Conference Wrap-up 1998

The American Cheese Society

S P E C I A L I S S U E

I CAN'T BELIEVE WE WON!

Best of Show
Mary Falk - Love Tree Farm
Trade Lake Cedars

The American Cheese Society

SOMEBODY WAS HAVING FUN

NOW THAT'S AN INTERESTING CHEESE!

HACCP – WHAT'S THAT?

MILK QUALITY AND HACCP FOR SMALL CHEESEMAKING OPERATIONS

by: Richard Haws

This topic was presented by Marianne Smukowski, Dairy Safety Applications Coordinator at the Wisconsin Center For Dairy Research. What could have been a very routine discussion turned extremely lively as Marianne pointed out that it is no longer enough to DO all the things farmstead cheesemakers routinely do to ensure a clean, healthful product; you must be able to PROVE that you do it. This means documenting what your standard procedures are and keeping records showing that the procedures are followed, every time.

Welcome to the future and HACCP – Hazard Analysis Critical Control Point. While HACCP programs are not currently required in cheesemaking operations there are at least three pretty good reasons to consider starting one:

1. You may some day be required to do so - beef, poultry, and seafood packers already are.
2. It provides a good defense in the event of a product liability lawsuit
3. Your competitors are doing it and many customers are now demanding that their suppliers have a HACCP program.

Marianne explained that most people already do most of the things required in a HACCP program, they just don't document it.

The first thing to do is to review your processes and identify each point at which hazards to high quality, non-contaminated product may be introduced or identified (These points are called CCPs – Critical Control Points). You then establish those critical control procedures which must be followed. As an example, Marianne went on to review two of these points and the critical control procedures as outlined in the chart below.

Once you have identified all Critical Control Points and established standard procedures for each, you need to record the CCPs and procedures in a manual. All employees need to be trained in those procedures, and the training needs to be documented.

Finally, you will need to develop check sheets and recording forms so that each time a procedure is performed the time and date can be recorded, test results recorded, and lot or vat numbers assigned. These records should be kept on file for as long as there is any chance you might need them. Generally, this should be several times the expected shelf life of your product.

In the session there was quite a bit of discussion as to why it was not enough to simply do these things. Many cheesemakers indicated that the additional record keeping seemed redundant and unnecessary. Marianne responded by pointing out that in addition to three reasons already stated, HACCP programs can be very useful in determining exactly where the process broke down when you have a batch of cheese that doesn't turn out as expected. This makes it easier to go directly to the problem point and correct it in a timely manner.

The bottom line seems to be that, like it or not, the time has come for all of us to seriously consider developing good HACCP programs. If developed and implemented in a thoughtful fashion, a HACCP program can provide enough benefits to easily off-set the added effort.

EDITOR'S NOTE:

HACCP programs can be successfully used as part of your marketing strategy. Also, HACCP programs should be implemented in the milk room for those of you who milk. You are never too small for HACCP to apply considering upcoming changes in consumer awareness and regulations.

Also, HACCP programs may be a way to combat the forces pushing for mandatory pasteurization, i.e NCI and CODEX.

CCP	Hazard/Concern	Control Point	Critical Limit	Monitoring/ Frequency	Records/ Location	Responsibility	Corrective Action	Verification
Milk Intake	Microbiological	Temp	• ≤ 45°F	- Every Batch	Plant Office	Owner/ Cheesemaker	- Check Cooling	- Thermometer
	Chemical/Drug Residue	Screening	• No Positives	- Every Batch			- Reject	- Calibrate Test Kit
Pasteurization	Microbiological	Temp Time	145°F 30 min	Continuous	Recording Chart	Owner/ Cheesemaker	Heads Space Heated Recirculate & Heat	Chart - Indicate Therm. Calibration

AMERICAN CHEESE SOCIETY ANNUAL CONFERENCE FESTIVAL OF CHEESE 1998

by: Janet Tarlov

I have been attending the ACS conference, and helping out with the Festival of Cheese since the conference in San Francisco in 1992, and this year's Festival was the best ever. Not only was the number of entries in the judging the highest in the history of the conference, but the overall quality of the cheeses was a true manifestation of the American specialty cheese industry coming of age after many years of fostering by our society. Beyond that, the organization and thoughtfulness of this year's conference organizers, Debbie Haws and Regi Hise, and their cohorts was evident in every detail of the event itself.

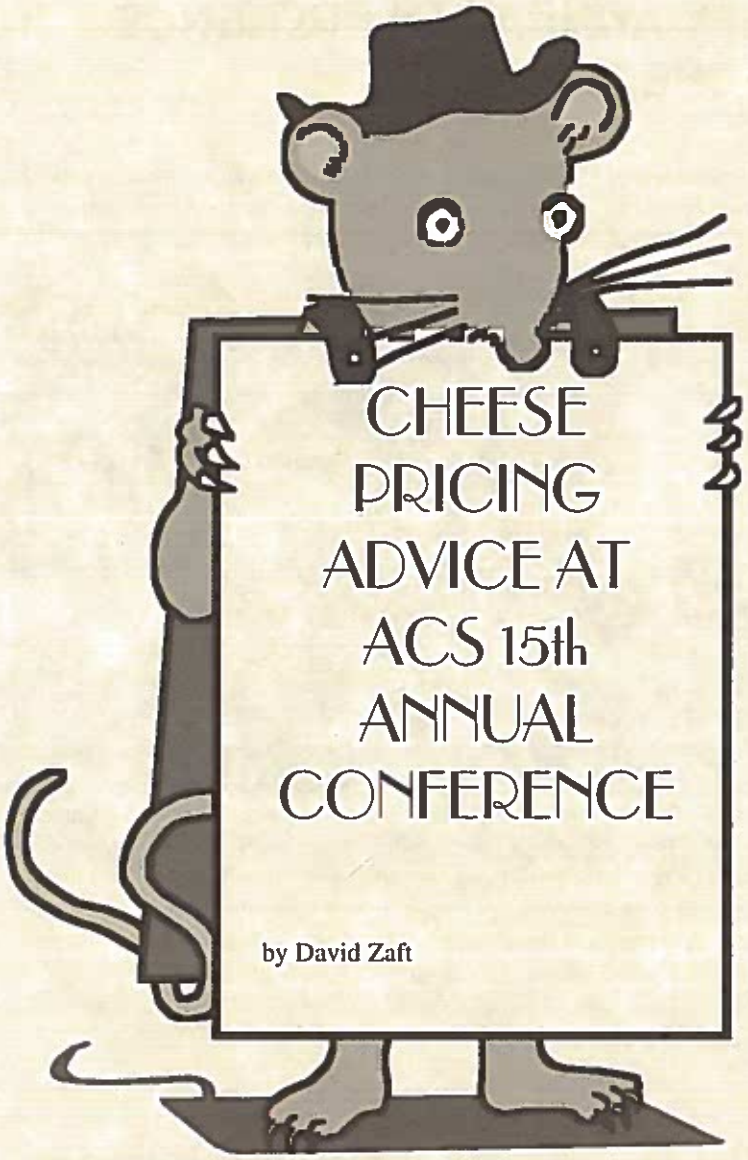
The location of the Festival in Madison was a wonderful combination of the spectacular venue we experienced last year in Seattle, and the facilities and convenience of a modern event center. The newly completed Frank Lloyd Wright building was a gracious and gorgeous setting for our tasting, allowing our conference attendees to mingle and sample in a very civilized manner. Most importantly, the enjoyable surroundings allowed the real star of the event to sparkle, and that is of course the cheese!

When Debbie asked if I would organize the volunteers helping to set up this year's festival, I was thrilled. Having helped at each of the previous festivals, I was anxious to get more involved. Debbie and Regi had already coordinated much of the set up and execution through the conference caterers and the event staff at the venue, enabling me and the small army of volunteers to focus on the really fun task of displaying all of the wonderful cheeses. Because of this forethought, we were able to spend more of our Saturday as conference attendees, and to really enjoy the brief hour or two it took for us to get the cheeses displayed.

This year's festival was truly worthy of the care and passion that the cheesemakers pour into their work. An interesting aspect of the festival this year was a concerted effort on the part of the conference organizers to include the public. My feeling is that this is a very worthwhile concept, especially in years when the conference is located in an area where there is an active food community. The festival is an excellent opportunity for the society to reach out to the larger community and educate chefs, food professionals and enthusiasts about the goals of the society, and the world class products made by its members.

Attendees take notes of their favorites.

Cheesemakers showed some of their treasures.



CHEESE PRICING ADVICE AT ACS 15th ANNUAL CONFERENCE

by David Zaft

Do not undervalue your cheese, was the message delivered by Tera Johnson, formerly of the University of Wisconsin School of Business, as she addressed a crowd of mostly cheesemakers during a workshop titled Cheese Pricing Primer at last August's ACS conference in Madison.

The single best thing a small cheesemaker can do to increase profitability is to examine how the products are priced, and perhaps then to raise the prices. But do not change your prices repeatedly, for that tries the patience not only of your distributors and your retailers but it also chases the customers' attention from the cheese itself - what it tastes like, how it is made, how it can be used - and puts it on the last subject you want your customers to focus on - how much they have to pay. Better for all involved if any jump happens rarely, even if you have to pad the increase a tad to account for unforeseen events.

When setting your prices, Tera explained, it helps to discover the following information ahead of time:

1. Establish your price floor. This is the minimum amount you can charge and still break even; to do this make certain that you set prices that offset both your variable costs (those directly related to making cheese such as the cost of feed, vaccination costs, labor) and your fixed costs (rent, property tax and other costs that remain static no matter how much cheese you produce).

2. Discover the perceived value of your cheese. Ask a friendly retailer (or three) how much they might charge their customers for your cheese. If you can, visit some cheese shops and see if there are similar cheeses and find out what people pay for them. Realize, though, that the market can bear higher prices for farmstead cheeses than factory productions if the former are in stores where retailers can entertain the customers with lots of tastes and regalings of the story behind your cheese.

3. Ascertain what kind of volume you want to produce. If you will never be producing more than 10,000 pounds of a particular cheese annually, and it is unique enough, you will probably be able to sell it for a premium and still sell out easily. If you need to get rid of fifty times that amount, you might want to charge less and hire a broker. (But never go under your price floor.)

Also be aware of factors that add value to your cheese, such as uniqueness, aging, your story, functionality, packaging, established brand identity, consistent quality, and strong relationships with your distributors and retailers. You will be able to charge a higher price whenever these factors exist.

THE BASICS OF PAIRING WINE WITH FOOD

by: Alison Leber & Karin Collins

Ever had to explain to someone that this cheese is gooey and stinky...but in a good way? Or, this wine is minerally, like you stuck your tongue on a wet rock. This could be a description for a classic cheese and wine pair: alsatian munster and an alsatian riesling. But the rules that define what makes this a good pair are subjective. Pairing food and wine is an enormous, complex subject. For the sake of brevity we'll only discuss wine. The following components about wine cover a few basics that will help you on your way to a great match.

Sugar Level or "Dryness"-Dryness is the absence of fermentable sugars. A dry wine can still contain sweet fruit flavors and aromas without being technically sweet. The term "residual sugar" refers to wines that still contain fermentable sugars. The majority of red wines, except ports and some zinfandels, are dry. Whites range in style from dry to sweet. Sweet wines can be a great foil for cheeses with high acidity like sweet, rich sauternes and roquefort. The sugar level of a wine doesn't limit its compatibility.

Tannins: Tannins make your lips feel like they're sticking to your teeth. Tannins are more prevalent in reds than whites due to the juice having skin, stem and seed contact during fermentation. When reds are young, the tannins are rough with short, spiky molecules. With age, the tannins form longer, smoother molecules. The proteins in cheese bond with tannins, smoothing out rough edges, making the wine lush and pleasant.

Acidity: Acids lend crispness to the wine and are integral to the body and texture. A clean, crisp wine cuts through the fat of rich foods. Low-acid wines may be cloying and flabby with rich foods. Acid heightens flavors in general and clears the palate.

Alcohol: Alcohol levels are directly related to the grapes' ripeness when picked. Yeast fermentation converts sugars to alcohol and carbon dioxide. The more sugar, the higher the alcohol potential. Alcohol can be sensed as heat and/or sweetness on the palate. Often, pairing a high-alcohol dry wine with spicy food is overkill. Sweet, high-alcohol wines with rich, strongly flavored foods can balance the scales.

Body: The body, the physical sensation of the wine in the mouth, is the sum of the sugars, acids and alcohol. Descriptives include, heavy, light, lush, thin, round, full and flabby. A light or thin-bodied wine would best be paired with more delicately flavored foods. A richer or heavier wine can hold up to more complex flavors.

Flavor Profile: The flavor profile is an interpretation of the aromas, i.e., how your brain and sinuses label smells. No two people taste in the same way and everyone has a personal sensory library to draw upon. All experiences in life are stored in the brain and smell is the strongest memory trigger. Sinuses have receptors that the molecules of aromas fit into like puzzle pieces. Your brain interprets these as specific smells based on its shape. If the flavors of the food and wine aren't compatible, regardless of the wine's structure, it's not a good pairing. If it doesn't work, don't do it!!

When pairing wine and food notice these aspects of the wine by following this method. First, sniff the wine to make sure there are no off odors and take note of what you smell. Next, swirl the wine (to bring more oxygen in contact with the wine) to release more aromas. Take a small sip, tip your head forward holding the wine towards the front of your mouth and breath through the wine. In other words, slurp it! This will release more flavors and aromas in the mouth and sinuses. With that same sip, roll it everywhere in your mouth to fully sense the wine. The front of the tongue senses sweet and salt, the sides sense astringency, the back senses acid and bitter.

To fully appreciate a wine and food pair, take a bite of the food and while it is still in your mouth take a sip of wine. Notice how the combination will create a third set of flavors. Savor those flavors because every vintage of wine (and piece of cheese, for that matter) is unique, the exact conditions will never happen again. In addition, the circumstances in which you eat and drink influences the experience--the setting, the mood, the company. All these variables add to the uniqueness of the wine and food experience. And to top it all off, tasting and pairing wine and food is subjective. Not everybody has the same tastes. If this were true, we'd all be eating processed cheese food and drinking box wine. If you like a combination and someone else doesn't, good! More for you!

COW, GOAT AND SHEEP

by: Debra Dickerson

This session details the different nutritional profiles of the various milks, the effects on cheesemaking and so much more!

MODERATOR: THE ILLUSTRIOUS GEORGE HAENLEIN Ph.D.., D.Sc..
PANELISTS: MARY HOLBROOK Ph.D. - SLEIGHT FARM
ALISON LEBER - BRIE & BORDEAUX
PAULA LAMBERT - MOZZARELLA COMPANY
SCOTT ERICKSON - BASS LAKE CHEESE COMPANY
JODY WISCHE - OLD CHATHAM SHEEPHERDING COMPANY

A Lively session started in a timely and commanding fashion with Professor George leading the pack out of the gate! The audience was furiously fishing for their pencils as Dr. Haenlein praised the Society for bringing recognition to cheeses made from goat and sheep's milk, while the majority of cheese made in this country is primarily made of cow's milk.

Dr. Haenlein speculated that following in the path of alternative farm products, such as emu's and alligators, we could expect the commercial dairying of water buffalo in America in the near future.

WORLD MILK PRODUCTION

The US retains the title for the leading producer of cow's milk in the world as of 1989. Cows milk production is on the decline in the world, with goats milk on the increase. Sheep's milk production is stationary.

Italy is the largest Sheep's milk producer with 800 thousand tons, with Greece coming in second.

Primary population of water buffalo is in India and China. There is increasing interest in raising water buffalo in Europe. The beast is being imported into Europe.

World Goat's milk production is impossible to measure due to the volume of consumption for home use. Goat production is only measured by the USDA in Texas, as it pertains to Mohair Goats. The apparent pet project of a certain Texas Congressman.

NUTRITIONAL QUALITIES OF THE FOLLOWING MILKS:

SEE CHART

Average composition of milk (100 g) of 4 species [26]

	Ewes	Goats	Cows	Human
Solids, total, %	19.30	12.97	12.01	12.50
Energy, kcal	108	69	61	70
kJ	451	288	257	291
Protein, total, %	5.98	3.56	3.29	1.03
Lipids, total, %	7.00	4.14	3.34	4.38
Carbohydrates, %	5.36	4.45	4.66	6.89
Ash, %	0.96	0.82	0.72	0.20
Ca, mg	193	134	119	32
Fe, mg	0.10	0.05	0.05	0.03
Mg, mg	18	14	13	3
P, mg	158	111	93	14
K, mg	136	204	152	51
Na, mg	44	50	49	17
Zn, mg	-	0.30	0.38	0.17
Ascorbic acid, mg	4.16	1.29	0.94	5.00
Thiamin, mg	0.065	0.048	0.038	0.014
Riboflavin, mg	0.355	0.138	0.162	0.036
Niacin, mg	0.417	0.277	0.084	0.177
Pantothenic acid, mg	0.407	0.310	0.314	0.223
Vitamin B6, mg	-	0.046	0.042	0.011
Folacin, mcg	-	1	5	5
Vitamin B12, mcg	0.711	0.065	0.357	0.045
Vitamin A, RE	42	56	31	64
IU	147	185	126	241
Saturated FA, g	4.60	2.67	2.08	2.01
C4:0, g	0.20	0.13	0.11	-
C6:0, g	0.14	0.09	0.06	-
C8:0, g	0.14	0.10	0.04	-
C10:0, g	0.40	0.26	0.08	0.06
C12:0, g	0.24	0.12	0.09	0.26
C14:0, g	0.66	0.32	0.34	0.32
MCT total (C6 – C14),g	1.58	0.89	0.61	0.64
C16:0, g	1.62	0.91	0.88	0.92
C18:0, g	0.90	0.44	0.40	0.29
Monounsat. FA, g	1.72	1.11	0.96	1.66
C16:1, g	0.13	0.08	0.08	0.13
C18:1, g	1.56	0.98	0.84	1.48
C20:1, g	-	-	trace	0.04
C22:1, g	-	-	trace	trace
Polyunsat. FA, g	0.31	0.15	0.12	0.50
C18:2, g	0.18	0.11	0.08	0.37

RETAIL OPPORTUNITIES:

Goat butter was prevalent during W.W. II as there was a shortage of cows milk. Our affluence (and resulting abundance in supply of cows milk) has pushed goat butter from the shelves.

This is an opportunity waiting to happen: The advantage of the short chain fatty acid in digestibility and in the reduction of cholesterol makes goat butter an option for our health conscious society.

THE PRODUCTION OF WHEY CHEESE:

While the Society has seen fabulous ricotta entered into competition over the last several years, there is a plethora of whey cheeses popular in Europe not made here in the States. Geoteost, Manor, Myzethros, were mentioned.

These cheeses are advantageous as it

Continued .....Page 13

American Cheese Society 1998 Judging Results

Madison, Wisconsin
August 9, 1998

The American Cheese Society is an active, not-for-profit organization which encourages the understanding, appreciation and promotion of America's farmstead and natural specialty cheese.

By providing an educational forum for cheesemakers and cheese enthusiasts, the society fills an important gap in today's specialty food world.

The cheesemakers listed on the following pages represent all the entrants for the 1998 competition. Winners in each category are listed separately.

Unlike other competitions, where cheese are judged on their technical merits only, the American Cheese Society's goal is to give positive recognition to those cheese which are of the highest quality in all aspects—flavor, aroma and texture, as well as technical evaluation. The highest quality cheeses are those which the Society feels deserve the recognition of an American Cheese Society ribbon. The goal of the American Cheese Society judging is to give recognition to the best American-made cheeses submitted for the annual judging.

A Message from Russell McCall

ACS Director of Judging, ACS Board Member

My reflection on this year's judges arrived from all parts of the USA. They tasted and deliberated carefully and thoughtfully, as their written comments illustrate. On Thursday, August 6, 1998, the panel of judges and assistants spent eight hours determining the best of each category, and finally, after great theater and very little conversational restraint, selected the Best of Show.

This 15th annual event (certainly the most prestigious in the USA for farmhouse-style, hand-crafted cheese), was extraordinary in that the quality and cheesemaker dedication was immediately apparent to the judges. We wish to thank the producers for their individuality and obvious hard work.

Russell McCall – *Director of Judging*

Best of Show

Mary Falk—Lovetree Farms
Trade Lake Cedar

Reserve

Karen Galayda—Blythedale Farms
Jersey Blue

Best of Cow

Randy Krahenbuhl—Prima Käse
Gouda

Best of Goat

Mary Keehn—Cypress Grove Chevre
Humboldt Fog

Best of Sheep

Mary Falk—Lovetree Farms
Trade Lake Cedar

A. Fresh Unripened Cheese/Cow

1st Place	**Old Chatham Sheepherding Co.**	Fresh Ricotta
2nd Place	**Vermont Butter & Cheese**	Mascarpone
3rd Place	**Italia Latticini**	Mascarpone

A. Fresh Unripened Cheese/Goat

1st Place	**Fromagerie Belle Chevre**	Fromage Blanc
2nd Place	**Cypress Grove Chevre**	Fromage Blanc
3rd Place	**Sea Stars Goat Cheese**	Fromage Blanc

B. Soft Ripened Cheese

1st Place	**Fromagerie Tournevent**	Chevre Fin
2nd Place	**Kolb–Lena**	Alouette Baby Brie
3rd Place	**Pure Luck Grade A Goat Dairy**	Queso del Cielo

C. American Originals/Cow

1st Place	**Blythedale Farm**	Aged Mountain Cheese
2nd Place	**Sonoma Cheese**	Teleme
	Orb Weaver Farm	Farmhouse Cheese
3rd Place	**Widmer's Cheese Cellars**	Jopenhanna Cheese

C. American Originals/Goat

1st Place **Cypress Grove Chevre**
Humboldt Fog

D. American-Made/Cow

1st Place **Prima Käse**
Raw Milk Gouda

2nd Place **Roth Käse USA Ltd.**
Gruyere

3rd Place **Stella Foods Inc.**
Parmesan

D. American-Made/Goat

1st Place **Cypress Grove Chevre**
Bermuda Triangle

2nd Place **Vermont Butter & Cheese**
Fontina

E. Cheddar/Cow

1st Place **Cabot Creamery**
Cheddar Wheel

2nd Place **Tillamook County Creamery Assoc.**
Sharp White Cheddar

3rd Place **Shelburne Farms**
Raw Milk Clothbound Cheddar

E. Cheddar/Goat

1st Place **Kingsay Cheese of Vermont**
Goat Cheddar

2nd Place **Fromagerie Tournevent**
Chevre Noir

F. Blue-Veined & External Blue Cheese

1st Place **Blythedale Farm**
Jersey Blue

2nd Place **Stella Foods Inc.**
Blue

3rd Place **Great Hill Dairy**
Blue

G. Pasta Filata

1st Place **Aurrichio**
Aged Provolone

2nd Place **Calabro Cheese Corp.**
Fjor di Latte

3rd Place **Mozzarella Company**
Scamorza

H. Feta

1st Place **Vermont Butter & Cheese**
Feta

2nd Place **Besnier America Inc.–California**
Tomato & Basil Feta

I. Low Fat & Low Salt Cheeses

1st Place **Level Valley Creamery**
Neufchatel

2nd Place **Cabot Creamery**
Light Jalapeño Cheddar

3rd Place **Roth Käse USA Ltd.**
Reduced Fat Low Sodium Lacy Baby Swiss

J. Spiced, Herbed & Flavored/Cow

1st Place **Fromagerie Tournevent**
Veloutin

2nd Place **Fleur de Lait**
Neufchatel

Vermont Butter & Cheese
Basil Torta

3rd Place **Tillamook County Creamery Assoc.**
Pepper Jack

J. Spiced, Herbed & Flavored/Goat

1st Place **Vermont Butter & Cheese**
Olive & Herb Impasta

2nd Place **Vermont Butter & Cheese**
Roasted Red Pepper Impasta

3rd Place **Sea Stars Goat Cheese**
Van Goght

K. Smoked

1st Place **Fanny Mason Cheese**
Smoked Baby Swiss

2nd Place **Shelburne Farms**
Raw Milk Farmhouse Smoked Cheddar

3rd Place **Goat Lady Dairy**
Smoked Chabis

L. Farmhouse Cheese/Cow

1st Place **Winchester Cheese Co.**
Raw Milk Gouda

2nd Place **Shelburne Farms**
Raw Milk Cheddar

3rd Place **Oakspring Dairy**
Derby

L. Farmhouse Cheese/Goat

1st Place **Goat's Leap Cheese**
Goat Cheese

Pure Luck Grade A Goat Dairy
Queso del Cielo Ripened

2nd Place **Pure Luck Grade A Goat Dairy**
Plain Chevre

3rd Place **Doeling Dairy**
Chevre

L. Farmhouse Cheese/Sheep

1st Place **Vermont Shepherd**
Sheep Cheese

M. Fresh Goat's Milk Cheese

1st Place **Cypress Grove Chevre**
Chevre

2nd Place **Pure Luck Grade A Goat Dairy**
Farmstead Chevre

3rd Place **Bass Lake Cheese Factory**
Goat Jack with Basil

N. Fresh Sheep's Milk Cheese

1st Place **Lovetree Farmstead Cheese**
Big Holmes

2nd Place **Old Chatham Sheepherding Co.**
Fresh Sheep Milk Cheese

O. Cheese Marinated in Oil

1st Place **Sea Stars Goat Cheese**
Chevre in Oil

2nd Place **Fromagerie Belle Chevre**
Chevre de Provence

P. Cultured Products

1st Place **Cowgirl Creamery/Tomales Bay Foods**
Creme Fraiche

2nd Place **Old Chatham Sheepherding Co.**
Sheep Milk Yogurt

Q. Butter

1st Place **Organic Valley/CROPP Cooperative**
Cultured Butter

2nd Place **Lov-It Creamery Inc.**
Salted Butter

R. Cheese Spread

1st Place **CIBO**
Basil Roasted Walnut Spread

2nd Place **CIBO**
Smoked Jalapeño Spread

3rd Place **CIBO**
Sundried Tomato Spread

S. Aged Sheep's Milk Cheese

1st Place **Lovetree Farmstead Cheese**
Trade Lake Cedar

2nd Place **Vermont Shepherd**
Aged Sheep Cheese

3rd Place **Bass Lake Cheese**
Canasta Pardo

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REAL RENNET AND KILLER CULTURES

by: Debra Dickerson

This session was keenly attended by cheesemakers, distributors, retailers and chefs alike. There was not a peep in the house as the information was eagerly recorded and digested. Below are some of the highlights.

Ricki Carroll began the discussion on rennet with an overview. In the most simplistic terms, rennet turns the liquid into a solid in the cheesemaking process. The active ingredient is an enzyme called rennin. Traditionally, rennet is derived from the lining of a calve's stomach. However there are some vegetable juices and extracts used as rennin, and modern advances in science have enabled microorganisms to produce enzymes that mimic animal rennet.

Types of Coagulants

I • Rennet – enzymes extracted from the fourth stomach of a calf

It is said by some cheesemakers that this makes the highest quality cheese, especially in long hold types. The rennin contains chymosin and pepsin. The pepsin speeds up the curing time.

II • Enzymes
- Vegetable (from the cardoon)
- Microbials (fungal mold bacteria based, i.e. mucor miehei)
- Genetically cloned chymosin

Labeling Requirements For Coagulants
- Only calf rennet needs to be labeled rennet
- Other coagulants need to be labeled as enzymes
- No genetically cloned products are accepted for Organic products
- Cheeses can be labeled rennetless if enzymes are on the ingredient list
- There is no Kosher certified rennet on the market at this time

Use Rate of Coagulants and Their Effects

Calves Rennet
Most common problem is improper dilution
Most of the rennets on the market today are double strength
For a cheddar product, 1 oz per 1000 lbs of milk

Genetically Cloned Coagulant
In a dip curd you must use 30% more due to acid development of curd than you would for a cheddar product. Too little coagulant results in a soft and mushy curd. Too much results in a brittle curd which can result in a bitter flavor.
- Lower temperature - increase set time or add more coagulant
- higher temperature - decrease set time or add less coagulant

Microbial Coagulant Such as *Mucor Miehei*
This coagulant has a very tight window of opportunity. The difference of one minute results in a different product. Use rate equals 0.8 oz per 1000 lbs of milk.

III Cardoon
A member of the thistle family, (Cynara cardunaculas) grows in arid climates. The enzyme is in the stamens. The stamen is ground or broken to release enzymes, then mixed with warm water to make a tea. Strain through coffee filter. Steeping time subjective. Minutes to hours as your day permits. Add directly to milk. Works well with soft goat/or sheep milk recipe. It produces a soft curd. Adds to the flavor described as most interesting. pH of milk is the key , heat milk to 80.6 °F to 86 °F.. Ideal coagulation time = 1 hour.

Method: Break curd by hand, firmer curd if using sheep's milk vs. goat. Goat curd with Cardoon is very fragile. Remove as much moisture as possible before you put into molds by using a cloth and roll, then place into molds. A Manchego mold works well. Add weights or gentle pressure to persuade curds to drain.

Technique is crucial and must be adapted when changing from one coagulant to another.

Shelf Life and Storage of Coagulant

For all types: Enzymes can be stored under refrigeration for 6 months without effecting potency.

Mucor Miehei: Enzyme inhibited at 120 °F and pH above 6.

Rennet: These enzymes are fragile and destroyed by heat and pH. Keep refrigerated.

Killer Cultures

This presentation was made by Insa Dreyer of Weisby of North America. Over the last 10 years, as the fear of food poisoning has increased, the Weisby Company has done significant research into non starter lactic acid bacteria as protective cultures to be used in cheesemaking.

Non starter lactic acid bacteria in the form of lacto bacilli makes its way into the cheese vat by way of raw milk or contamination. It has both positive and negative effects.

Negative reactions are cracks and splits in the cheese, unwanted eye formation, crystallization in texture, and undesirable flavors. There are also positive effects. It enhances flavor and texture, and some strains inhibit unwanted bacteria.

It is this characteristic that is utilized in protective cultures.

Protection is assured if cultures are applied that inhibit the growth of specific bacteria or kills the specific bacteria.

This happens with the use of different metabolic components. Organic acids disrupt the membrane function of the bacteria. Two organic acids are:

propionic acid
lactic acid - which has a

lower pH than acidic acid and has a very detrimental effect on bacteria.

On entering the cell, acid is disassociated in the cytoplasm. The resulting pH is higher.

Protons are released which must be exported to maintain constant intercellular pH. This disrupts the photon movement.

There are two cultures selected by Weisby from the secondary flora of cheeses which are effective as protective cultures.

continued.....page 13

CHEESE FACTORY TOURS

by: Regi Hise

The cheese factory tours on Sunday following the conference provided for a fun and interesting day with very unique educational opportunities. There were also some very big surprises as the day unfolded. The start of the tours was the bus ride itself which took us through Green and Monroe counties. Their historical significance in cheese is that when European immigrant arrived in the nation's heartland in the early 1800's this region so reminded them of their homeland they settled here. Many of them were Swiss and they brought with them not only a taste for Swiss style cheeses but also the expertise to make them. The Swiss influence remains today with the tiny town of New Glarus referred to as our own Little Switzerland. To this day it is more common to see Brown Swiss herds than any other. It is also not surprising that both factories we visited were affected by this Swiss heritage.

PRIMA KASE, MONTICELLO, WISCONSIN

The day started with a visit to Prima Kase, owned by Randy Krahenbuhl who is also the cheesemaker. Randy and his father were the owners of a factory originally known as Town Hall Dairy and about 5 years ago it was purchased by a large cheese cooperative. Randy was making Swiss cheese in traditional copper kettles and about a year after their factory was purchased, the co-op decided that it was not cost efficient and they were going to close the factory. Randy decided that he was not ready to see the factory go by the wayside and put together a deal to buy the factory back. He named his new company Prima Kase. As any cheesemaker knows, it is an uphill battle to start from scratch and succeed, but with the help of his wife Shelly they have made huge inroads.

Randy doe not typically make cheese on Sunday but he agreed to do so for the ACS tour and we were lucky indeed that he did, because Randy had a special treat in store for us. For our visit Randy gave us a snapshot into cheesemaking history. He fired up the copper kettle and made a traditional 180-pound Swiss wheel.

Since we didn't have time to see the entire process from start to finish Randy carefully timed it so that the curd was barely set when we arrived. What we got to see was the curd cutting, cooking and the time honored tradition of pulling the entire vat of curds with one dip of the cheesecloth. Randy also detailed proper techniques for dressing the hoops with cheesecloth, flipping the wheel and redressing it. He then took us through the curing rooms and detailed the curing process for the big Swiss wheels. Randy also took us through a crash course in the grading of Swiss cheese, and a tasting of his Aged Swiss and a number of other varieties he produces. He concluded the tour by talking about the Wisconsin Master Cheesemaker program of which Randy is one of the first graduating members.

If you know anything about Randy Krahenbuhl and his love for cheesemaking you would have expected that Randy was going to make for a great tour. Randy has a huge respect for cheesemaking traditions. In fact one of the things he's done for past tours is work with the cheesemaking museum in Monroe where he makes Swiss cheese in copper kettles over an open fire. Randy has won countless awards from the World and International cheese contests and it was somewhat appropriate that he won this years title as Best Cows Milk Cheese at the ACS contest for his Raw Milk Aged Gouda.

ROTH KASE

About 8 years ago a group of investors including Roth Kase of Switzerland decided to begin cheese production in Monroe, Wisconsin. They purchased a small factory that was producing Muenster and after major or better yet total renovation began cheese production starting with Gruyere. The challenges they faced in starting up the operations were incredible. First they had to get permission to use copper vats, since you can't make a traditional Gruyere any other way. The department of agriculture was not inclined to let them do that. The only allowance for copper vats was through grandfather clauses. Their reason was that the remaining whey would be tainted with copper and not saleable. Through much effort and debate they were finally allowed to build copper vats. The next roadblock was the use of red spruce boards in the curing rooms since wood was also taboo unless it was grandfathered in. To do this they had to agree to build special kilns so that the wooden curing shelves could be sanitized in the kiln after every batch. Getting the factory set up was a huge project and a case study in dealing with regulatory issues.

Fermo Jaeckle, co-owner of Roth Kase and head cheesemaker, Bruce Workman gave us an extensive tour of their curing rooms and affinage programs. In addition to Gruyere, Roth Kase has diversified their production to include a wide range of other specialty cheeses. The conclusion of the tour was a tasting of Roth Kase cheeses that led to an incredible lunch, traditional Gruyere and Swiss Fondue.

As a side note weíd like to mention that Roth Kase does not typically produce cheese on Sunday, and scheduled production just for the ACS tour. About an hour before our scheduled arrival there was an accident at the plant. A large stainless tank exploded and caused enough damage in the factory that we were not able to see production. Everyone was tremendously relieved that no one was hurt and were shocked that Roth Kase still insisted we come and tour the curing rooms and host us for lunch. A very special thanks to Roth Kase and Fermo Jaeckle for hosting us for the tour and lunch when they had a lot of things to deal with from the accident.

Cow Goat Sheep....Continued

allows us to take advantage of the nutrients left in whey,

American's are still discovering cheeses made from milk other than cows. An approach used by Brie and Bordeaux , a cheese and wine shop and a lovely restaurant, is educated sales based on flavor and cross selling vs. selling on type of milk alone. Lots and lots of tastings, both formal and spontaneous. Retailers find that there are many customers who are misinformed concerning lactose intolerance. On the most basic level, this contributes to the sale of goats and sheep's milk cheese, as the intolerance is stated to be of cow's milk.

THE END OF A MYTH

Lactose intolerance. Intolerance to Lactose.

Lactose is the carbohydrate or sugar found in milk.

Aged cheese has little to no lactose. It is removed in the whey and the bit that is left is converted into lactic acid in the cheesmaking process.

Young moist cheese retains more whey and therefore more lactose than aged, drier cheeses.

This is why aged cheeses such a parmasean is recommended for babies, the infirm, and the aged.

Aged cheese can be an acceptable substitute for milk for people who are lactose intolerant providing an excellent source of calcium and phosphorus.

If a person is lactose intolerant, they can not drink milk or eat young cheese. Cow, goat, sheep or water buffalo.

If people have a specific milk allergy, they can not drink that specific milk, or eat a cheese of any age made from that milk.

WELL HELLO, MS. WATER BUFFALO OR..
THE TALE OF MR. LEONARD AND MR. OLSON.

In 1982, the paths of Paula Lambert , Mr. Leonard and Mr. Olson crossed.

Mr. Olson and Mr. Leonard, were the first in the US to breed water buffalo. Much to Paula's dismay, their grand experiment was for a low meat and not the precious, hand formed balls of cheese that Paula was so determined to produce. In Texas by God! Well those of you who know Paula will not be surprised to learn that The Mister's finally gave in and in 1994 Paula Lambert's Mozzarella Company was the first to produce 100% mozzarella di buffalo in the US!

However, it wasn't to be for long. The Mister's tossed in the bucket and by 1997 had enough of the water buffalo, meat and milk. They shipped their beasts off to Los Angeles.

Water Buffalo's are being milked in Los Angeles! (are you surprised?)

RANDOM FACTS:

The highest quality mozzarella di buffalo is made around Naples and Cacerta.

There is a CHEESE DETECTIVE. Employed by the USDA. Mission: to guarantee that the cheese products brought into the US meets standards of identity.

Ital Cheese (ACS MEMBER) making mozzarella di Buffalo.

The beginnings of a water buffalo herd (2 beasts) have made their way to Northern California. (I am not surprised!)

Water Buffalo's are also being milked in England. Fabulous cheese, but not mozzarella recipe.

How do you tell the difference between a River Buffalo and a Bison?

A River Buffalo is built with it's head up to breath and a bison with it's head down to graze!

When making a mixed milk cheese, label according to % of each milk in cheese,

An ACS member who has fed whey to her goats, has found increased health resulting. Adjustment time necessary for animal's system to adjust to nutritional properties of whey in diet. Introduce gradually.

John Eggena (ACS MEMBER) has successfully capitalized on drying goat whey and selling as a freeze dried whey protein powder. High in calcium.

SUGGESTIONS FOR THE SOCIETY:

Encourage production of other types of whey cheeses and whey butters.

Educate on the issue of Lactose in cheese.

(Authors note) This is another way to debunk the myth that cheese should be cheap when taking into consideration the skill, care and handling necessary when aging quality cheeses..

1. LT705 which is a *lacto bacillus romnocis* which inhibits coliforms, yeasts, molds and clostridia. This protective culture is added to the vat of milk at the beginning of the cheese making process with the starter culture.

2. ALCO1 which is an anti listeria culture selected from French muenster cheese. This also inhibits clostridia. This protective culture is made by spraying a prepared solution onto the finished cheese.

Recommended Amounts

The inhibitory effects are different depending on the species of molds, yeast, or listeria. It is recommended to begin with minimum amount, some using as little as 1000/gram others 1,000,000/gram.

Effect of Protective Cultures on Flavor

There is little to no effect on fresh product. There can be an effect on long hold cheese. The advantage is that by adding a specific strain, you control the effect on the cheese.

The advantage is there is no risk of an unidentified strain jumping into the vat and ruining the cheese.

In Closing

Insa clearly stated that these protective cultures are not a substitute for effective cleaning systems. There is no substitute for a thorough cleaning regimen.

Protective cultures give you an element of insurance against contamination.

For additional information, please contact Weisby of North America at 414-332-4790

Or Ricki Carroll at New England Cheesemaking Supply 413-268-3808

Reviewers Comment

Science continues to give us opportunities to improve upon the natural cheesemaking process. There is no substitute for safe standards of practice, high quality of raw ingredients, and meticulous attention to detail. The production of a wholesome product, representing the pride, individual creativity and fierce entrepreneurial independence is what the American Cheese Society is fighting to protect.

WHAT DO PEOPLE DO WITH CHEESE ANYWAY

by: Kate Sander

What do people do with cheese anyway? was the topic of a playful session at the American Cheese Society's annual meeting recently.

Among the attendees' answers: I eat it, I sell it, I merchandise it; it creates an excuse to drink wine; and to tie up a disproportionate amount of space in the fridge.

California-based food marketing communications expert Susan Hughes was the session moderator, and she kicked off the panel discussion by reading these and other responses. Hughes then took a moment to provide a few facts about cheese such as the fact that about 97 percent of households buy some type of cheese and that about 97 percent of all cheese consumed is eaten as an ingredient or part of something else.

Hughes opening was then followed by a fun-filled look at cheese by Dan Smith, a television producer who is currently working on a public broadcasting cheese show. On videotape, Smith had interviewed people in Monroe, Wis., and Madison, Wis., about why they like cheese and how they use it. This included a look into a consumer's refrigerator; a refrigerator replete with a variety of commodity cheeses that met with great laughter from the audience.

Laughter aside, however, the panel also took a more serious look at cheese in people's diets.

Panelist Patricia Baird, a registered dietitian and author, noted that, happily for cheesemakers, people are eating more cheese than ever. From a dietitian's point of view, she also is pleased.

"As a dietitian, I'm pleased because cheese in and of itself is such a source of valuable nutrients, namely protein, calcium, phosphorous, magnesium," she said.

It's important that cheese be viewed in the context of a whole diet rather than as a single food that is often thought of as high-fat and neglected for all its nutritional contributions, she said.

Consumers need to understand that cheese is not only a pleasurable food to eat, it can be part of a healthy diet, she said.

Baird spends much of her time developing recipes, and she talked about developing recipes in which 30 percent or less of the total calories come from fat.

"What I do then is to really rely on cheese as a flavor ingredient," she said. "Where can I get the biggest bang for my buck?"

Giving consumers ways to use cheese is extremely important, agreed panelist Karin Collins, manager of Brie & Bordeaux, a wine and cheese shop and bistro in Seattle.

Collins works to incorporate cheese into recipes and to provide consumers with wine and cheese pairings. She talked about using three different venues; a stand at a farmers market, the retail shop and the bistro to reach consumers.

The farmers market provides her the opportunity to present a tremendous amount of information about cheesemakers, about the farms and about the animals to people who ask questions like "Cow cheese, is there anything but?" and "Sheep's cheese? What does that mean?" Samples also sell the cheese quickly, she said, noting that she develops recipes for customers at the farmers market by cross-merchandising with the produce there.

At the retail shop, she has a much more cheese-educated clientele, but still providing information for the consumer is extremely important, Collins said. She tries to get as much information as possible about the cheese she carries.

The bistro also helps to educate customers and sell cheese to them because it markets cheese in a finished package. People are more willing to try new things and indulge when they go to a restaurant, she said.

Brie & Bordeaux also has started a wholesale program for restaurants in the Seattle area so that they can more easily carry a wide variety of cheese for increasingly popular cheese boards, she said.

People interviewed on the street say even the fish can't get enough cheese.

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Do you think the American Cheese Society should join the Australian Specialty Cheese Association and/or the British Specialty Cheese Association as a group? This would help us keep abreast of happenings around the world.

Please e-mail, write, fax or phone with your opinion.

Also, we want to hear from you if you don't feel comfortable talking to the executive committee. Choose a board member or other appropriate person to pass on your feelings. We want to be accessible to ALL members of the society.

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The American Cheese Society is an active, not-for-profit organization which encourages the understanding, appreciation and promotion of America's farmstead and natural specialty cheeses.

By providing an educational forum for cheesemakers and cheese enthusiasts, the society fills an important gap in today's speciality food world.

You can be a part of this dynamic period in American cheesemaking by joining the American Cheese Society now.

YES, I wish to join the American Cheese Society at the membership level indicated. Send American Cheese Society literature and updates to me at the following address:

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