

# The American Cheese Society

N E W S L E T T E R

## CODEx COMMITTEE DELIVERS GOOD NEWS TO U.S. SPECIALTY CHEESEMAKERS

by Laura Jacobs Welch

Early last fall, we received word in our office, via a member, of the Codex meetings in Washington and concern about the decisions about to be made there concerning regulating farmstead cheeses through pasteurized milk laws. A letter was immediately drafted by Dominique Delugeau, and sent to a concerned member of the European Committee. He stated the American Cheese Society's continuing support of the farmstead cheesemaker, and asked for more information concerning the issues being presented.

Since that time, not a little bit of print has been devoted to the recent meetings of the Codex Committee in Washington during the last quarter of 1997. We have been warned of the wake up call that would soon be coming, from John Umhoefer in a Cheese Market News article. It seems, however, that common sense, and the Specialist Cheesemakers Association of Great Britain have been able to decrease the feeling of impending doom by involving themselves for the good of all of us.

The US Proposal requiring pasteurization of milk for cheesemaking, recently discussed in Washington, will not be adopted now. The committee has decided to accept an alternate formula put forth by the United Kingdom delegation. It requires a combination of control mea-

sures throughout the food process from pastures to the retail process.

In recent news releases from the SCA, Britain a report by Professor Verner Wheelock, (a leading consultant in Great Britain in the area of food safety and nutrition) was cited in the campaign to ensure that "quality, unpasteurized cheese much of it made by small farmhouse producers, remains readily available to consumers."

The SCA launched the "Code of Best Practice" early in 1997. "The code is intended to make it easier for all those involved with specialist cheeses to achieve the highest standards. We have deliberately included the whole process from milking to retailing because we believe each sector has a vital role to play in ensuring the best gastronomic quality". Arthur Cunynghame, Chairman of the SCA, said in the press release

Professor Wheelock refutes the recent statements by the Institute of Food Science and Technology (IFST) which blamed raw milk cheeses for a number of food poisoning outbreaks. He states that the information and data used by the IFST has not been interpreted objectively, and the reasoning cannot be substantiated.

Professor Wheelock's discussion concludes that 1) "It would be naive to

assume that all raw milk used for production of cheese is always free of pathogens. However, there is good evidence that any pathogens present are unlikely to survive the cheese production process." 2) "As a general rule, cheese made from raw milk is confined to small operations, whereas cheese made from pasteurized milk may involve large volumes produced by big plants.

"If contamination does occur then the proliferation of pathogens would be more pronounced in a process based upon pastured milk than in one based on raw milk, because competitive organisms have been eliminated."

Precise wording is still being worked on, but you can be sure we will continue to follow this event for our members benefit. To reiterate our president's comments from the last newsletter, "Our association badly needs to be more active in promoting, encouraging and defending the start up and expansion of specialty and farmstead operations in the USA".

*Continued.....*

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## LETTER FROM THE PRESIDENT

I would like to take a few moments of your time to share my wishes for your happy holiday, and a very prosperous, healthy new year. In looking back at the year of 1997 with the American Cheese Society, I can point to important changes and increased Board and committee activity.

The American Cheese Society has moved its offices and changed its administrator in 1997. Laura Jacobs Welch has taken over, and her background in book-keeping and running small businesses was put to the immediate test as she completed the transfer of financial and membership information to new accounting and software and database formats. As the ACS has become more successful, it has become increasingly important to be able to provide up to the minute financial/budget reports which will be cleaner and easier to read. In addition, as the organization has grown, a strong and knowledgeable administrative support staff has become an absolute must, and

Laura has proven she can provide that support.

The membership database has been gone through and much of the old information has been archived. The new database changes can be emailed to our website provider far more quickly, and in a smaller, more concise format. The current membership stands at 470. The website (cheesesociety.org) has been attracting quite a bit of attention, as well as a number of new members in the third quarter.

A new press kit is being developed, with Linda Funk and Laura Jacobs Welch going over materials for inclusion. Some ideas include: An updated press release containing the current year's conference information or competition winners; a tri-fold brochure, with membership application; a one sheet front and back printing detailing a featured cheesemaker, retailer, or other member and their contribution to the growth of the specialty cheese industry.  
*continued.....*

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\* NOTE: Where names appear more than once, companies and phone numbers were listed with the first appearance only for the sake of space.  
(If any of the above information is incorrect or has changed, please contact Laura at the ACS office.)



# PROTECTIVE CULTURES HELP FIGHT PATHOGENS IN SOFT CHEESE

Reprinted with permission from the Australian Specialist Cheesemaker's Association  
Newsletter Number 4 1997, recommended by Avice Wilson

by Ron Hull

In Europe protective cultures are being used to ensure that foods are not contaminated with pathogens such as *Listeria monocytogenes*. Specialist in protective cultures Ms. Insa Dreyer from the German company Wiesby, said that protective cultures could give specialist cheesemakers the help they've been looking for to protect their products from pathogens. Dreyer said "Protective cultures are now being used to meet consumer needs for increased food safety protection. Wiesby has developed protective cultures for a number of food applications. Examples of food where protective cultures are now being used in Europe include salami, bread, soft and semi-hard cheeses, quark, cottage cheese and fermented milk." Dreyer said the list of protective cultures is growing and Wiesby's latest, called ALC-01, is used to protect blue mould and smear-ripened soft cheeses from *Listeria*. Dreyer was the keynote speaker at a special workshop on food safety organized by the Australian Specialist Cheesemaker's Association in Melbourne in July.

Although *Listeria monocytogenes* is reported to cause no effects in healthy individuals (a recent Dutch study showed that even very high oral doses has no effect on healthy adults) it can cause abortions. *Listeria* has become one of the most publicized food-borne pathogens in

recent times. *Listeria* is widespread in the environment and is a common contaminant of raw foods such as meat and vegetables. As it is widespread in nature, keeping it out of some foods such as soft ripened cheese is difficult, requiring stringent hygiene. The emergence of protective cultures has therefore been a welcome addition to hygiene as a positive way of controlling *Listeria*.

Dr. Ron Hull, Food Consultant, a former Microbiologist at CSIRO Dairy Laboratory said, "Recent outbreaks of poisoning due to food-borne pathogens had increased the demand for improved chemical disinfection processes and more effective preservatives in foods. However, the use of more chemicals is out of step with modern trends to more natural and ecologically friendly foods. Increasing the use of chemicals in cheese manufacture can negatively influence activity of the important starter cultures and can also endanger the health of the customer. In contrast, protective cultures are consistent with a natural approach to control pathogens in foods. Protective cultures are now available to control pathogens such as *E. coli* and *Listeria* and spoilage organisms such as *Clostridia*, yeasts and moulds," he said. Protective cultures control unwanted pathogens in foods by the process of natural biological competition.

Ms. Dreyer said that the new protective culture ALC-01 from Wiesby has strong anti-*Listeria* activity and can be used to control *Listeria* in blue and white mould cheese, and smear-ripened soft cheese like Muenster. "ALC-01 is supplied as lyophilized powder and is stored at -18° C. The ALC-01 powder is dissolved in sterile salt solution (0.85% NaCl) and sprayed into the cheese after salting to give a surface count of around 10,000 viable cells per square centimeter of cheese surface.

ALC-01 contains a patented strain of *Lactobacillus planatarum* (strain BN85) which produces a bacteriocin called Pediocin. Pediocin does not affect the lactic starter cultures or the mould or smear cultures used in cheesemaking but does kill most species of *Listeria*," she said. Ms. Dreyer said the cost of using ALC-01 is in the range of 1 to 3 cents per kg of cheese, a small cost to provide security against pathogens such as *Listeria*.

Ms. Dreyer said that trials in Germany and France have shown the clear benefits of protective cultures to control *Listeria* in soft cheese.

Dreyer said, "Muenster is a smear ripened cheese where the surface acidity  
*continued* page 13

Activity Spectrum of Pediocin from ALC-01	
Micro-organism	Sensitive
<i>Listeria innocua</i>	yes
<i>Listeria ivanovii</i>	yes
<i>Listeria monocytogenes</i>	yes
<i>Listeria seeligeri</i>	yes
<i>Enterococcus faecium</i>	yes
Coliforms/ <i>E. coli</i>	no
<i>Salmonella</i>	no
<i>Staphylococcus</i>	no
Starters	
Lactococci	no
<i>Leuconostoc</i>	no
<i>Brevibacterium</i>	no
Cheese Moulds	
<i>Penicillium candidum</i>	no
<i>Penicillium roqueforti</i>	no

PROTECTIVE CULTURE	CONTROL OF	APPLICATIONS
Lc705 ( <i>L. casei</i> )	<i>Clostridia</i> <i>Enterococci</i> Coliforms	Semi-hard & hard cheeses Probiotic
BioProfit ( <i>L. casei</i> & <i>Propioni-bacterium</i> )	Yeast Moulds <i>Lactobacilli</i> <i>Clostridia</i> <i>Bacillus</i>	Bread Feta Cheese Cottage cheese Mozzarella Fermented milks Quark Silage

# GOAT MILK SOMATIC CELL COUNT SITUATION IN THE UNITED STATES

By: George F. W. Haenlein Cooperative Extension Dairy Specialist University of Delaware  
and Lynn S. Hinckley, Department of Pathobiology, University of Connecticut

## SUMMARY

Milk production by the 1.5 million U.S. dairy goats has an estimated annual value of \$500 million, but official statistics are mostly absent. There is a market imbalance, demand exceeding supplies. There also is a need for fair goat milk quality standards, which are inappropriate if they are copies of cow milk standards. Complicating this situation is that no widely acceptable routine methods exist for monthly monitoring of true leucocyte levels as indicators of presence or absence of subclinical or clinical mastitis in tank milk and individual goat milk. Furthermore, research has been lacking to establish acceptable goat milk somatic cell count levels, which must be valid for every month of the year when goats are at the end of lactation or in the middle or at the beginning.

## INTRODUCTION

The U.S. dairy goat industry is on the threshold of being recognized as a necessary and legitimate U.S. industry (Maxey, 1993). Dimensions of the U.S. goat milk industry have been reviewed (Kapture, 1985; Haenlein, 1981; 1986; 1994; Campbell, 1992). Official averages for somatic cell counts in milk of U.S. dairy goats are not publicly available, although this testing is offered and widely used by dairy cow farmers in the monthly Dairy Herd Improvement Association (DHIA) record keeping system. Parts of this paper have been presented at a recent Conference in Italy (Haenlein and Hinckley, 1994).

## HEALTH STANDARDS

U.S. goat milk production is subject to the health regulations of the total U.S. dairy industry and the same quality standards as cow milk as long as research does not demonstrate reasons for different standards. In 1993 for the first time, the somatic cell count standard for commercial goat milk was kept at 1 million/ml, while the maximum allowance for commercial cow milk was lowered to 750,000, mainly because research data were accumulating to indicate physiological and microbiological differences between goat and cow milk independent of disease status, which would justify different standards between the two species without endangering human food safety (Haenlein, 1987; Atherton, 1992). While it is widely accepted that somatic cell

counts are a valid indication of abnormal milk secretion, composition and mammary disease in cows, this does not appear to be the case for goat milk, at least not to the same extent, and therefore any maximum somatic cell count as a legal indication of goat milk abnormality has been considered to be inappropriate (Atherton, 1992; Lerondelle et al., 1992).

Slowing down the adoption of valid new quality standards for goat milk is the paucity of U.S. basic research in this field so far, despite increased research activity at 5 more Experiment Stations in Prairie View, Texas; Langston, Oklahoma; Fort Valley, Georgia; Tuskegee, Alabama; and Tallahassee, Florida during the last decade in addition to California--Davis, Texas--San Angelo, Pennsylvania--Philadelphia, New York--Cornell, Connecticut--Storrs, Delaware--Newark, and Massachusetts--Rutland. Much evidence has come instead from research in France, Italy, Spain, Finland, Greece, India, Iraq, and Israel (Rota et al., 1993; Upadhyaya & Rao, 1993).

Also complicating adoption of goat milk standards is the fact of mostly seasonal dairy goat breeding and milk production being practiced in the United States (Table 1). Typically, U.S. dairy goats are in late lactation and low production when the goat milk market in the winter season is highest (Schultz, 1993). Price incentives are mostly missing to stimulate efforts of more successful all-year-round breeding and milking. Furthermore, many good dairy goat farmers are not located near processors or major consumer markets, making shipment of goat milk expensive and affecting quality of goat milk, if transportation is not in refrigerated trucks at least 3 times per week (Haenlein, 1992).

## FACTORS AFFECTING SOMATIC CELL COUNTS

It has been shown that more frequent milking increases migration of neutrophils from blood into the mammary gland for more efficient phagocytosis and mammary gland defense against pathogen infections (Paape et al. 1992). However, many dairy goats are milked only once a day routinely.

Total and differential somatic cell counts differ with stage of lactation (Miller et al. 1991; Rota et al., 1993). If cows in a milking herd are in various stages of lactation always, a single maximum standard of somatic cell counts all year makes sense. If goats in a milking herd are only in one and the same stage of lactation mostly (because of seasonal breeding) at a certain sampling date, then an all-year-round single maximum standard of somatic cell counts does not make physiological nor legal sense for goats, and actually is discriminating against dairy goat owners, discouraging them from having a commercial goat milk enterprise. Thus a viable goat milk industry is made impossible.

Currently prevailing methods and testing equipment for cow milk has been found to be unreliable and inappropriate for goat milk (Poutrel & Lerondelle, 1983; Maisi, 1990; Atherton, 1992). There is a need for recalibration for goat milk and for methods, which identify differentially true leukocytes from total somatic cells. Once a direct microscopic cell count, correct routine stain and/or

**Table 1. Annual kidding distribution of 3,348 dairy goats on DHIA in Western United States \***

Date	Numbers	Date	Numbers
February 1992	196	February 1993	638
March	972	March	1,138
April	820	April	930
May	524	May	507
June	175	June	175
July	62	July	69
August	22	August	108
September	47	September	31
October	63	October	101
November	93	November	100
December	101	December	43
January 1993	218	January 1994	177

\* (S. Smith, Provo, Utah, personal communication)



DNA test for true neutrophils in dairy goat milk is adopted, then the difference between calendar months coinciding with stage of lactation months still has to be resolved into a sliding scale of somatic cell count standards year-round.

A survey of 1,230 bulk milk tank samples from 103 commercial goat milk farms in 11 different U.S. states during 1984 to 1991 (Kapture, 1991), tested by the reliable direct microscopic cell count method, the Fossomatic and the Pyronin y-methyl green stain for somatic cell counts (SCC), showed large numbers of non-mastitic samples to be beyond 1 million SCC/ml. In April 10.1 percent, May 12.9, June 19.9, July 25.0, August 41.2, September 50.4, October 49.5, November 51.3, December 50.5, January 52.7, February 29.7, March 22.7 percent of the monthly tests were above 1 million SCC/ml, presumably in the illegal or "reject" range according to cow milk standards, with more than half during the late lactation months of September to January.

Tables 2, 3 and Figure 1 show monthly data for 2 years, not for milk tank herd totals, but for more than 2,000 individual goats on DHIA testing for SCC with similar trends between months and seasons as found in the above study with milk tank samples (Figures 2 and 3).

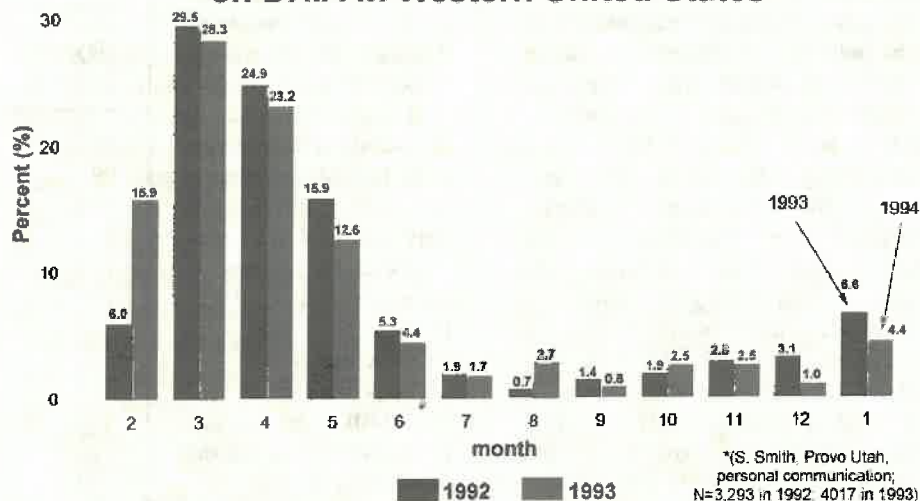
#### U.S. REGULATORY STANDARDS FOR SOMATIC CELL COUNTS IN GOAT MILK

Milk, which is shipped between U.S. states, is regulated for quality by the National Conference on Interstate Milk Shipments (NCIMS), an organization of state regulatory officials and federal Food and Drug Administration (FDA) officials from the Milk Safety Branch. Quality standards for milk, as set by the NCIMS, are stated in a document entitled the Pasteurized Milk Ordinance (PMO). Standardized laboratory methods for determining quality values are recorded in "Standard Methods for the Examination of Dairy Products" (Marshall, 1992). Prior to any change in laboratory methods or quality standards, the change must be justified to the

NCIMS Laboratory Committee and approved by both the NCIMS voting delegates and the FDA.

Over the past 10 years, the Goat Milk Committee of the NCIMS has made recommendations for a separate set of standards for goat milk (Hinckley, 1984). The Committee has reviewed research literature, laboratory records and comparison

**Figure 1. Annual kidding distribution of dairy goats on DHIA in Western United States\***



**Table 2. Somatic cell count distribution in milk of dairy goats on DHIA in Western United States \***

Date	# goats	DIM	Milk kg	Fat %	%Low SCC	%High SCC	Average SCC
2/92	2,276	189	1.2	4.1	31	24	832
3/92	2,902	121	2.0	4.1	43	16	608
4/92	2,796	91	2.7	3.9	50	15	752
5/92	3,065	99	3.4	3.5	50	12	528
6/92	3,247	120	3.2	3.3	45	14	576
7/92	3,413	147	3.1	3.3	48	13	544
8/92	3,047	169	2.7	3.4	33	21	816
9/92	2,913	194	2.4	3.7	31	22	832
10/92	2,897	218	2.0	3.9	29	25	912
11/92	3,061	239	1.7	4.1	28	25	864
12/92	2,883	255	1.2	4.3	22	33	1,024
1/93	2,795	246	1.1	4.2	27	28	928
2/93	3,292	188	1.2	4.1	35	29	720
3/93	3,161	121	2.1	4.0	46	15	576
4/93	3,404	100	2.8	3.7	47	13	624
5/93	3,978	102	3.0	3.4	50	12	528
6/93	3,737	119	3.1	3.3	36	18	752
7/93	3,903	147	3.0	3.3	37	19	736
8/93	3,549	173	2.7	3.3	33	21	1,000
9/93	3,376	200	2.4	3.6	26	29	992
10/93	3,235	221	2.0	3.9	28	26	880
11/93	3,129	237	1.8	4.3	23	30	1,328
12/93	3,664	244	1.4	4.2	21	36	1,216
1/94	2,750	243	1.1	4.2	26	29	896

\* (S. Smith, Provo, Utah, personal communication); SCC = somatic cell count; Fossomatic data; DIM = days in lactation; Milk kg/day/goat; % low SCC < 283,000; % high SCC > 1.13 million; Average SCC in 1,000; rolling herd average 365-day milk production 835 kg/goat.

studies conducted on cow and goat milk. The review indicated significant species differences which result in compositional differences. If normal goat milk is tested by cow milk criteria and methodology it may be judged to be abnormal, showing deviation from standard values. Species differences necessitate a separate set of legal milk quality standards for goat milk.

Standardization of somatic cell count regulations for goat milk encompasses two separate issues. The first is the use of appropriate methods. The apocrine milk secretory system of the goat mammary gland results in the presence of cytoplasmic particles in the milk, therefore, cell counts of 1.0 million /ml or more, as determined by screening tests, must be confirmed by direct microscopic somatic cell count (DMSCC) using a dichromal stain for the differential count. The U.S. official standard methods stain is the Pyronin-Y Methyl Green stain. Screening tests include the California Mastitis Test (CMT), the Wisconsin Mastitis Test (WMT) and electronic counting. The Coulter counter is not acceptable for goat milk (Poutrel & Lerondelle, 1983).

#### CURRENT U.S. RESEARCH

A study of 100 split samples done by a New York state regulatory laboratory, compared cell counts done by the Fossomatic test and by DMSCC (Marin, 1989). The counts from the Fossomatic were consistently higher than those done by DMSCC. The results indicate the continued need for a DMSCC confirmation after Fossomatic screening.

The second issue relates to elevated cell counts in milk produced from disease free udders. A study of 380 goats in New York concluded that non-infected goats from goat farms with excellent management practices often had milk somatic cell counts of 1.0 million cells/ml or above (Wilson, 1993). Another study in cooperation with the University of Vermont concluded that the tremendous variation observed in somatic cell counts from goats made it difficult to interpret the significance of somatic cell counts in goat milk (Randy, 1990). In a study of 560 goat samples by the University of Connecticut it was found that mid-lactation, non-mastitic goat milk often had somatic cell counts of 1.0 million cells/ml or above (Hinckley, 1990). This refutes the conclusion by Harmon (1994) from research with cow milk that "except for normal diurnal variation, few factors other than infection status have a significant impact on milk somatic cell counts."

At least this conclusion is not valid for goat milk.

Research at the USDA Experiment Station with flow cytometry indicate that the granulation and density of somatic cells in goat milk differs from that of somatic cells in cow milk, indicating different competency and functionality, that lead to a necessity of higher number of cells (Dulin et al., 1983; Drake et al., 1992).

#### CONCLUSIONS

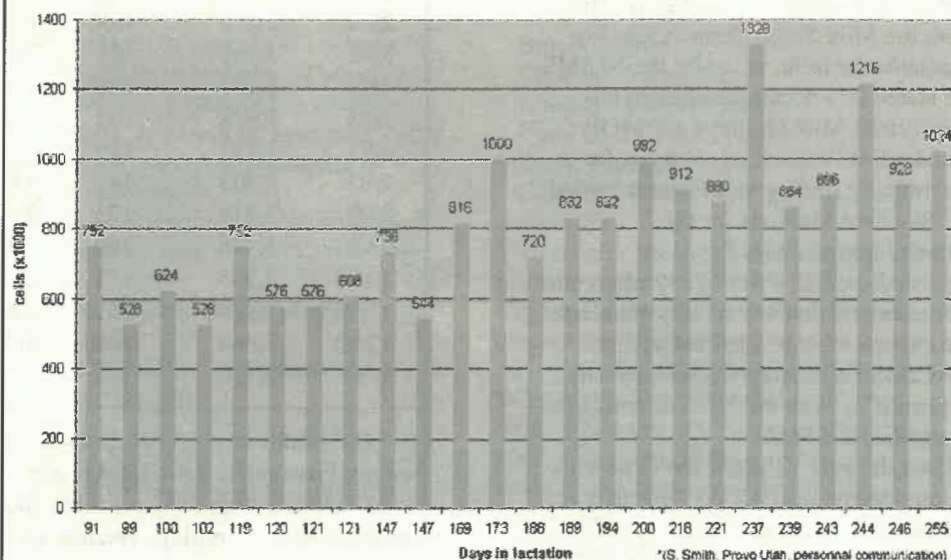
The position of the U.S. Goat Milk Subcommittee of the NCIMS is that due to inherent differences between cows and goats, goat milk with a somatic cell count of 1.0 million cells/ml can be produced from a healthy, non-mastitic udder and therefore, is quality milk (Hinckley, 1991; Atherton, 1992). The need for a separate standard for goat milk was recognized by the NCIMS. The goat milk standard remained at 1.0 million cell/ml, when the cow standard was lowered to 750,000 cells/ml in 1993.

**Table 3. Relationship of stage of lactation to average somatic cell counts in milk of dairy goats on DHIA in Western United States \***

Days in lactation	Somatic cell count (1,000)	% above 1.13 million
91	752	15
99	528	12
100	624	13
102	528	12
119	752	18
120	576	14
121	576	16
121	608	15
147	736	19
147	544	13
169	816	21
173	1,000	21
188	720	29
189	832	24
194	832	22
200	992	29
218	912	25
221	880	26
237	1,328	30
239	864	25
243	896	29
244	1,216	36
246	928	28
255	1,024	33

\* (S. Smith, Provo, Utah, personal communication)

**Figure 2. Relationship of stage of lactation to average somatic cell counts in milk of dairy goats on DHIA in Western United States\***

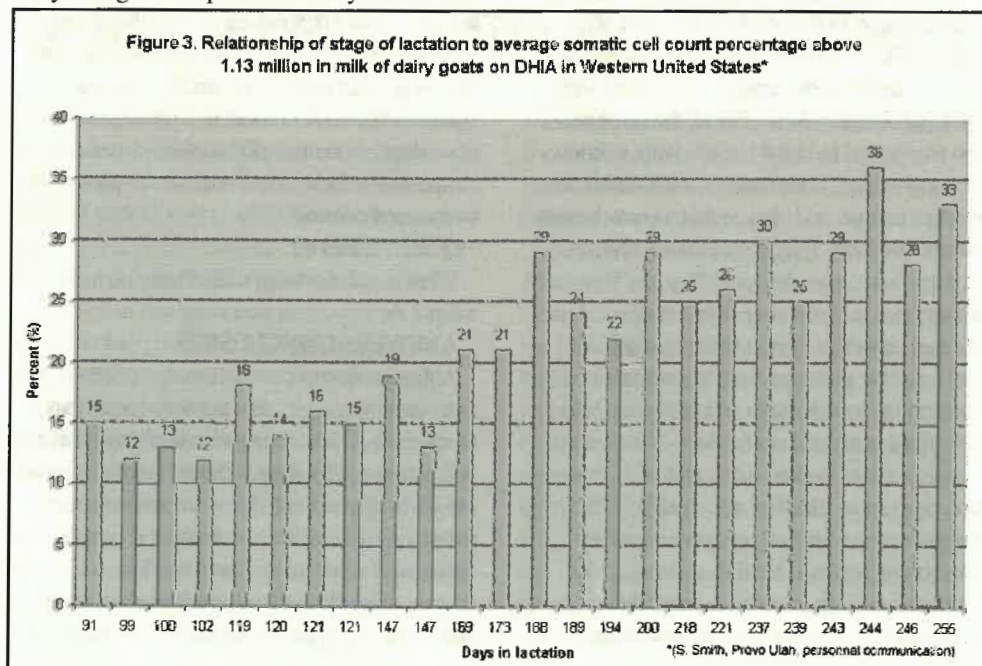


\*(S. Smith, Provo Utah, personal communication)



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# ROMANCING THE CHEESE AT YOUR FAVORITE LOCAL RESTAURANTS

by: Regi Hise

-Nancy Oakes, Chef/Owner, Boulevard Restaurant, San Francisco, CA  
-Tom Douglas, Chef/Owner, Dahlia Lounge, Etta's Seafood, Palace Kitchen, Seattle, WA  
-Leslie Macki, Chef, Baker/Owner, Macrine Bakery and Cafe, Seattle, WA  
-Alison Leber, Owner, Brie and Bordeaux Wine & Cheese Shop, Seattle, WA  
-Jim Dorhman, Campagne Restaurant, Seattle WA

## PART #2

In Part #1, we discussed what chefs said they needed to do to successfully sell cheese on the menu and what things cheesemakers could do to help. In Part #2 we're going to discuss how these chefs make their purchase decisions and what they're doing with cheese on their menus. I think it is important to note that most of the chef's on this particular panel represent fine dining or white table cloth restaurants. There are other restaurant segments that offer good opportunities for cheese usage, especially casual or theme restaurants. It is however more difficult for small cheesemakers to approach large chains, which means that fine dining is probably a better segment to target.

### QUESTION #1.

How do you make purchase decisions, and decide what cheeses you use in your operation.?

### ANSWERS/CONCLUSION:

This was pretty easy to encapsulate and to a person the panelists agreed on a number of things that were criterion for selecting cheese for their menus. They all favored patronizing cheesemakers from their city or region. Not only was it a way to express their regionality, but they favored the personal interaction with the local cheesemakers. For all the same reason mentioned in Part #1, chefs want to know the story of the cheesemakers, what makes the product unique, and they want to know how to use the product. They're not asking cheesemakers to become chefs, but they do want information that will help them handle and use cheeses properly. Nancy Oakes pointed out that handling was especially important since cheese was an expensive item and she could not afford product shrink or loss. That meant she also wanted to know any special information on product handling and storage. Other things most panelists agreed on is that they have better access to local cheesemakers for product sampling or tastings, better delivery cycles (more frequent) and because of that,

they are able to maintain tighter inventories with less shrink or spoilage.

Last, but not least, all the chefs liked knowing the person behind the cheese. They stressed the positive outcomes from the personal interactions between them and cheesemakers.

### NEXT STEPS / OPPORTUNITIES FOR CHEESEMAKERS:

Get out from behind the vat and go visit your local restaurants. Even if you have a salesperson or a distributor, the chef would still like to meet the cheesemaker. They are as impressed with meeting a cheesemaker as a cheesemaker is meeting a famous chef. Food is part of their life and they view you as a food professional. They would appreciate it if you would call and find out the best times to meet with them, but know that they want to meet you and they want to know your story.

When you visit them find out what they're doing with your cheese and make note of it. Basically they are testing your product in a foodservice environment and that is valuable information. Although other chefs won't want to copy these recipes exactly, it will give you a good point of reference for ideas on using your cheese. That's an opportunity on recipe ideas, but technical information on product performance is equally valuable. One of the best examples I can give you is a cheesemaker whose product was primarily used on pizzas. He was constantly being asked questions about his product's performance related to cooking time, temperature and equipment. He started to visit with people who used his cheese and watched them making pizzas. He noted cooking times and temperatures on specific equipment and started a file. Basically his customers did his product testing for him; he was just smart enough to document it. His sell sheets now detail recommended cooking times and temperatures for the 4 most common pizza ovens used commercially.

### QUESTIONS #2

What are chefs doing with cheese on their menu?

### ANSWERS/CONCLUSIONS:

Although there was a wide range of answers that went from appetizer to entrees to desserts or special courses, certain trends are consistent and some are changing. Cheese is still easier to sell as an appetizer than anywhere else on the menu. Americans tend to think of cheese as a first course much more than they do a last course. Also cheese lends itself well to salads and American typically eat theirs first while

Europeans typically eat their salad last. Up front is the easiest sell and also, appetizers represent the most profitable parts of the menu. Everyone had a cheese somewhere on the appetizer menu.

Most all the chefs on the panel had cheese represented in some way on the entree portion of the menu because adding cheese definitely helps certain items sell. Also Americans tend to eat their cheese in or on something much more often than by itself. The heaviest use by volume of cheese tended to be in uses that brought starches, grains and vegetables to the center of the plate, whether it was pasta, macaroni and cheese, or risotto. Cheese was also used widely in the bakery for cheese breads. The notable exception was Leslie Macki of the Macrine Bakery and Cafe. She is a purist when it comes to breads and prefers not to put cheese in her breads. She instead recommends cheese that pair well with the breads.

Something that is starting to change is the cheese course. Europeans have always favored cheese as a finish course. Philosopher Brillat Savarin once said "A meal without cheese as a finish is like a beautiful woman with only one eye". (To wit, something is missing.) Americans have never been very responsive to cheese courses even when offered but they are beginning to warm up. Jim Dorhman of Campagne, and Tom Douglas of Dahlia Lounge and Palace Kitchen both have started successful cheese courses in their restaurants. As we pointed out in Part #1 though, one of the keys is someone in the operation who is a cheese lover. Whether it's the chef or the waitstaff, someone in the operation has to mentor the program.

This trend is starting to happen all over the country and it will be interesting to see Americans respond

### NEXT STEPS / OPPORTUNITIES FOR CHEESEMAKERS

If you want to get someone's attention, show them where the profit is. These chefs said that the two most profitable areas were appetizers and entrees with pastas, grains, and starches where cheese pulls the dish to the center of the plate. Anytime you think of good uses for your cheese in these applications, make note of it and share these ideas with chefs that are your customers. If your customers are casual theme restaurants as opposed to fine dining this trend will be even more prevalent.

If you're selling primarily to fine dining or white table cloth restaurant, the same trends are



applicable but the cheese course may be another opportunity for you to pursue. Once again, the best way to approach it might be to offer a wine and cheese sampling for the chef and the wait staff.

Last but certainly not least, in fact maybe the

biggest opportunity, is menu identification for your cheese. Chefs are increasingly turning to menu identification for local products that help them express their regionality. Any time you can get your product name listed on a menu you have a certain degree of protection from

another cheese slipping in. Ask your chef if it is possible to identify your cheese on the menu and help them in any way you can through samplings, tastings and telling them your story.

## FROM THE EDITOR

by: Regi Hise

1998 ACS CONFERENCE / AUGUST 6-9 / MADISON, WI.

It's time to mark the dates on your calendar if you haven't already done so for the next ACS annual conference. We're thrilled to be hosting the conference this year in Madison, Wisconsin, and we've got an agenda just packed with exciting programs. Whether you're a cheesemaker, retailer, chef, or distributor we've got something for everyone. Here's a look at some of the things we'll be doing.

### ONE ENTIRE DAY OF CHEESEMAKING WORKSHOPS!

Our cheesemaker members indicated they wanted more focus on cheesemaking at our next conference. To accommodate that, we have set aside a full day for cheesemaking programs including hands on workshops, seminars, and panel discussions. All cheesemaking, all day! In addition to expanding the cheesemaking portion of the program, we asked a cheesemakers advisory group to review the outline of proposed topics. They were thrilled and we know you will be also. A huge thanks to Judith Shad for her help in getting all this going.

The cheesemaking workshops will be held at the UW/Madison, Center for Dairy Research on Thursday August 6. The focus will be

cheesemaking and we are thrilled to be able to take advantage of these world class programs for our ACS members. CDR faculty and other ACS members will present programs that will appeal to every level of cheesemaker from table top to farmstead to larger scale production.

### TWO DAYS OF CHEESE SEMINARS

The University of Wisconsin - Madison will also play host to ACS for our regular conference sessions on Friday, August 7, and Saturday, August 8. These two days will be packed with information that anybody in cheese won't want to miss. Along with great information, we've begun lining up some of the best speakers and panelists anywhere.

### SPECIAL ACTIVITIES

In addition to two days of great programming, we've got lots of special activities planned for the time you're with us in Madison. We'll celebrate summer in Wisconsin fashion with a dinner on the farm complete with brats, beer, fresh sweet corn and some of the world's best tomatoes. We even had a local farmer offer to grow a range of antique and heirloom varieties so that we can offer a vertical tasting at our dinner on the farm. Speaking of produce, we'll also spend some time taking in Madison's farmer's market

which is one of the oldest and largest farmer's markets in the country. Add to this a number of local chefs who agreed to design special menus with a focus on American Specialty and Farmstead cheeses and you start to get the idea. This is going to be a delicious conference!

### FESTIVAL OF CHEESES

The ACS Festival of Cheeses is always a special part of our conference and this year will be no exception. We have a new expanded format that we can't wait to unveil, and it will be held in a very special place too. This year's Festival of Cheese will take place at Monona Terrace on Saturday evening, August 8. (See related article below)

### CHEESEMAKING TOURS

Several of our Wisconsin cheesemakers have agreed to make cheese on Sunday so that we can finish our conference with the traditional day touring cheese factories. The tours will represent small, medium, and large factories, and it promises to be a very fun day.

In addition to all of this, we've lined up lodging at several hotels that offer a range of prices to suit everyone's budget. We look forward to seeing you in Madison, and we know you're going to love this conference!

## MONONA TERRACE - A PUBLIC PLACE BY FRANK LLOYD WRIGHT

by: Jane Carter

The 1998 American Cheese Society's Annual Conference will be returning to Madison Wisconsin. There have been progressive changes for ACS since the last time we convened in Madison in 1992 and there has been one momentous addition to Madison - a \$67.1 million Convention Center on the shore of Lake Monona.

On Saturday, August 8, 1998, the ACS "Annual Festival of Cheeses and Award Ceremony" will be held in the fourth floor Grand Terrace at Monona Terrace Center.

It was nearly 60 years ago that Frank Lloyd Wright drew the plans that eventually inspired the Monona Terrace Convention Center. The renowned and controversial architect submitted a grandiose plan of towers, fountains and ter-

aces rising from the shores of Lake Monona in the shadow of the state Capitol. It incorporated city and government offices and chambers, a railroad station, courts and a jail. With an estimated price of \$17 million, city officials put the plan on hold. In 1954 Wright redesigned his original plan but opponents of the project torpedoed the feisty architect's proposal again. In the late 1960's, Taliesin Architects prepared, at the city's request, an ambitious master plan for the "Monona Basin Project" including organic inspired architecture for a performing arts center but bids came in over budget and the project was dropped once more. In 1989, Mayor Paul Soglin saved the project from oblivion by gathering civic leaders along with Taliesin Architects to consider resurrecting Wright's

Monona Terrace plans as a convention center for the city of Madison. A broad coalition formed and in 1992 referenda to finance and construct the project passed.

The world-class Frank Lloyd Wright Monona Terrace Community and Convention Center is a stunning, semicircular structure linking Lake Monona with the domed state capitol building. It features floor-to-ceiling 34 feet high arched windows in a structure that actually extends 90 feet over the water. Furnishings include typical Wrightian curves, bowl shaped lights and planters with all details capturing Wright's sensitivity to nature's rhythms. With this "working piece of art" as our site, the 15th "Festival of Cheeses" will be both a gastronomic and visual spectacle.



## ACS WEBSITE UPDATE

by: Richard Haws

The ACS website is starting to generate some traffic. In December, we had a total of 562 visitors, 10 percent of whom were from outside the U.S. The top 12 countries to view our site in December were: U.S. - 401 visitors; Australia - 13; Canada - 12; United Kingdom - 9; South Africa - 6; Japan - 5; Austria - 3; Netherlands - 2; Slovenia - 2; Belgium - 2; France - 1; Norway - 1. Since the site has been up, we have seen visitors from every continent, excluding Antarctica. Traffic on the site is steadily increasing, and this is good news for our members.

Our thanks to all who have given us a link from their website. This generates quite a bit of traffic. In December, we had 169 visitors come to us from New England Cheesemaking Supply alone - Thanks Ricki! We had another 27 visitors

from the California Milk Advisory Board and 18 from Washington State University.

At the conference in Seattle we talked about making the ACS website the premier cheese site on the net as well as a valuable resource to our members. We made a plea for any information our members might have that would help us to achieve these goals. Our thanks goes out to the few members who provided us with usable info. We still need lots more!

The type of things we need are useful or interesting facts about making cheese, selecting and buying cheese, handling cheese, using and cooking with cheese, etc. Interesting information on the history of cheese(s) would also be helpful.

If you have a website and we do not have you listed with a link to your site, let us know. If you would like your products

showcased in our featured cheese section, send us information on your products and your operations.

We would really like to be able to put up a page listing restaurants and retailers that carry your cheese and sort them geographically, but to do that we must receive that information from you. Remember, if you can send the information by e-mail or on a disk, it can get up on the site much faster and cleaner. If all you have is printed material, we can still use that, it just takes longer.

You can e-mail us at:  
dhaws@pcis.net  
or write to us at:  
ACS Website  
RR 1 Box 298  
Fordland, MO 65652

## PASTEURIZER LENDING PROJECT CREATED BY SMALL DAIRY PROJECT - SOUTH SUTTON NEW HAMPSHIRE

The Small Dairy Project is proud to announce the awarding of the first pasteurizer in the Pasteurizing Lending Program to Donald Dreifuss of Britton Hill Farm, Unity, New Hampshire. Donald will have free use of the machine, built by Micro Process Designs, for the period of six months. During this time frame he will be able to produce a value-added product from his milking Nubian herd of goats.

The Pasteurizing Lending Program (PLP) provides the use of a 25 gallon pasteurizer to a qualifying farmer. The farmer will use the machine for a six month period after which they can either return, buy, or lease the machine. The lending program will then begin with another small dairy.

What are the advantages of the PLP? A pasteurizer is a large capital expense for the small dairy farmer. By loaning the machine for a trial period, the farmer can test their business skills, as well as

cheesemaking, yogurt making, and bottled milk skills. All of these trials are possible without risking the entire financial solvency of the small dairy. If the small dairy continues their enterprise after the award period, they have leverage in approaching a bank or leasing agent in order to purchase the machine or look into other capital enhancements.

Since the Micro Process Design Vat Pasteurizer is a 25 gallon unit, it suits itself not only to the goat industry, but also to small herds of milking cows. The unit is built according to the Federal Pasteurized Milk Ordinance. The unit is so designed as to receive a bottler and capping modular which is in the process of being designed and manufactured. Funding for the program has come from the following sources:

Connecticut River Joint Commission  
Cricenti's Market  
New London Trust  
Members of King Solomon's Lodge,

Elkins, NH  
Lake Sunapee Bank  
Vermont Department of Agriculture  
Upper Valley Co-Operative  
Sutton Co-Operative  
Wendell Vet Clinic  
Providian Bankcorp  
New England Feeds  
New Hampshire Dept. of Agriculture

The Small Dairy Project continues to receive applications for future award periods. For information on the machine, an application for the PLP or to contribute to this unique program contact:

The Small Dairy Project  
HC 65 Box 45  
Bradford, NH 03221  
603-927-4176

(EDITORS NOTE: We think this program is a good idea! We would also like to see it done with separators.)

## CALIFORNIA CHEESE & BUTTER ASSOCIATION 33RD ANNUAL CONVENTION APRIL 23 - 25 1998

The 33rd annual California Cheese and Butter Association convention will be held April 23, 24 and 25 at L'Auberge Resort and Spa in Del Mar California.

L'Auberge is located in Del Mar off Interstate 5 at the Via de la Valle exit, 20 miles north of San Diego. Shuttle service available, Cloud 9 - \$16.00 per person

one way from San Diego Airport. For reservations call (619) 278-8877.

For more information about the convention contact Rhada Stern at 415-380-8230



# CALENDAR OF EVENTS

Provided by the staff at Cheese Market News

**Jan. 27-28, 1998: Agribusiness Executive Management Program, Module Two:** Managing People, Madison, Wis. Contact Joan Gillman, 608-262-9982, FAX 608-263-0818.

**Jan. 28, 1998: Price Volatility and Risk Management Workshop,** Chicago. Contact Ellen Gowen, International Dairy Foods Association, 202-727-4332, FAX 202-331-7820.

**Jan. 30, 1998: National Food Distributors Association 1998 Winter Convention and Food Show,** Palm Springs, Calif. Call NFDA, 312-644-6610, FAX 312-527-6783

**Feb. 3-4, 1998: Wisconsin Dairy Field Representatives Conference,** Madison, Wis. Contact Bill Wendorff, 608-263-2015, FAX 608-262-6872.

**Feb. 6-8, 1998: International Foodservice Brokers Association Annual "Top to Top Conference,"** San Antonio, Texas. Contact Karen Ribler, Association of Sales and Marketing Companies, 703-758-7790, FAX 703-758-7787.

**Feb. 8-12, 1998: Practical Short Course on Processing of Nutraceuticals: Preparation, Extraction, Separation/Purification, Regulations and Packaging,** Houston. Contact Dr. S. S. Koseoglu, Food Protein R&D Center, Texas A&M University, 409-845-2749, FAX 409-845-2744.

**Feb. 9-11, 1998: Natural Colors and Flavors Conference,** Tampa, Fla. Jennifer Winch Intertech Conferences, 207-781-9800, FAX 207-781-2150.

**Feb. 17, 1998: BFP Milk Seminar,** Visalia, Calif. Sponsored by Chicago Mercantile Exchange. Call 800-331-3332, FAX 312-466-7466.

**Feb. 19, 1998: BFP Milk Seminar,** Sacramento, Calif. Call 800-331-3332, FAX 312-466-7466.

**Feb. 19-20, 1998: "Concentrated and Dried Milk and Whey Products Symposium,"** San Francisco. Contact Laurie Jacobson, Dairy Products Technology Center, 805-756-6097, FAX 805-756-2998.

**Feb. 24, 1998: BFP Milk Seminar,** Orlando, Fla. Call 800-331-3332, FAX 312-466-7466.

**Feb. 24, 1998: Home Meal Replacement Seminar,** Edison, N.J. Contact Eastern Dairy-Deli-Bakery Association, 201-288-5454, FAX 201-288-5422.

**Feb. 24-25, 1998: Agribusiness Executive Management Program, Module Three: The Structure of Agricultural Markets,** Madison, Wis. Contact Joan Gillman, 608-262-9982, FAX 608-263-0818.

**Feb. 26, 1998: BFP Milk Seminar,** Albany, N.Y. Call 800-331-3332, FAX 312-466-7466.

**March 1-5, 1998: Practical Short Course on New Developments in Membrane Technology: Food and Wastewater Applications,** Houston. Contact Dr. S. S. Koseoglu, Food Protein R&D Center, Texas A&M University, 409-845-2749, FAX 409-845-2744.

**March 3, 1998: BFP Milk Seminar,** Dubuque, Iowa. Call 800-331-3332, FAX 312-466-7466.

**March 2-3, 1998 New York State Cheese Manufacturer's Association Annual Meeting and Cornell Conference on Product and Market Research,** Syracuse, N.Y. Contact Janene Lucia 607-255-2892 Fax 607-255-7619

**March 2-4, 1998: Principles of Sensory Evaluation Seminar,** Palo Alto, Calif. Contact Julie Olson or Diana Williams, Tragon Corp., 415-365-1833, FAX 415-365-3737.

**March 3-5, 1998: Milkfat as a Food Ingredient Short Course,** Madison, Wis. Contact Kerry Kaylegian, Wisconsin Center for Dairy Research, 608-265-3086, FAX 608-262-1578.

**March 5, 1998: BFP Milk Seminar,** Stevens Point, Wis. Call 800-331-3332, FAX 312-466-7466.

**March 10, 1998: Clean-in-Place Seminar,** Madison, Wis. Contact Bill Wendorff, 608-263-2015, FAX 608-262-6872.

**March 11, 1998: From Product to Profit Seminar,** Lincoln, Neb. Call Arlis Burney, 402-472-8930, FAX 402-472-1693.

**March 11-13, 1998: 28th Western Dairy Conference,** Silverdale, Wash. Contact Washington State Dairy Federation, conference coordinators, 360-412-0875, FAX 360-412-0876.

**March 16-18, 1998: Home Meal Replacement Summit,** Dallas. Contact Jonathan Guloyan, Industry Events International, 781-663-6620, FAX 781-663-6436.

**March 16-20, 1998: Cheesemaking Production Principles and Technology course,** Madison, Wis. Contact Bill Wendorff, 608-263-2015, FAX 608-262-6872.

**March 17, 1998: BFP Milk Seminar,** Twin Falls, Idaho. Call 800-331-3332, FAX 312-466-7466.

**March 17-18, 1998: Agribusiness Executive Management Program, Module Four: Management,** Madison, Wis. Contact Joan Gillman, 608-262-9982, FAX 608-263-0818.

**March 17-20, 1998: Eighth Annual Cheese Short Course I,** San Luis Obispo, Calif. Contact Laurie Jacobson, Dairy Product Technology Center, 805-756-6097, FAX 805-756-2998.

**March 18-20, 1998: Efficient Consumer Response Conference,** Atlanta. Call 800-611-2720 ext. 801, FAX 216-963-0319.

**March 19, 1998: BFP Milk Seminar,** Yakima, Wash. Call 800-331-3332, FAX 312-466-7466.

**March 19-20, 1998: Aseptic Processing and Packaging Workshop,** Davis, Calif. Contact Anna Trunnell, 530-757-8899, FAX 530-757-8634.

**April 2-4, 1998: Introduction to Statistical Methods for Sensory Evaluation of Foods,** Davis, Calif. Sharon Munowitch, 916-757-8896, FAX 916-757-8558.

**April 6-8, 1998: Sensory Evaluation: Overview and Update,** Davis, Calif. Sharon Munowitch, 916-757-8896, FAX 916-757-8558.

**April 8-9, 1998: Efficient Foodservice Response Conference,** Chicago. Contact Hudson Riehle, 202-331-5962, FAX 202-973-5379.

**April 13-14, 1998: Implementing HACCP in Food Service Operations,** University Park, Pa. Contact Pennsylvania State University, 814-865-8301, FAX 814-865-7050.

**April 15-16, 1998: Fifth Annual Milk Processing and Technology Short Course,** Modesto, Calif. Contact Laurie Jacobson, Dairy Product Technology Center, 805-756-6097, FAX 805-756-2998.

*President's letter....continued* try. The idea is that any or all of the information can be changed to fit the season or event. In addition, Linda worked with Patrick Geoghegan in the past year to provide the office with an updated media list.

The 1997 Annual Meeting and Conference figures are in, and showing a nice income for our society, despite the more expensive location of Seattle. Many sponsors came forward to support the Seattle conference in many different aspects, and we thank them all again. (Look for sponsors in your conference wrap-up issue of the newsletter.) Our thanks go out to Jeff Bergman and Paige Lamb for the many hours of hard work and commitment to present us with really great events, as well as a beautiful location!

The 1998 Annual Meeting and Conference has been announced! Madison, Wisconsin is the place to be in August of this year. The dates will be

Thursday, August 6 through Sunday August 9. Three hotels in the area have agreed to a verbal commitment; contracts will be looked at right after the first of the year. Member Dan Carter, and UW alumnist, has been helping with arrangements with the Center for Dairy Research and UW staff to provide locations for this year's general sessions. Conference co-chairs Regi Hise and Deborah Haws have provided a preliminary program to the executive committee for review, and will be announcing more information as it becomes available.

In 1998, you will see the newest "Cheesemakers" book in print. Printings of this important reference tool have been undertaken in past years, 1987 and 1992. Mary Keehn and Theresa Battel began collecting information for the booklet early last year, and we are now seeking bids on the printing. This booklet should be available early this spring.

The newly formed "goat cheese sub-

committee" has been presented with an idea for a National Goat Cheese Month, with emphasis on products and promotion during a month long period. Goals are for the event to be a yearly celebration for goat cheesemakers. Discussion is continuing at this time, and I've asked for a proposal before the end of January.

As in years past, we will also be involved in the Bon Appetit events, and the National Cheese week, but in a more organized and fruitful manner for ACS. Again, I would like to reiterate all of my wishes for 1998 and thank all of you who volunteered your time and energy to make our organization a better one. May 1998 bring ever more concerted efforts from new members.

Sincerely,

Dominique Delugeau, President

## ENTRY KITS AVAILABLE FOR 1998 WORLD CHAMPIONSHIP CHEESE CONTEST

Free contest entry kits are now available for the 1998 World Championship Cheese Contest. Cheesemakers from around the world will have the opportunity to make the finest real cheese, and to vie for the title of World Champion Cheesemaker. The 22nd biennial World Championship Cheese Contest will be held March 16-20, 1998, in Green Bay, Wisconsin.

The World Championship Cheese Contest has been refined and expanded to make this contest the best ever. Sheep's milk cheese, a new Brie class and three classes for butter join this international event, according to John Umhoefer, executive director, Wisconsin Cheese Makers Association, which organizes the event.

Sheep's milk cheese can now be entered into the contest. "Two added classes, fresh sheep's milk cheese and aged sheep's milk cheese, will give farmstead and small cheesemakers the opportunity to participate in an official evaluation," explained chief judge William Schlinsog.

Brie cheese will now be judged in a class of its own. Brie cheese was previously judged in the open class for soft cheeses.

The 1998 contest will add three butter classes. Butter was successfully introduced at the 1997 United States Championship Cheese Contest, notes Schlinsog. Three classes: salted butter, unsalted butter and flavored butter will be added.

In other changes, retail packaged cheese and butter will now be judged on packaging alone. In the past, 25% of the retail packaged cheese or butter score was determined by the quality of the cheese or butter inside the packaging. This year, entries in the Retail Packaged Cheese or Butter class will be judged only on aesthetic qualities including attractiveness, utility and convenience of the product's shape and packaging. Retail packaged cheese or butter may be no larger than two pounds, and may be as small as a fraction of an ounce.

Other changes include allowing flavored reduced-fat cheeses to compete in the reduced-fat cheese class; Feta cheese to be entered in packaging as small as four ounces; and fresh or aged goat's milk cheese to be entered in packaging as small as two ounces.

In all, 27 classes are open for competition. These include:

Cheese Classes

Class 1: Cheddar, made after September 10, 1997

Class 2: Cheddar, made before September 10, 1997

Class 3: Colby, Monterey Jack

Class 4: Swiss Style

Class 5: Brick, Muenster, Limburger

Class 6: Mozzarella

Class 7: Provolone

Class 8: Blue Veined

Class 9: Edam, Gouda

Class 10: Brie

Class 11: Feta

Class 12: Baby Swiss Style

Class 13: Flavored Natural

Class 14: Cold Pack Cheese/Cheese Food

Class 15: Pasteurized Process Cheese/Cheese Food

Class 16: Reduced Fat

Class 17: Fresh Goat's Milk

Class 18: Aged Goat's Milk

Class 19: Fresh Sheep's Milk

Class 20: Aged Sheep's Milk

Class 22: Open Class (Soft)

Class 22: Open Class (Semi-Soft)

Class 23: Open Class (Hard)

Butter Classes

Class A: Salted Butter

Class B: Unsalted Butter

Class C: Flavored Butter

Retail Packaged Class

Class 24: Retail Packaged Cheese or Butter

To receive an entry kit containing information for the 1998 World Championship Cheese Contest, or for more information, contact the Wisconsin Cheese Makers Association, P.O. Box 2133, Madison, WI 53701. Tel: (608) 255-2027; fax (608) 255-4434. Or find complete contest information on the internet at [www.worldcheesecontest.org](http://www.worldcheesecontest.org). Entry forms must be received by February 20, 1998. Cheeses must arrive at the Lov-It Creamery in Green Bay, WI, no later than March 9, 1998.



PROTECTIVE CULTURES.....is reduced by the growth of yeasts. These microbes metabolize lactic acid thus removing one of the major preservatives on the surface of the cheese. Trials (figure 1) show that use of ALC-01 prevented growth of *Listeria* in both naturally contaminated and in artificially contaminated cheeses."

Dreyer said protective cultures are available from Wiesby for use in various cheeses, fermented milks and yoghurt, breads, salami, and silage control Coliforms, *Clostridia*, yeasts and moulds, and hetero-fermentative lactobacilli. Dreyer said the list of applications for protective cultures continues to grow rapidly. They are emerging as an important technology in food protection and food safety.

For further information please contact:  
For Wiesby Products / Technical Information  
Ian Barlow  
Applied Technical Products Pty Ltd,  
121 Lewis Street, Wantirna South, Vic  
3152, Australia.  
Tel: 03) 9801 0199 Fax: 03) 9887 2942

## WHAT ARE PROTECTIVE CULTURES?

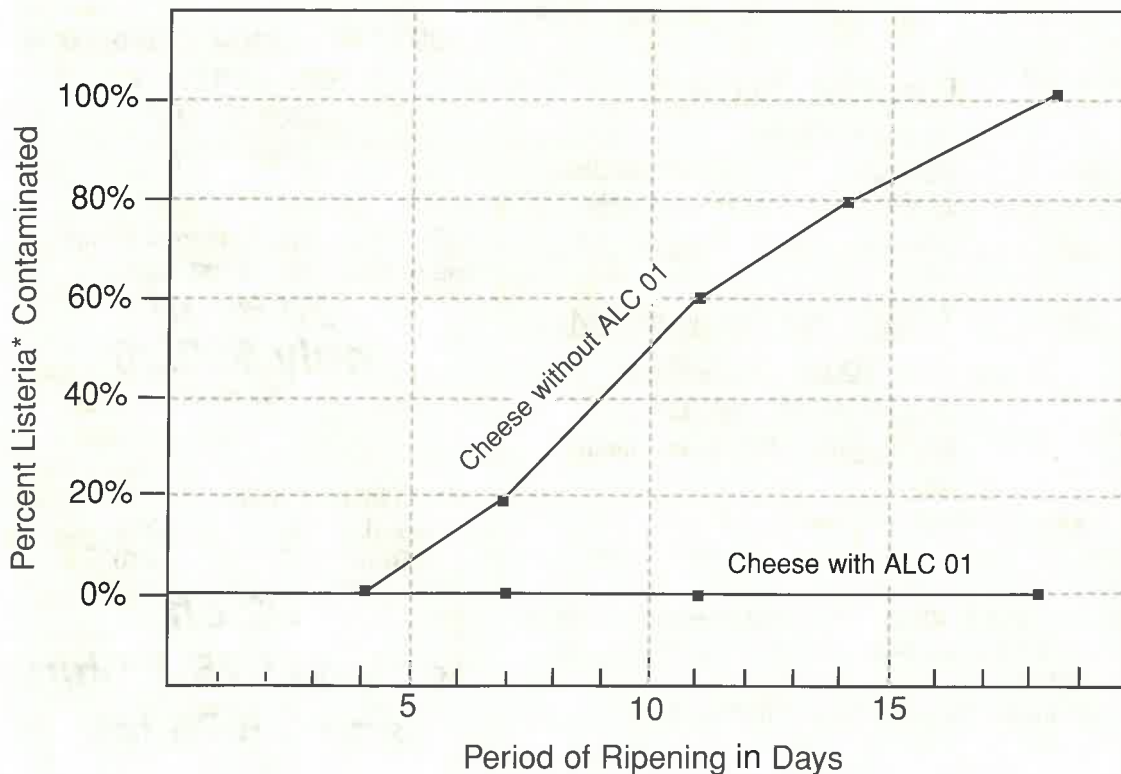
Protective Cultures are safe edible microbes (lactic-acid and related bacteria) that can protect foods from pathogens and spoilage microbes. They do this by biological competition producing natural anti-microbial substances that kill unwanted microbes. Protective cultures may have a wide range of activity protecting against many different microbes or have a narrow spectrum of activity. Some protective cultures have a probiotic effect.

The anti-microbial compounds produced by protective cultures include: short chain fatty acids e.g., formic acid, acetic acid, propionic acid and lactic acid; long chain fatty acids e.g., C18 & C19 fatty acids; carbon dioxide; hydrogen peroxide; diacetyl; bacteriocins; and, anti-microbial peptides derived from casein. These are the compounds found in tradi-

tional fermented foods such as yoghurt. Recent research has shown that although some of the compounds may, as individual substances, have a low anti-microbial activity, when combined they can generate potent anti-microbial systems.

Bacteriocins are peptides with several unique properties ideal for food applications.

They cause rapid death of susceptible bacteria; they are highly specific in action (they can be tailored so as to not affect starter cultures or other useful microbes in food); most are completely hydrolyzed by gastric enzymes and therefore do not persist in the human body to cause allergy or immune stimulation (unlike antibiotics and preservatives which persist in the body with potentially adverse affects); and, they are stable at low pH (pH2) and have excellent stability to heat.



**Figure 1**

Protective culture ALC 01 inhibits the growth of *Listeria* on the surface of naturally contaminated soft (Muenster) cheese.

\**Listeria* contamination at 100% means that all examined samples were contaminated with *Listeria*. 0% means that none of the samples were contaminated





# THE CHEESE SHOP OF WILLIAMSBURG VIRGINIA BEGINS ITS SECOND QUARTER CENTURY AND SECOND GENERATION OF POWERFUL, GOOD FOOD

Twenty-six years ago Tom and Mary Ellen Power opened their first retail shop and introduced to Tidewater, Virginia, the romance of specialty cheeses and fine wines from around the world. Twenty-five years ago Tom and Mary Ellen opened a second location in Colonial Williamsburg. When traveling through Europe's grand cities or rustic villages you will forever find romantic, provincial cheese and wine shops. However, in the United States, it is much more rare to find a passionate food retailer the likes of The Cheese Shop. This year, Tom, Mary Ellen, and second generation daughter Cathy are celebrating the start of their second quarter century in business.

Walking into The Cheese Shop is an impressive visual and delightful aromatic experience. The shop is 2,500 square feet, and the focus and shining star of the shop is the more than 200 cheeses displayed daily on a thirty foot butcher block counter. "Cheese forms a central part of any culture, you have only to look at the paintings of the Renaissance, which always have a great big wheel of crumbling cheese in among the figs and pomegranates, to know that cheese is a staff of civilization as well as life," says Tom Power. "Our goal is to provide an

environment which encourages the understanding, appreciation and the promotion of farmstead and natural specialty cheeses, as well as fine wines and the highest quality specialty foods. Each year we travel to different cities and food conferences to discover new products.\* We especially enjoy discovering new artisan producers. Our customers are food lovers too and are increasingly interested in their food's origins and cultural history...they want to know the story behind the product."

"Our daughter and partner, Cathy Power, has worked in the business since she was a child and has been part of the management team since graduating from college in 1986. Many of our employees are tenured 10, 15 and 25 years, and are considered crucial to the success of the business. All of our employees are important and a big part of our success; we appreciate and respect their ability and invaluable contributions" says Tom Power.

The Cheese Shop at Williamsburg, VA  
424 Prince Street - Merchants Square  
Williamsburg, VA 23185  
757-220-0298  
fax 757-564-3927

CODEX....continued

Note: If you would like a copy of the SCA's documentation and Professor Wheelock's argument, please contact the ACS office at (414) 728-4458.

## LATE BREAKING NEWS

The 30th Session of the International Codex Committee on Food Hygiene (CCFH) has reached a consensus on the ongoing debate over the use of raw milk versus pasteurized milk for cheese. The decision was a compromise, resulting in the proposed wording: "...products covered by this standard should be subject to a combination of control measures, which may include pasteurization, and these should be shown to achieve the appropriate level of public health protection."

Subject to approval in the next session of the Codex Alimentarius Commission, scheduled for July 1999, the wording will be included in the Draft Code of Hygienic Practice for Milk and Milk Products.

The ACS office is putting together a member scrapbook for use in publicizing our organization and its members. Please send any color copies of articles or press releases concerning your operations to Laura Jacobs-Welch at the ACS administrative office.

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