

Get Ready to Take Advantage of International CODEX Standards

by Rusty Bishop, Ph.D., Director of Wisconsin Center for Dairy Research and Tom Balmer, Senior Vice President, National Milk Producers Federation, Arlington, VA


Hold onto your hats! International cheese standards will affect everyone, **including** Wisconsin. CODEX Alimentarius is the international organization that establishes global food standards. The standards are the abiding law of the World Trade Organization and will be used to resolve trade disputes. Most of you might be thinking these standards will not affect you if you don't have immediate plans to export your product. Consider the volume of products imported into the U.S. that you now compete with—this brings a whole new light to the global trade picture.

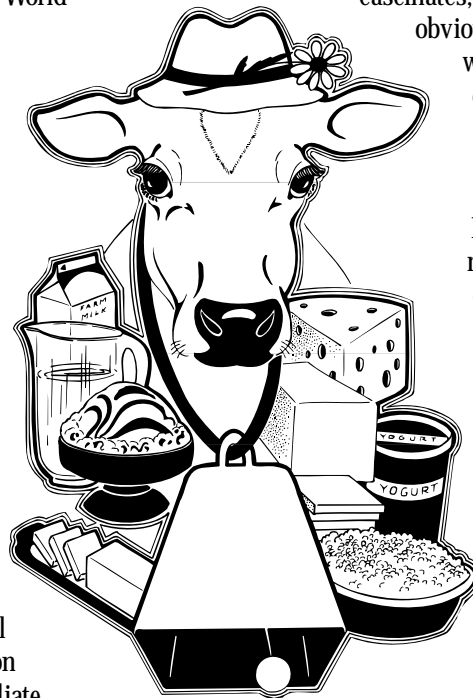
Presently, three sets of CODEX cheese standards could have a dramatic impact on Wisconsin and U.S. cheesemakers and marketers. They are the A-6 General Cheese Standard, C-Standards for Individual Cheeses, and the A-8 Standard for Processed Cheese and Processed Cheese Preparation. The Codex Milk and Milk Products Committee will likely approve A-6 General Cheese Standards in May, 1998, then the standards will go for final approval by the CODEX Commission in June, 1999. Implementation could be immediate (6/99). The language that will have a major impact

involves the allowance of alternate make procedures, including language permitting "any milk-derived ingredient" in natural cheeses. This would include whey products, casein/caseinates, and possibly dairy flavors. Now is it obvious that these new international standards will have major effect on how cheese and cheese products are formulated for final trade of the product?

The other standards of interest—Individual Cheeses (including Mozzarella) and Processed Cheese—remain in draft form and are probably 2 to 4 years from Milk and Milk Products Committee approval. Highlights of these standards are the inclusion of alternate-make procedure language in the Mozzarella standard, and the amount of cheese required for a processed cheese product. Again, these standards will greatly influence the Wisconsin cheese industry.

In an effort to learn about these new standards and understand the ramifications they will have on Wisconsin cheesemaking in a year and a half, we will have a short discussion during the WCMA meeting April 21-23, followed by a day-long workshop in the fall. This workshop will assist industry and regulatory personnel to understand the new standards and seize the opportunities created.

Remember, Tom Balmer of National Milk Producers Federation will be with us and WCMA on April 23 to explain the standards, and CDR will also host a workshop in fall of 1998 to discuss potential opportunities that CODEX will create. If you have any questions regarding the standards, feel free to call me (608-265-3696) or Tom Balmer (703-243-6111). 



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Drug Residue Testing

by Chris Lazaneo, Public Information Officer, WDATCP

It's well known that all dairy plants receiving raw milk are required to test for animal drug residues. Plants must test according to specific procedures and they need to keep specific records. However, sometimes plants find that their recordkeeping is not complete or the staff may need additional training to do the testing. This article will review some important points about animal drug residue testing.

Persons with specialized training have specific responsibilities as part of the drug residue testing program. Dairy plants must have at least one Industry Supervisor (IS) to screen and/or delegate testing. The IS is trained by a state employee, the Laboratory Evaluation Officer (LEO). The Wisconsin Department of Agriculture Trade and Consumer Protection (WDATCP) recommends that the IS keep a written record of any employee training provided to persons conducting drug residue testing. These records should include training dates and a list of the information provided. (IS), Industry Analysts (IA), or Certified Industry Supervisors (CIS) perform drug residue testing, however, there are some restrictions.

The Industry Supervisor (IS):

- ◆ Can screen incoming bulk milk loads for drug residues
- ◆ Can train and then delegate screening responsibility to other plant employees, called Industry Analysts (IA)
- ◆ Cannot perform tests for regulatory follow-up
- ◆ Doesn't usually participate in the split samples (the annual set of blind samples used to ensure that each laboratory can obtain identical results when testing identical milk samples).

An Industry Analyst (IA) is a person trained by the IS, or Certified Industry Supervisor (CIS), and works under their supervision.

The IA:

- ◆ Can screen incoming bulk milk loads for drug residues
- ◆ Does not perform tests for regulatory follow-up or delegate testing responsibility

Some dairy plants have a Certified Industry Supervisor (CIS). This person has passed an on-site evaluation conducted by the LEO. In addition, each year the CIS must successfully perform split sample testing. Dairy plants without a CIS must use an out-of-plant laboratory to perform any confirmation testing.

The CIS can:

- ◆ Test incoming milk loads for drug residue
- ◆ Train and delegate testing responsibilities to other plant employees
- ◆ Confirm the bulk load sample
- ◆ Conduct producer traceback
- ◆ Conduct producer recheck for reinstatement

Testing procedures

If the initial screen of a bulk load sample is positive for animal drug residues, the test is not complete until a second series of tests is immediately run on the same sample. The sample must be tested using the same test method, in duplicate, with both positive and negative controls. The plant's IA, IS, or CIS may perform this series of tests.

If both of the retested duplicate samples are negative, the test is recorded as negative and the milk can be unloaded. No Positive Drug Residue Report Form is required.

If one or both of the samples retested are positive, then the test must be reported to WDATCP on the Positive Drug Residue Report Form. If the plant has a CIS and they ran the second series of tests, then that test is considered a confirmation. WDATCP can request that a confirmation test be conducted.

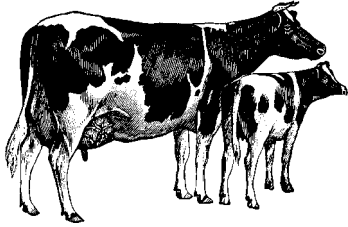
In all cases, positive tests must be reported immediately by phone using the Hot Line number (800) 462-5243, or faxed to WDATCP. You must submit the completed Positive Drug Residue Form to WDATCP within three business days.

Many plants have chosen to test bulk milk loads for drugs other than beta lactams. When this is done and the screening test is positive, dairy plants must follow the same reporting procedures that are required for the beta lactam positive test. Confirmation, if requested, must be conducted in a lab certified to perform an approved test.

The Charm II, an approved drug test, must be used to confirm any positive test for the following drug families:

Sulfonamides
Chloramphenols
Tetracyclines

next page



In all cases, positive tests must be reported immediately by phone using the Hot Line number (800) 462-5243, or faxed to WDATCP. You must submit the completed Positive Drug Residue Form to WDATCP within three business days.

Recordkeeping and Reporting

All dairy plants must maintain records demonstrating that they are testing for bulk milk loads drug residue. You should record this information on the daily screening log. Dairy plants may choose to combine and incorporate their inventory data, daily weight receipts and other information into their bulk milk load testing records. This is appropriate as long as the minimum WDATCP required information is contained on the log forms. Do not mix cow, tank, and silo testing activity recordings with the bulk load testing records.

At a minimum, the log records should include:

- ◆ Date of test (including month, day, year) and time of receipt at the dairy plant
- ◆ Identification of the bulk milk truck (i.e. hauler name, route number, etc.)
- ◆ Type of testing method performed on each bulk milk load sample
- ◆ Complete and accurate test results
- ◆ Identification of the IA, IS, or CIS who tested the milk sample

Whenever necessary, records should document all follow-up testing activity. All initial tests and follow-up test results must be recorded on the daily screening log.

Reporting Forms

- ◆ The Positive Drug Residue Report Form must be submitted to WDATCP if:
- ◆ Upon completion of testing, one or both of the duplicate samples is positive for beta lactams
- ◆ Upon completion of testing, one or both of the duplicate samples is positive for drugs other than beta lactams on the retest
- ◆ If confirmation testing was positive for drugs other than beta lactams (confirmation testing must be done by a lab certified to perform the appropriate test and it must use the same milk sample as the original test.)


Producer traceback

If a dairy plant finds a positive result after testing a bulk load for drug residue ("hot"), the plant then tests individual milk samples from all the producers whose milk made up that load. You must test individual producer milk samples using the same test or a test equivalent to the one used in the initial screening.

If a producer's sample tests positive, the dairy plant must immediately report that producer to WDATCP using the Positive Drug Residue Report Form. In addition, the dairy plant must reject all milk shipments from that producer until that producer's milk tests negative for drug residue and is reinstated.

Milk disposal

Milk that has been confirmed as being positive for drug residue cannot be used for human consumption or as animal feed. Disposal is the only option. Plants should inform WDATCP of the method used for the disposal of contaminated milk. Plants may use the Tanker Disposal Form to provide this information.

The Wisconsin Department of Agriculture, Trade and Consumer Protection has recently published a free brochure, Bulk Milk Load Drug Residue Testing Program, which addresses testing procedures and record keeping. For a free copy, please call (608) 224-4700 or contact your Laboratory Evaluation Officer. 

Coping with the Labor Shortage—New Ways to Find New Employees

by Tera Johnson, Business Counseling Program Manager, University of Wisconsin School of Business Agribusiness Program

Have you advertised in the local paper to fill open positions only find that no one applies? Have your recent applicants had trouble reading your employment application? Have you resorted to hiring twenty people so you can end up with two who actually show up for work?

If you answered yes to any of these questions, you're not alone. The labor shortage in Wisconsin is making it more difficult than ever to find new employees. So is the changing demographic profile of the Wisconsin workforce. For example, 7% of the Wisconsin workforce was classified as minority in 1997. Less than 50% of the workforce was white and male. This changing workforce profile means that you need to expand traditional recruiting techniques to find employees.

Try new strategies

If you aren't successful with your old methods, it may be time to use some new strategies:

1. Analyze exactly what tasks need to be done by the new recruit. When a position opens, it is often tempting to simply run an ad for the old job. However, jobs tend to change over time, and it may be that you need different skills in the new person. Analyze what the new person really needs to know in the position and write a job description accordingly.
2. Be flexible. The willingness to accommodate part time work, after-school hours, lower lifting requirements, or non-English speaking employees can greatly expand your recruiting pool and increase the probability that you will find a conscientious employee.
3. Exhaust traditional recruiting sources. Run an ad in your local paper, ask current employees and family members for a referral (a \$50 referral bonus can really help generate leads).
4. Take advantage of the many resources available to companies who use less traditional recruiting techniques. For example:

→ Place ads in targeted publications. Running an ad in the local paper will only attract people who read it. High school students, seniors, Spanish speakers may not read your local paper. Find a paper they do read and advertise there.

→ Consider using an employment agency for temp-to-hire. If you find yourself spending an inordinate amount of time recruiting employees, you may want to consider using an employment

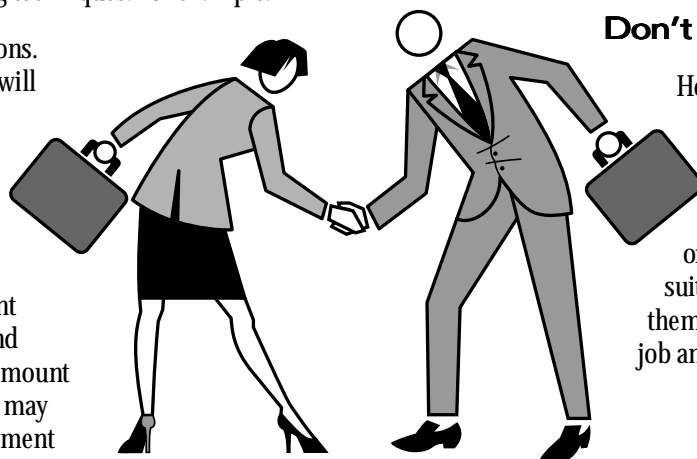
agency to do your recruiting. They do the work of finding people; you get the opportunity to evaluate the person while they are working for you as a temporary even before they enter your customary probationary period.

→ Call your local job service office. Placing an announcement with Job Service will immediately get the word out across the state and it is free. You might also find that you can take advantage of tax and other incentives designed to encourage the hiring of more difficult to place individuals. In Wisconsin, W-2 is creating an additional pool of workers with incentives designed to encourage hiring them.


→ Consider taking advantage of the services offered by non-traditional employee placement agencies. Communities often have agencies that help place Spanish speaking, Hmong, and mentally and physically handicapped people in the workplace. These agencies will often provide on-site training for the new recruit, and those who will be working around him or her, to help ease the transition into your company.

→ Talk to your local law enforcement officials about any work-release programs in your community. Individuals on work release are the archetypal "captive employees". All kidding aside, they can be a source of extremely reliable employees.

→ Consider using the services of an off-site human resources management service. With employee issues getting increasingly complex and time consuming, a new breed of off-site human resources management organizations have sprung up to serve the needs of smaller companies. Remember that you are in the business of making cheese and related dairy products. If your employee problems (recruiting included) are monopolizing your time, an off-site human resources service may be just what your business needs.



Don't skimp on training

However you recruit, be prepared for a longer, more intensive training period for new employees. On average their skills will be weaker than those of your new employees of yore, but suitable support can often turn them into the right person for your job and company. 

**An International
Conference on
Cheese Science and
Technology
The University of
Melbourne
Victoria, Australia
July 1-3, 1998**

Cheese Science '98
organized by
Australian Starter Culture Research Centre
Food Science Australia
The University of Melbourne Gilbert Chandler
College

Kristine Manser,
k.manser@landfood.unimelb.edu.au

Dr. David Everett,
d.everett@landfood.unimelb.edu.au

Dr. Peter Roupas,
peter.roupas@mel.dfst.csiro.au

Dr. Ian Powell, ascrc@iaccess.com.au

Speakers

Professor Patrick F. Fox
Professor of Food Chemistry, University College, Cork, Ireland
Significance of non-starter lactic acid bacteria in Cheddar cheese

Mr. Howard Heap
Executive Manager, Starter Group, New Zealand Dairy Research Institute,
Palmerston North, New Zealand
Optimising starter culture performance in New Zealand cheese plants

Professor David M. Barbano
Professor of Food Science Director, N. E. Dairy Foods Research Center, Cornell
University, New York, USA
A dynamic model for the melting and browning of Mozzarella cheese during
pizza baking

Dr. Gaëtan Limsowtin
Research Director, Australian Starter Culture Research Centre, Melbourne,
Australia
Starter peptidase activity in maturing cheese

Dr. Mark E. Johnson
Senior Scientist, Center for Dairy Research, University of Wisconsin, USA
Manufacture and flavor development of Gouda and reduced-fat cheeses

Mr. Brian Sutherland
Program Co-ordinator, Australian Cheese Technology Program, and Program
Manager, CSIRO, Cheese and Cultured Foods Program, Melbourne, Australia
Developments in cheese science and technology in Australia

Professor Paul Kindstedt
Professor of Food Science, University of Vermont, USA
A physico-chemical approach to the structure and function of Mozzarella cheese

Mr. Neil Willman
President, Dairy Industry Association of Australia, and Senior Lecturer, The
University of Melbourne, Gilbert Chandler College, Melbourne, Australia
The development of the Australian specialty cheese industry

Professor Donald J. McMahon
Director, Western Dairy Center, Department of Nutrition and Food Sciences, Utah
State University, USA
Influence of fat, moisture and salt on functional properties of Mozzarella cheese

Poster and oral presentations are invited from conference registrants. Instruc-
tions for submission of abstracts will be supplied upon request.

Register through the Internet:

<http://www.dfst.csiro.au/cheese98.htm>

Wisconsin Dairy Field Representatives Conference

The annual Wisconsin Dairy Field Representatives Conference, will be held at Crown Plaza Hotel in Madison on February 3-4, 1998. The conference will feature discussions on national and regional milk pricing issues and quality concerns with dairy expansions. Additional topics on the first day include new fluid milk packaging, freezing point problems, water quality at the farm, quality milk composition, and transitions in dairying. The second day of the conference will cover federal and state regulatory changes that influence quality milk production.

The Wis. Dairy Field Reps Conference is sponsored by the UW-Madison Food Science Department, Cooperative Extension, and Wisconsin Association of Dairy Plant Field Representatives. Cost of the conference is \$60 with advanced registration, \$65 on the day of the program. Registration fee includes Tuesday lunch, Wednesday breakfast, refreshment breaks, and conference costs. For registration, contact CALS Outreach Services, 620 Babcock Dr., Madison, WI 53706; phone (608) 263-1672, Fax (608) 262-5088.

For additional information about the conference program, please contact Bill Wendorff, Dept. of Food Science, UW-Madison; phone (608) 263-2015.

Annual Wisconsin Dairy Field Reps Conference

February 3-4, 1998

Crown Plaza Hotel - Madison East

Tuesday, Feb. 3, Morning **Quality Milk Components**

Moderator - Norm Kedrowski

Freezing Point & Titratable Acidity Issues
- Dr. Robert Bradley

Water Quality at the Farm
- Dr. Brian Holmes

Quality Concerns on Extended Milking Runs
- Dr. Doug Reinemann

New Packaging, New Labeling - New Image?
- Dr. Tom Gruetzmacher

Afternoon **Pricing for Quality Milk**

Moderator - Dan Belk

Milk Pricing after the Cheese Exchange
- Dr. Bob Cropp

Regional Milk Pricing Issues
- James Hahn

Economics and Resources

Moderator - Denny Zimmer

Quality Milk Composition in the Future
- Dr. Bill Wendorff

Tuesday, February 3 Morning

Production Goals for Quality Milk
- Dr. Gary Frank

Transitions in Dairying
- Dr. Bruce Jones

Business Meeting

Social Conference

continued on next page

Wednesday, Feb. 4
Critical Regulatory Issues for Quality Milk
Moderator – Bill Wendorff

Critical Issues from NCIMS
 - Randy Daggs

Current Concerns from WDATCP
 - Tom Leitzke

Summary
 Adjournment



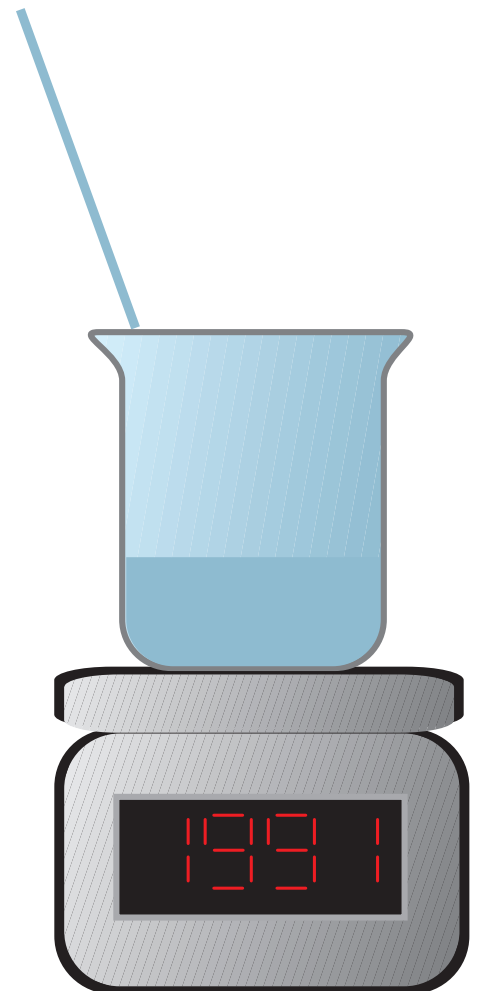
New Dairy Microbiology Course Debuts at UW—Madison

by Steven C. Ingham, Food Safety Extension Specialist, University of Wisconsin-Madison

When new workers are hired in a dairy Quality Assurance laboratory, it is essential that they have strong foundation in the basics of dairy microbiology. A new 1 - 1/2 day short course, offered at the University of Wisconsin-Madison on April 8 and 9 will provide your entry-level technicians with the dairy microbiology background they need to do their jobs well. "This course is hands on; each student will learn to prepare media, sampe dairy products and surfaces, and perform standard analyses such as SPC, coliforms, and yeast and molds," said Steve Ingham, the course Coordinator. Instructors in the course include Ingham, Dr. Bob Bradley and Marianne Smukowski of the Wisconsin Center for Dairy Research.

The basics of dairy microbiology

Lectures will cover the basics of dairy microbiology, lab QA and safety, sampling & dilution of samples, media and its preparation, Standard Plate Count, indicator tests, tests for groups of microorganisms, the principles of pathogen testing, and fundamentals of calculating and reporting dairy microbiology test results. "Hands on" lab exercises include media preparation, sampling, testing equipment, Standard Plate Count, coliform tests, tests for groups of microorganisms, and calculating test results. The course registration fee is \$165 which includes lecture and laboratory reference materials, a copy of Standard Methods for the Examination of Dairy Products, lunch on April 8, refreshments, and laboratory supplies. Space is limited to the first 25 registrants. To register or obtain more information, contact Steve Ingham at 608-265-4801 or scingham@facstaff.wisc.edu.



News from CDR

The Milkfat as a Food Ingredient Short Course, on March 3-5 at UW-Madison, still has openings. This is an intensive two-day course covering milkfat properties and the use of milkfat in a variety of foods. This course, designed for people who manufacture or use milkfat ingredients, will provide a better understanding of the chemical and physical properties of milkfat and suggest how to select milkfat-derived ingredients for optimum performance in foods. Call Kerry Kaylegian at (608) 265-3086 for details.

Marth and Steele edit new book

Applied Dairy Microbiology, edited by Elmer H. Marth and James L. Steele, is now available from the publisher, Marcel Dekker, Inc., 207 Madison Ave. New York, NY 10016. CDR affiliated faculty and staff who contributed to the book include: Rusty Bishop, Mark Johnson, Jim Steele, and Bill Wendorff. The book opens with a chapter on microbiology of the dairy animal and then continues with chapters on raw milk and fluid milk products, concentrated and dry milks and wheys, ice cream and frozen yogurt, butter and related products, starter cultures and their use, genetics and metabolism of starter cultures, fermented milks and probiotics, cheese products, fermented by-products, public health concerns, control of microorganisms in dairy processing, testing milk and milk products and treatment of dairy wastes.

New CDR staff

Gene Barmore, Research Specialist, is the new pilot plant operator for the Milkfat Applications Program. He has twenty years experience in the food industry including 12 years at Marschall products, (now Rhone Poulenc), and eight years at Bagels Forever. The pilot plants, installed in Room 36 at Babcock Hall, keep Gene busy as he takes milkfat apart and puts it back together.

Leesa Stefano, also a Research Specialist in the Milkfat Applications Program, is a recent Food Science grad from UW-Madison. She evaluates new milkfat ingredients, putting Genes milkfat fractions into chocolate, cookies, croissants and cakes.

Juan Romero also joined CDR this fall. Juan is an Associate Researcher, in charge of coordinating analytical tests and methods development for CDR's application programs. Juan's background in Quality Assurance and biotechnology transfers easily to a new focus on milkfat, cheese and whey testing.

We also have new faces in the CDR office. Jackie Utter has replaced Linda Hewitt and the communications group is happy to be working with Tim Hogensen.

CDR Starts a Whey Applications Program

CDR's has set up a Whey Applications Program to provide technical support for the whey industry. The program, funded by Dairy Management, Inc. and the Wisconsin Milk Marketing Board officially started in October—just in time for the International Whey Conference in Rosemont, IL.

We are now outlining our objectives and plan to meet with some of the whey processors in Wisconsin. If you have any interest in this area or would like to express any specific needs you might have, please call me at the Center or send an e-mail.



Kimberlee (K.J.) Burrington
Program Coordinator
burrington@cdr.wisc.edu
(608) 265-9297



Curd Clinic

Q. We are making Camembert cheese but are having trouble with surface molds. The mold appears uneven—some areas are thin and others are thick. What makes this happen and how can we fix it?

A. Your problems with Camembert cheese could be caused by a number of reasons. I'll discuss some of the reasons and also look at another common problem with Camembert—body.

The ripening of the Camembert surface is, of course, closely related to the conditions on the cheese surface. One of these is salt—a major influence on yeast and mold development. You could be salting the surface unevenly, too little, or too much. If you are using a liquid brine, it is particularly important that you make sure the brine liquid is in contact with the entire surface.

Conditions in the ripening room can also affect the surface of your cheese. Pay attention during the first 24 hours, checking for insufficient or uneven drying. Make sure that the ripening area conditions are optimal, temperatures should range between 55° and 62°F (13 - 16°C) and the relative humidity is 92-95%. Air flow is important, too. Air should be flowing equally at all levels to distribute mold spores evenly.

You can have problems with the mold itself. If the mold is sprayed, an even application is necessary. You may need to adjust the strain, or combination of strains that you use in order to optimize your ripening conditions. Sometimes, extensive growth of yeast influences surface mold. Limit yeast growth by renewing the brine and improving sanitation.

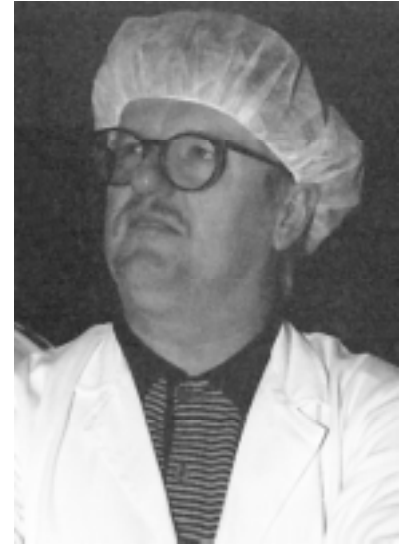
Camembert cheesemakers may also encounter problems with a nonuniform texture. The cheese may have a hard center, a soft surface, or both. Moisture levels that are too low can produce a Camembert with a hard center. Conversely, a high moisture content can lead to a soft surface. If you are producing a cheese with a hard center and a soft surface then you need to look at the acidification process during your make procedure.

The acidification can go too far during the make and ripening procedure of Camembert and similar cheeses. Depending on the cheese type, for example, it can go below pH 4.70 - 4.80. At first, deacidification slows down. However, when the ripening process starts, it breaks down the cheeses at an accelerated speed. Since the traditional ripening “moves” from the surface to the middle of the cheese, the surface will already be overripened before the cheese center has even started the protein and fat breakdown.

In traditionally ripened cheese, the desired height of the cheese should be a maximum of approx. 30 mm., or 1 1/4 inches. If the cheese is too high, the breakdown at the surface will go too far before the middle is ready.

Refer to the table on pages 10-11 for an easy reference to the possible problems and solutions you may encounter when making Camembert cheese.

continued on page 10



Curd Clinic Doctor for this issue is Josef Hubatschek, Dairy Technologist at ALPMA. ALPMA is a German company and a leading producer of cheese manufacturing and packaging equipment.

Questions for the Curd Clinic?

Write to:

CDR, *UW Dairy Pipeline*

1605 Linden Dr.

Madison, WI 53706

FAX: 608/262-1578

e-mail: Paulus@cdr.wisc.edu

Did you know..

When you make a soft cheese like Camembert you can actually control the body of your cheese. Soft cheeses usually fit into three categories, they have a firm middle and are soft on the outside, they are soft all the way through, or they fall somewhere in between.

If you want to produce a stabilized, soft cheese—one that has a softer body throughout—you do it by using a thermophile for a starter culture. Specifically, you need to start with *Streptococcus thermophilus* so you can get the pH to 5, but not much lower. After adjusting the body of the cheese this way you will also need to use a different mold to produce the proper surface texture.

Mark Johnson

Uneven mold growth on Camembert cheese

Possible Cause:

Necessary action:

Salting the cheese

Uneven salting

Make sure that dry salt or salt brine is applied evenly, especially noting if the brine liquid has sufficient access to all surfaces.

Too high salt content

Reduce amount of salt by reducing the amount of salt, time and /or concentration of brine.

Too low salt content

Increase salt.

Ripening Conditions

Insufficient or uneven drying of the cheese in the beginning of the ripening (first 24 hours)

Optimize initial room conditions (52°-55°F and 95-98% relative humidity). Try placing the ripening racks at an angle.

General room conditions during ripening not optimum.

Ripening conditions should be regulated and controlled continuously, (Best done automatically) Normal temperature should be 13-16°C, relative humidity should be 92-95% from day 2 to 24 hours before packing

Insufficient air movement, oxygen supply and distribution of mold spores

Recirculation capacity 5-10 times the volume of room/hour. Approx. 10% fresh air intake (possible operation in intervals)

Air flow is not equal at all levels and corners of room and all surfaces around the cheeses.

Check the distance between cheeses on ripening racks, the distance between ripening racks, distance between stacks of ripening racks

Mold Problems

Specification and combination of used strains are not optimum for the type of cheese or the ripening conditions.

Check with supplier

If mold is sprayed, an even application is necessary

Spray evenly to give access to all sides of the cheese surface.

Yeast on the surface

Too extensive growth of yeast can lead to an uneven development of penicillium in brine.

Pasteurize or renew brine. Improve hygiene in room, racks and others

Problem with hard center and/or soft surface of Camembert cheese

Hard center only

Too low moisture and slow ripening effect through surface microorganism and enzymatic activity.

Reduce intensity of curd preparation, lower temperature, shorter salting time, larger cut, shorter syneresis time, less stirring.

Reduce drainage after hooping, lower temperature, less time, less turning

Check ripening conditions, temp. too high, humidity too low.

Soft surface only

Too high moisture due to insufficient drainage during curd preparation and or drainage period in molds.

Increase intensity of curd preparation (See above)

Increase turning

Increase room temperature during draining period
Avoid extensive surface cooling through evaporation by high air movement

Too high brining temperature

Reduce temp of brine

Hard center and soft surface

Acidity curve dropped too low during make procedure

Check type and amount of starter

Reduce preripening and increase renneting pH

Brine cheese with a higher pH at lower temperatures

Avoid post-acidification after salting

UW DAIRY PIPELINE

Calendar

Feb. 3-4 Wisconsin Dairy Field Reps Conference. Madison, WI. Call Bill Wendorff at (608) 263-2015.

Feb. 24-25 Wisconsin Process Cheese Short Course. Madison, WI. Call Jim Path at (608) 262-2253 or Bill Wendorff at (608) 263-2015 for more details.

Mar 3-5 Milkfat as a Food Ingredient. Madison, WI. Call Kerry Kaylegian at (608) 265-3086.

Mar. 10 Wisconsin CIP Workshop, Madison, WI. Call Bill Wendorff at (608) 263-2015.

Mar. 16-20 Wisconsin Cheese Technology Short Course, Madison, WI Call Bill Wendorff at (608) 263-2015.

Apr. 8-9 Microbiological Techniques for Dairy Quality Control, Madison, WI. Call Steve Ingham at (608) 265-4801.

Apr. 14-17 Basic Cheesemaker's License Short Course, River Falls, WI. Call Ranee May for further info at (715) 425-3150.

Apr. 16 WDPA Butter & Cheese Evaluation Clinic, Wis. Dells, WI. For information, call Brad Legreid at (608) 836-3334.

Apr. 21-23 International Cheese Technology Expo, Madison, WI. For information, call Judy Keller at (608) 255-2027.

May 5-6 Whey and Whey Utilization Short Course, Madison, WI. Call Bill Wendorff at (608) 263-2015.

May 12-13 Chr. Hansen's Cultured Dairy Products Symposium, Milwaukee, WI. Sponsored by Chr. Hansen's Lab., (414) 476-3630.

May 21-22 Applied Dairy Chemistry Short Course, Madison, WI. Call Bill Wendorff at (608) 263-2015.

June 3-4 Wisconsin Cheese Grading Short Course, River Falls, WI. Call Bill Wendorff at (608) 263-2015.

Wisconsin CENTER FOR DAIRY RESEARCH
University of Wisconsin-Madison
1605 Linden Drive
Madison, Wisconsin 53706

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