

DAIRY PIPELINE

Flavored cheeses are here to stay Part two: The cheese stands alone

by Karen Paulus, Wisconsin Center for Dairy Research

The cheese stands alone; perhaps that is the most useful caveat for a cheesemaker who wants to develop a flavored cheese! Remember that the cheese comes first; the flavor you add should complement your cheese, not overpower it. This concept was mentioned repeatedly during CDR's September 2009 artisan short course. Of course, there are exceptions to everything and in this case cheese curds are easily overpowered by flavoring—by design.

Hot peppers popular

As mentioned in the first part of this article (Dairy Pipeline, Volume 21, Number 3), hot peppers are the most popular flavor added to cheese. In fact, 25% of the flavored cheeses entered in the Wisconsin Cheesemakers Association's 2008 world contest were flavored with hot peppers. And one sure way to lose points in the contest is to overdo those hot peppers so that the judges cannot taste the cheese. During the short course, Gary Griesbach, of Garon Foods, shared his philosophy regarding pepper flavor in cheese when he told the class that they should taste the cheese first, then sense the heat and after that it should dissipate.



Why add flavoring?

Why add flavoring to cheese in the first place? Many cheesemakers do it to create new products and add variety. Some flavorings, like cocoa, paprika, and red wine really spruce up a cheese, contributing a unique look and flavor. Adding flavors like chives and dill complement cheese flavor. And some additions, for example cranberries, can accomplish all of the above while also incorporating antioxidants to improve the nutritional profile. It is likely that we will see more nutraceuticals and functional foods in cheese since scientists suspect that cheese may be an ideal delivery system for heart healthy omega-3 fatty acids, vitamin D and immune stimulating probiotics.

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How do you develop a flavored cheese? At the short course, Bruce Armstrong, Saratoga Foods, discussed the importance of balancing flavors. He suggested that you should start by assessing the flavor profile of your base cheese. Is it sharp or mild, creamy or firm, short or lingering? Sharp flavors require a pungent complementary note, while mild flavored cheese benefits from aromatic notes. (See Table 1.) In addition, Armstrong pointed out that pungent flavors like oregano seem bigger when an aromatic like basil is added to the mix. He recommends selecting flavors that will stimulate all your taste buds; salt, sweet, pepper, herbs and spices, the natural acidity of cheese, and some heat for the throat. However, the flavor should be balanced so no single flavor stands out, unless you are making a cheese with a dominant flavor. And if the flavor is in the name of the cheese then you better be able to taste it.

Building a great flavor

Armstrong suggested a few parameters for building a great flavor; sweetness should be 1 to 2%, pepper (white or black) 0.25 to 0.5 %, red pepper 0.05 to 0.5% and herbs 0.05 to 0.15%. For example, when adding black pepper to 100 lbs of cheese then you would add 0.25 to 0.5 lbs of pepper. If you need to adjust your flavoring, tinkering with salt will make the

Table 1.

Pungent spices Sharply affecting taste and smell, penetrating	Aromatic Spices Fragrant, odoriferous, light
Black pepper	White pepper
Oregano	Basil
Garlic	Onion
Cumin	Mace
Chili	Paprika
Celery	Marjoram

Adapted from Bruce Armstrong, Saratoga Foods

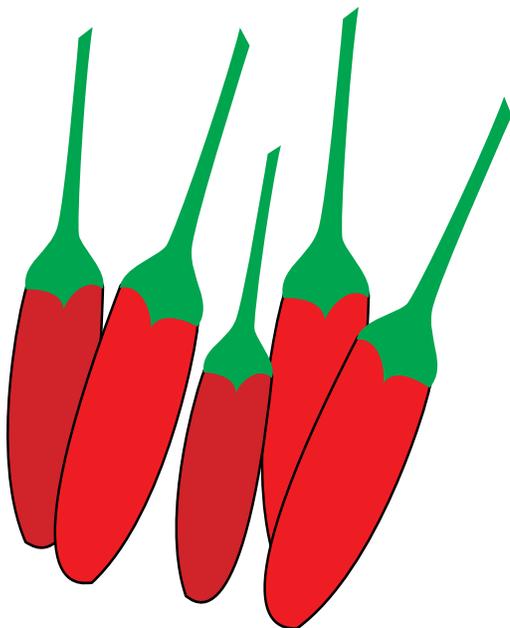
best initial change. To change the heat you need to make a 10% adjustment while a 15% change is the best approach to influencing the flavor.

CDR researcher Dana Wolle presented a thorough review of the rationale and methods of adding beer, wine, and spirits to cheese. He reiterated a common theme; you are making a cheese first, the alcohol is secondary. After that: experiment! Start by examining traditional cheese and alcohol pairings, like delicate beers with young, fresh cheeses or blue cheese with sherry or port. You can blend alcohol into cheese by soaking the curd in alcohol, washing the cheese with an alcohol smear (that also includes salt and culture) or infusing the cheese by injection or soaking.

Use high quality ingredients

Conscientious cooks and award winning chefs will tell you this: always use the best ingredients. The same is true for the cheese matrix. As Susan Larson, Ph.D., told the class, “The quality of an ingredient is not going to get better just by adding it to cheese.” Another aspect of ingredients is shelf life. The ingredient you add has to last as long as the cheese, keeping in mind the cheese environmental limitations of moisture, pH, and A_w .

A final tenet to remember when creating a flavored cheese: don't forget that the cheese aging system is not static, but constantly evolving and changing. When CDR's John Jaeggi worked on a project to add some kid favored flavors (think bubble gum and blue raspberry) to cheese he had to contend with sweeteners and flavors that were fermented by bacteria. The result: flavors favored by no one.



Measuring the heat of a hot pepper

How hot is that chili pepper? We have two methods to measure the quantity of capsaicinoids, the chemicals in hot peppers that trigger the burning sensation in your mouth when you eat them. Before we had High Performance Liquid Chromatography (HPLC) we had the Scoville Organoleptic Test, developed by Wilbur Scoville around 1912. Scoville used a panel of volunteers to “measure” the heat of a variety of peppers. He diluted a solution of each pepper extract with sugar syrup, continuing the dilutions until panelists could no longer detect the heat of the pepper. Scoville’s scale puts sweet bell peppers at the low end (0), jalapeno peppers move towards the middle (3,500 to 8,000), habenero peppers rise closer to the top (200,000 to 350,000) and the current paramount pepper that tops them all is the bhut jolokia from northeast India (1,000,000). This means that you have to dilute the bhut jolokia a million times before the heat is undetectable.

HPLC, or the modern method to gauge the heat of the hot pepper, measures the concentration of capsaicinoids, a group of capsaicins, that contribute the fast bite at the back of the throat and the slow burn on your tongue. The result is reported in American Spice Trade Association (ASTA) pungency units after mathematical correction to weight the effect of the individual capsaicinoids. You can then convert the ASTA units to Scoville units (multiply by 15) although most experts believe the conversion is off by 20 to 40%.

Here’s a few more things you might not know about peppers:

- The seeds of chili peppers are not hot, but they carry a coating of chili oil—which can be very hot.
- US grade pepper spray is rated at 2 to 5 million SHU (Avoid it!)
- Medicinal capsaicinoids are sold in over the counter creams used by people with arthritis to ease joint and muscle pain.



Next Artisan Short Course: Cheeses of the Eastern Mediterranean

You can grab your passport and trek through Greece, Turkey, Cyprus, the Balkans and the Middle East to see and taste traditional cheeses of the region. Or, you can attend the next CDR artisan short course that will focus on cheese from the Eastern Mediterranean region. The course, scheduled for September 21-23, 2010, will include a cheesemaking lab and a culinary lab showcasing a variety of cheeses. Put the date on your calendar now.

Each year CDR offers a variety of short courses, you can find the entire schedule listed on our website: www.cdr.wisc.edu. The artisan series, featuring one course each year, have ranged from the Art of French Cheesemaking to the 2009 session on Flavored Cheeses.

September 21-23, 2010



“ You have to dilute the bhut jolokia a million times before the heat is undetectable.”

You can't make eyed-cheeses from ewe's milk (Or: You can't make I's from U's)

W.L. Wendorff, Dept. of Food Science, G. Mode, and J.J. Jaeggi, Wisconsin Center for Dairy Research, University of Wisconsin-Madison

We know that milk composition influences cheese. For example, the fat content and protein concentration of milk determine if you can make a low-moisture, part-skim mozzarella or a mascarpone from a particular source of milk. The species supplying milk also influences the variety of cheese that can be from that milk. In an earlier study (Wendorff et al., 2008), we reported on the limitations of using sheep's milk to produce smear-ripened cheeses due to the difference in casein content of cow's vs. sheep's milk. Since sheep's milk contained a higher proportion of α_{s1} -casein, the body of the smeared brick cheese was firmer and body breakdown was slower than the comparable cow's milk brick cheese. We were able to produce smear-ripened sheep's milk cheeses but they had different aging patterns compared to cow's milk smear-ripened cheeses.

Another type of cheese that seems to be sensitive to species differences are the eyed-cheeses, like swiss or emmentaler. Green and Grandison (1985) reported that curd firmness is closely related to the content of α_{s1} -casein in milk and α_{s1} -casein is basic to the formation of the network in the curd. As shown in Table 1, there are unique differences in casein composition of different species of milk.

Table 1. Casein composition of milk from various species.

Casein	Cow	Goat	Sheep
α_{s1} , %	35	5	(56)
α_{s2} , %	10	25	---
β , %	40	50	33
κ , %	15	20	11

Ref: Anifantakis, E.M., (1986)



Figure 1. Typical swiss cheese produced from cow's milk.

Figure 1 shows a typical swiss cheese from cow's milk that has the unique balance of casein types for good eye formation in the cheese.

Less structural casein

Goat's milk contains significantly lower levels of α_{s1} -casein (structural casein) than cow's milk and much higher levels of β -casein (soluble casein). With that casein composition, goat swiss-type cheese curd will have a softer body, lacking the curd structure to hold the shape of eyes when formed in the cheese. The result will be collapsed eyes or irregular eyes as shown in Figure 2. However, the flavor of the goat swiss-type cheese is fairly similar to that of cow's milk swiss cheese with a slightly sweet, nutty character.

Figure 2. Swiss-type cheese produced from goat's milk.



Since goat's milk, with low β casein and high α_{s1} -casein, produces a soft-bodied cheese with collapsed eyes, what are the possibilities for a sheep's milk swiss-type cheese? Previous studies have shown that the high levels of α_{s1} -casein in sheep's milk produce a cheese curd that is more dense or firmer than cow cheese curd. How might the denser curd influence eye formation in a sheep swiss-type cheese? What flavor would this cheese have? To answer these questions, we decided to produce a baby swiss cheese from both cow's milk and sheep's milk to evaluate eyed cheese made from sheep's milk.

Materials and Methods

Milk supply

Frozen mid-lactation sheep's milk was obtained from the University of Wisconsin Experimental Station at Spooner, Wisconsin. Prior to cheesemaking, the sheep's milk was thawed at 45°F over a 2-day period. Raw cow's milk was obtained from the University of Wisconsin Babcock Hall Dairy Plant.

Cheese manufacture and sampling

Two licensed Wisconsin cheese makers manufactured the baby swiss cheeses in the University of Wisconsin dairy processing plant. Two vats each of cow's milk (500 lbs of milk) and sheep's milk (500 lbs of milk) were made from the unstandardized whole milk. Milk for each vat was pasteurized at 164°F/19 s and cooled to 90°F before inoculation. Each vat was set with 0.01% direct vat set culture of Chr. Hansen DVS 850 and 0.0033% propionic culture of Chr. Hansen PS-1 (Chr. Hansen, Inc., Milwaukee, WI). The milk was ripened for 30 min at 90°F before Double Strength Chymax Extra (Chr. Hansen, Inc., Milwaukee, WI) was added to the milks. The coagulant was added at a rate of 17 ml/500 lb for each vat. The experienced licensed cheesemakers subjectively evaluated coagulum development and determined the proper coagulum firmness for cutting. The cow's milk coagulum was cut at 80 min and the sheep's milk was cut at 45 min. Twenty minutes after

cutting, 25% of the whey was drained from each vat and 100°F water was added back to the original volume within each vat. The curd was cooked at 101°F for 30 min and then pumped to the Universal Pre-Press when the cheese pH reached 6.35. The curd was then pre-pressed for 5 min each at 20, 40, and 60 psi and then 20 min at 80 psi. Whey was then drained, the curd was covered with plastic and pre-press was continued at 80 psi for 1 h. Curd was then cut into blocks and placed in 20 lb wheel forms and pressed overnight at 30 psi. The cheeses were brined for 10 h and then placed in a cooler at 52°F for 7 days for pre-cooling. The cheeses were then placed in a 78°F warm room for 12 d for eye formation. After eye development, the cheeses were placed in a 38°F cooler for further flavor development. Samples were taken at regular monthly intervals for analysis and sensory evaluation.

Milk and cheese analysis

All compositional analyses of the cheeses were done in duplicate. Pasteurized milk samples were analyzed for total solids (Green and Park, 1980), fat by Mojonnier, Procedure 989.05 (AOAC, 2000), protein (total percentage N x 6.35) by Kjeldahl, Procedure 991.20 (AOAC, 2000) and casein, Procedure 998.50 (AOAC, 2000). Non-protein nitrogen (NPN) of the milks was also measured using the method described by Johnson et al. (2001). Cheeses were analyzed after 1 month of age for moisture by forced draft oven, Procedure 15.114 (Wehr and Frank, 2004), fat by Mojonnier, Procedure 933.05 (AOAC, 2000), pH by the quinhydrone method (Wehr and Frank, 2004), salt by chloride electrode method (model 926; Corning Glass Works, Medfield, MA; Johnson and Olson, 1985) and protein (total percentage N x 6.31) by Kjeldahl, Procedure 991.20 (AOAC, 2000). After 1, 2, and 3 mo of age, the cheeses were evaluated for sensory characteristics by trained panelists from the Wisconsin Center for Dairy Research.

Results and Discussion

Average composition of the pasteurized cow's milk and sheep's milk is shown in Table 2. Sheep's milk contained twice as much fat and 50% more solids than the cow's milk. Casein content of sheep's milk was higher than cow's milk but the casein:fat ratio for sheep's milk was lower than cow's milk.

Cont. page 6

Table 2. Composition of cow and sheep milk used for baby swiss-type cheese.

	Cow's milk	Sheep's milk
Total solids, %	11.82	18.17
Milk fat, %	3.42	7.10
Total protein, %	3.08	5.73
True protein, %	2.91	5.45
Casein, %	2.39	4.29
Casein/true protein, %	82.22	78.79
Casein:fat ratio	0.70	0.60

Cheese composition

Sheep's milk cheese had higher fat and lower moisture than the cow milk cheese (Table 3). This was the result of having sheep's milk with a lower casein:fat ratio. Protein and salt concentrations were not significantly different between the two cheeses. As with our previous study with smeared cheeses (Wendorff, et al., 2008), the body of the sheep's milk cheeses was much firmer than the cow's milk cheeses. This was most likely due to the higher α_{s1} -casein and higher calcium content in sheep's milk (Anifantakis, 1986). Kalatzopoulos (1970) noted that curd from sheep's milk obtained a final firmness twice that of curd from cow's milk due to the differences in the casein systems of the two milks. With the denser curd, less salt was able to penetrate into the sheep cheeses during brining.

Eye formation

At 1 month, each of the cheeses was evaluated for eye formation. The cow's milk baby swiss cheese was slightly overset with many dime-sized eyes. There was some slight nesting on the top of the block and the body of the cheese allowed for good eye formation even though it was overset.

The sheep's milk cheese did not form eyes because the curd was too dense. When CO₂ was formed in the cheese in the warm room, it expanded the mechanical openings to form definite slits. With high levels of α_{s1} -casein, the sheep curd apparently is too dense to allow for good elasticity of the curd, needed for good eye formation.

Sensory evaluation

At 1 month, the cow's milk cheese had a definite firm body with slight springiness and a creamy texture. The sheep's milk cheese had a slightly firm body with definite springiness and a definite mealy texture. The cow's milk cheese had medium flavor intensity with a slight acidic note and a slight nutty character. The sheep's milk cheese had a mild cheese flavor intensity (lacking swiss character) and slight unclean flavor described as lanolin-like and barny. At 3 months, the cow's milk cheese had a slight to definite firm body with slight to definite springiness and a smooth texture. The sheep's milk cheese had a slight to definite firm body

Table 3. Composition of baby swiss-type cheeses at 1 month.

	Cow	Sheep
Moisture, %	41.38	37.88
Milk fat, %	31.22	34.62
Protein ¹ , %	23.49	23.64
Salt, %	1.12	0.87
FDM ² , %	53.26	55.73
S/M ³ , %	2.71	2.29

¹Total % N X 6.31.

²Fat in the dry matter.

³Salt as a percentage of the moisture phase.

with slight springiness and a slight grainy texture. The cow's milk cheese had aged flavor intensity with a very slight acidic note and a slight to definite sweet character. The sheep's milk cheese had a mild cheese flavor intensity, (still lacking swiss character) with a slight sweet flavor note and a definite unclean flavor described as barny. The flavor of the aged sheep's milk cheese was described as similar to an aged maasdammer cheese. Flavor acceptability scores for each of the cheeses at 1, 2, and 3 months of age are shown in Table 4.

Table 4. Flavor acceptability¹ scores for baby swiss-type cheeses at 1, 2, and 3 mo of age.

Age of cheese	Cow	Sheep
1 month	5.4	2.6
2 months	4.3	4.3
3 months	5.7	2.8

¹ Based on a 7-point Hedonic scale, 1 = extremely unacceptable; 7 = extremely acceptable



Flavor scores indicated that the sheep's milk cheese never did approach an acceptable swiss cheese flavor. The sensory panelists indicated the aged cow's milk cheese was a very acceptable aged baby swiss cheese with a slightly soft body. They criticized the sheep milk's cheese as lacking swiss appearance and character and having too intense "unclean barny" flavor.

Conclusion

Results of this study show that eyed cheeses, e.g., swiss and emmenthaler, cannot be produced from sheep's milk. Sheep's milk, with a high percentage of α_{s1} -casein, forms a curd too firm to allow the elasticity needed for good eye formation. Because of the dense curd, sheep's milk cheese will only develop splits in the body of the cheese when CO_2 is formed during eye development in the warm room. Without good eye formation, the sheep's milk cheese lacks the swiss character needed for good sensory acceptance as an eyed variety of cheese. Panelists describe the sheep's milk cheeses as more typical of maasdammer or artisanal cheeses from Oceania. The dense curd of sheep's milk is better suited for varieties of hard cheese, including pecorino romano and manchego.

Acknowledgments

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News from CDR

Johnson receives NCI Award

The National Cheese Institute (NCI) recognized CDR's Mark Johnson in January at the International Dairy Foods Association forum in Arizona. The NCI Laureate honor is awarded annually to a person who has made a significant contribution to the development and growth of the US cheese industry. Mark's interest in the microbiology and chemistry of cheese has made him an expert on the science explaining cheese defects and led to four patents, nearly a dozen books, and many more research publications. If you look at the list of previous NCI Laureates you start to get a glimpse of the mentors in Mark's career and a picture of the way knowledge moves through generations. For example, previous winners include Max Gonzenbach and Rudy Nef, of Valley Queen Cheese Factory in Millbank, South Dakota, which just happens to be the cheese plant where high school student Johnson got his start in the cheese industry during summers.

Other Laureates include Norm Olson, who brought Mark to Madison, Wisconsin. Elmer Marth, who worked with Mark at UW—Madison. Vince Zehren and John Nelson, who shared their knowledge of the cheese industry with Mark Johnson. You can see the pattern emerging. What Mark celebrates about this award, the same honor his mentors earned, is the interaction, collaboration, and the give-and-take. He has enjoyed the open discussion and exchange of information, the camaraderie among peers, and the way CDR works together as a team. "I think we have figured out that we are all in this together, we all want to know more, make ourselves better, and make our cheese better."

Smoked cheese resource on the website

We have added a new resource to our website, Smoked cheese: A comprehensive guide for cheesemakers, by Bill Wendorff. Look for it on the front page.



Mark Johnson judging cheese

"I think we have figured out that we are all in this together, we all want to know more, make ourselves better, and make our cheese better."

Process Cheese Short Course Feb. 23-24, 2010

If you are interested in the basic principles and practices of making pasteurized process and cold pack cheese then you are in luck! It's not too late to sign up for this course. Contact John Jaeggi, (608) 262-2264 or Franco Milani (608) 890-2640.



ICTE 2010 - Cheese and the Sodium Challenge

Reducing salt intake has been a public health priority for decades. Currently, there is renewed focus on sodium and cheese due to a number of efforts including: the New York sodium initiative, new IOM recommendations on Sodium, and the 2010 Dietary guidelines.

With this increased focus on sodium in the marketplace and US diet, the dairy industry needs to continue to understand and proactively address implications and opportunities.

Attend this year's International Cheese Technology Exposition, cosponsored by CDR and the Wisconsin Cheese Makers Association, to learn new consumer insights and sensory research results, as well as new research on current sodium variance in retail cheese. Then join CDR for an applied approach to reducing sodium in cheese, understanding the risk factors, and the value of using dairy ingredients as one way to reduce sodium in foods.

Mark your calendar—April 21-22, 2010, The Alliant Energy Center, Madison, WI
To Register: www.cheeseexpo.org

**April 21-22, 2010
The Alliant Energy
Center
Madison, WI**



CDR Welcomes Sarah Minasian

When Kathy Nelson retired from CDR in October we were a little worried about getting along without her. We still miss her (and all the treats she made for us) but we are less worried now that Sarah Minasian has joined CDR. Like Kathy, Sarah is a multi-talented food professional, bringing a diversified range of education and experience. She is a food writer and journalist, a chef, a teacher, a food stylist and an aficionado of Wisconsin cheese. As applications lab coordinator, Sarah will be working with CDR's dairy ingredient program and the cheese group.

Curd Clinic

Clinic doctors for this question are Marianne Smukowski and Dean Sommer, CDR

Q. I know there is a regulation that raw milk cheese cannot be sold before 60 days. Does this also mean it can't be cut and packaged before 60 days?

A. This was a real eye opener for us. We found out that raw milk cheese—and this includes cheese made from heat-treated milk—can NOT be cut and packaged before 60 days. (See page 11 for the CFR reference.) And, if it somehow gets out on a store shelf and it hasn't been aged 60 days, the manufacturer of the cheese is responsible.

So, what's a cheesemaker to do? First of all, although it is safest to hold your raw milk cheese for 60 days, it is common practice to ship raw milk cheese to another facility for aging. Selling raw milk cheese to a marketer or a broker before 60 days helps the cash flow in a cheese plant. In addition, many cheese plants don't have enough cooler space to age it for 60 days. So go ahead and sell your cheese to a middleman but you do need a letter of agreement between you and the buyer that stipulates the cheese will not enter the marketplace until it is 60 days old. You also need to keep this agreement current, updating it annually and renewing it when businesses change hands. It helps to have a good relationship—and good communication—with your buyer. It is also essential to have a reliable and accurate paper trail for tracking raw milk cheese.

In addition to the letter of agreement, Wisconsin Department of Ag, Trade, and Consumer Protection (DATCP) officials stipulate that the cheese has to be labeled appropriately; you need to specify that it has to be aged for a minimum of 60 days. This means that somewhere on the exterior of the stored cheese in a bulk container, whether it's a tray, tote, barrel or box you need to attach a label. It might help if this label is bright colored and easy to see. The label needs to identify the cheese as a raw milk cheese and it should

specify that the cheese must be aged beyond 60 days of manufacture.



This is a good example of the required removable tag for a raw milk cheese.

"If it gets out on a store shelf and it hasn't been aged 60 days, the manufacturer of the raw milk cheese is responsible."

**Cheddar cheese made from unpasteurized milk. For completion of curing and proper labeling. Must be aged 60 days
Make Date: JAN. 22, 2010
VAT#4
PLANT#55-XXX**

Code of Federal Regulations

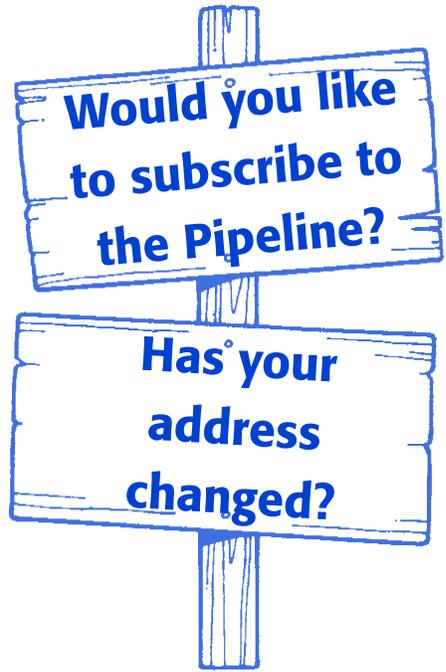
21 CFR 101.100(f)(1), (2) and (3)

(f) The word “processed” as used in this paragraph shall include the holding of cheese in a suitable warehouse at a temperature of not less than 35 deg. F for the purpose of aging or curing to bring the cheese into compliance with requirements of an applicable definition and standard of identity. The exemptions provided for in paragraph (d) of this section shall apply to cheese which is, in accordance with the practice of the trade, shipped to a warehouse for aging or curing, on condition that the cheese is identified in the manner set forth in one of the applicable following paragraphs, and in such case the provisions of paragraph (e) of this section shall also apply:

(1) In the case of varieties of cheese for which definitions and standards of identity require a period of aging whether or not they are made from pasteurized milk, each such cheese shall bear on the cheese a legible mark showing the date at which the preliminary manufacturing process has been completed and at which date curing commences, and to each cheese, on its wrapper or immediate container, shall be affixed a removable tag bearing the statement “Uncured ___ cheese for completion of curing and proper labeling”, the blank being filled in with the applicable name of the variety of cheese. In the case of swiss cheese, the date at which the preliminary manufacturing process had been completed and at which date curing commences is the date on which the shaped curd is removed from immersion in saturated salt solution as provided in the definition and standard of identity for swiss cheese, and such cheese shall bear a removable tag reading, “To be cured and labeled as `swiss cheese,’ but if eyes do not form, to be labeled as `swiss cheese for manufacturing”.

(2) In the case of varieties of cheeses which when made from unpasteurized milk are required to be aged for not less than 60 days, each such cheese shall bear a legible mark on the cheese showing the date at which the preliminary manufacturing process has been completed and at which date curing commences, and to each such cheese or its wrapper or immediate container shall be affixed a removable tag reading, “___ cheese made from unpasteurized milk. For completion of curing and proper labeling”, the blank being filled in with the applicable name of the variety of cheese.

(3) In the case of cheddar cheese, washed curd cheese, colby cheese, granular cheese, and brick cheese made from unpasteurized milk, each such cheese shall bear a legible mark on the cheese showing the date at which the preliminary manufacturing process has been completed and at which date curing commences, and to each such cheese or its wrapper or immediate container shall be affixed a removable tag reading “___ cheese made from unpasteurized milk. For completion of curing and proper labeling, or for labeling as ___ cheese for manufacturing”, the blank being filled in with the applicable name of the variety of cheese.



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Calendar

Wisconsin Process Cheese Short Course
February 23-24, 2010. John Jaeggi (608) 262-2264, Franco Milani (608) 890-2640

Ice Cream Batch Freezer Short Course
March 10-12, 2010. Scott Rankin (608) 263-2008

Wisconsin Cheese Technology Short Course
March 22-26, 2010. Mark Johnson (608) 262-0275 or Scott Rankin (608) 263-2008

International Cheese Technology Expo
April 20-22, Madison, WI. www.cheeseexpo.org

World of Cheese from Pasture to Plate
May 2-6, 2010. Dean Sommer (608) 265-6469

Cleaning and Sanitation Workshop
May 11, 2010. Franco Milani (608) 890-2640

Dairy HACCP Workshop
May 12, 2010. Marianne Smukowski (608) 265-6346