cleaning, sanitization, storage and handling (i-m)

•

The animal and the milking equipment must be free from contamination (n-p)

•

People doing the milking must have clean hands, wear clean outer garments, and be free of infection (q, r)

•

Effective insect and rodent control is required (t)

•

Animal Health: All herds shall be tested and found free of tuberculosis and brucellosis before any milk is sold; herds shall be retested at least every 12 months; cattle herds participate in brucellosis ring testing by Texas Animal Health Commission. For other diseases, the department may require physical, chemical, or bacteriological tests. (217.20)

•

Plans for Grade A Raw for Retail Milk Dairy Farms shall be submitted to the department for approval before work is begun (217.30).

•

Note that retail sales of raw milk are allowed in ten states: Arizona, California, Connecticut, Maine, Missouri, New Hampshire, New Mexico, Pennsylvania, South Carolina, and Washington.