

Seamons, Colleen

From: Richard Thomas [cheese@netspace.net.au]
Sent: Wednesday, 24 September 2008 12:40 PM
To: submissions
Cc: Rachel Needoba; rachel@williamdownie.com.au
Subject: Raw Milk Cheese Discussion Paper P 1007
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Re: Discussion Paper - P1007 Primary Production & Processing Requirements for Raw Milk Products (Australia only)

Note: Please officially acknowledge receipt of this submission by return.

In addition to the submissions by Mr. Will Studd and others, which I have read, understand and support, I have the following submission to make on behalf of myself & other specialist cheesemakers in Australia & New Zealand.

1. Environmental Impact

- 1.1 If Australian domestic producers are prevented from manufacturing raw milk cheese, we impose upon the environment the 'carbon footprint' of shipping & airfreighting such cheeses from their country of origin to supplement the market needs for such cheeses here in Australia & neighbouring countries. I believe we have an obligation to offset some of this.
- 1.2 As a retailer of cheese at De Bortoli Wines Yarra Valley, I see an increasing demand for Raw Milk Cheese from Europe. The financial return to European farmers and manufacturers is greatly in excess of the Pasteurised equivalent for Australian produce. Given the dwindling supply of water available to dairy farmers in Australia, greater returns for Raw Milk produce would allow a downsizing of their operation, thus reducing water requirements, while increasing the economic viability of their farming operation. We have an obligation here also to encourage the viability of our own economy & farming enterprises.

2. Nutritional

NASA scientists have acknowledged Raw Milk Cheese as nutritionally beneficial to their Astronauts in Space and have included such cheese in their dietary requirements. (see Parmigiano-Reggiano website). It has been long recognised that the nutritional value of raw milk cheese is superior to its Pasteurised equivalent. By preventing our domestic manufacturers from making natural cheese, we are compromising their ability to compete on a nutritional level internationally & in the home market.

3. Economic

Raw milk cheese commands a premium at all levels in this country, it carries a reputation for highest quality for flavour, texture & aroma: enjoyment in short. By prohibiting production of Raw Milk Cheese here & in New Zealand, we exclude our producers from entering this lucrative & quality market. The notion that we can import, yet not produce such cheese in this country is at once ludicrous & unfair to our economy & trade practices.

4. Food Safety

Much is misunderstood about this vital aspect of the Raw vs Pasteurised debate. The process of safe cheese production, by either method depends on a number of 'hurdles' set up during the cheesemaking process, not solely on pasteurisation as some would have us believe. It is generally considered by experts in the scientific field that 3 such hurdles will minimise risk of potential food born disease. Cheesemaking creates many such hurdles and is therefore considered a 'safe food'. Our cheesemakers are highly talented & capable of world's best practice.

The hurdles created in cheesemaking are many, but include:

1. Desiccation/Dehydration. The drying of food to render it safe is well known within and outside food science
2. Fermentation of available carbohydrate (lactose) to lactic acid, which in Raw Milk Cheese can reduce the acid levels to pH 3.3. Considered a terminal acidity for most all pathogens.
3. Salt. Added at levels from 1.4% - 8.5%, which although alone will not prevent some pathogens from thriving, in parallel with the other 'hurdles' ensures product safety & stability.
4. Bacterial Competition. The sheer massive numbers of lactic organisms developing during and after the cheesemaking process, out-compete undesirable organisms & in some cases provide active 'anti-spoilage' enzymes which prove toxic to many potentially harmful organisms. (Certain fungal organisms, yeasts & bacteria)
5. Fatty acids & other antibacterial by-products of the maturing process are well known preservatives. The fat in milk itself is a powerful preservative.
6. Rind development. The rinds which form on all natural cheeses are a strong deterrent to the invasion of unwanted organisms. These rind microflora often produce antibacterial and antifungal enzymes known to protect cheese from such as *Listeria Monocytogenes* as with some of the European washed rind cheeses. The rind itself acts as a physical barrier to invasion. All naturally rinded cheese has such protective qualities.
7. Heat treatment or 'cooking' during the cheesemaking process. Curd & whey is submitted to temperatures of up to 90°C (but usually 40°C to 65°C) during cheesemaking.

Although these temperatures in isolation do not exclude all potentially hazardous organisms, they have been found over centuries of cheesemaking to be an important step in rendering the resultant cheese 'safe' through creating a difficult environment for unwanted bacteria and are in some instances destructive to certain species.

8. Pasteurisation & thermisation whilst once again not effective alone in the final food safety of cheese, do reduce the transfer of some undesirable bacteria into the process. If this process step were entirely effective in this role, no further steps would be necessary in milk preservation. Certain thermoduric bacteria survive this step and the possibility of post pasteurisation contamination remains unhindered. This last contamination aspect is where all the previously mentioned 'hurdles' ensure safe product. Pasteurisation, whilst effective to a degree, does not eliminate subsequent potential hazards and may in fact enhance the possibility through destruction of protective enzymes. e.g. phosphatase.

9. Milk pre-ripening. The practice of milk pre-ripening is commonly

applied during the preparation of milk for cheesemaking in Europe. This is carried out by the addition of lactic starter organisms and the milk is then held at elevated temperatures for a substantial period of time. The net effect is a massive reduction in E.coli numbers whilst lactic bacterial activity is enhanced, obviating the need for pasteurisation in most cases.

The abovementioned are some of the commonly known 'hurdles' available to the cheesemaker in order to produce 'safe cheese'. There are many other safety factors provided by science & nature.

Perhaps the most profound insurance for safe cheese, is a cheesemaking environment so completely dominated by desirable yeasts, moulds & bacteria in an ideal climate that the invasion by unwanted organisms proves to be at least unlikely and practically ineffective. This has been the result of some 40 years of scientific study, practical cheesemaking & wide observation in Australia, Europe & the Middle East.

In summary, the safety of our dairy produce, particularly fermented dairy foods, depends upon many of the above principals being observed in series, along with diligent application of hygienic practice irrespective of the inclusion of milk heat treatment prior to manufacture. Given the profound advantages to our economy, environment & product quality, we must make way for the application of processes here, the benefits of which are enjoyed by our competing dairy nations, food exporters and their

populations.

Richard Thomas
Cheesemaker, consultant, cheese enthusiast, dairy
microbiologist.

Richard Thomas
Cheese Consultant
'Westwyck'
492 Victoria Street, Brunswick West, Victoria 3055
cheese@netspace.net.au
Mobile: 0411 551 951

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