

**College of Marin  
Community Education Artisan Cheesemaking Certificate Program  
2010 - 2011 Pilot Year Synopsis**



**2011 Principles & Practices of Cheesemaking Workshop, Redwood Hill Farm**

**University of California Cooperative Extension  
September 2011**

Prepared by: Ellie Rilla  
Community Development Advisor

## Acknowledgements

Many thanks to the 219 students who attended the six classes offered throughout 2010-11 and completed evaluations. Also, sincere thanks to the program instructors: Marc Bates, Jennifer Bice, Lisbeth Goddik, Kuba Hemmerling, Dave Potter, and Daphne Zepos. Without their expertise, this program would not have begun. More about each instructor can be found on pages 4-7.

## Executive Summary

This report provides a brief synopsis of the pilot year of the Artisan Cheesemaking Certificate Program initiated by College of Marin (COM) President Fran White, and Cowgirl Creamery owner Sue Conley, and developed by the education committee of the California Artisan Cheese Guild (CACG), and UC Cooperative Extension in collaboration with COM Interim Community Education Director Janice Austin and her staff. The student data was collected during and after each course, compiled, and shared with each instructor, college CE staff, and the CACG Education Committee. Student evaluations confirm the many positive aspects of this program as well as key improvements necessary for its future success.

Six classes were offered in the Artisan Cheesemaking Certificate Program:

- *A Full Introduction to Artisan Cheese and Its Traditions*
- *Basic Starter Cultures for Cheese and Fermented Milks*
- *Milk Types and Quality*
- *Cheese Chemistry*
- *Principles and Practices of Cheesemaking*
- *Hygiene and Food Safety in Cheesemaking*

Three hundred and twenty six (326) students completed coursework and 11 students graduated in April 2011. Twelve more are slated to complete the certificate coursework this winter. Several students were hired to work in commercial cheese plants based on their participation in this program.

University of California Cooperative Extension  
1682 Novato Boulevard, Suite 150B Novato, CA 94947 (415) 499-4204  
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## 1.0 Introduction

Northern California, Marin and Sonoma Counties specifically, have the largest concentration of artisan and farmstead cheesemakers second to Vermont.<sup>1</sup> Perhaps this is a growing field because of the natural fit between the premium milk produced in the North Bay and cheese enthusiasts who want the outstanding handmade artisan and farmstead cow, sheep and goat cheeses that are locally made.

In 2007, a conversation between then College of Marin President Frances White and Cowgirl Creamery owner Sue Conley about how to best utilize available space at College of Marin's Indian Valley campus, led to the idea of piloting a cheesemaking certificate program modeled after the Vermont Institute for Artisan Cheese.

With the blessing of President White, the education committee of the California Artisan Cheese Guild (CACG)<sup>2</sup>, led by Maureen Cunnie, cheesemaker at Cowgirl Creamery, and Lynn Giacomini Stray, co-owner of Point Reyes Farmstead Cheese began to organize the curriculum. Ellie Rilla, advisor from University of California Cooperative Extension (UCCE) and Daphne Zepos, owner of Essex St Cheese joined the committee in 2010. The first classes were offered in the 2010 Fall quarter. Janice Austin, interim Community Education (CE) Director, enthusiastically supported this effort, and her staff worked diligently to make the classes a reality, in tandem with the education committee. Earlier conversations during the summer with professors Moshe Rosenberg at UC Davis and Phil Tong at Cal Poly, San Luis Obispo, helped the committee formulate the first year class offering.

## 2.0 Certificate Structure

The certificate requirements are as follows:

### Artisan Cheesemaking Certificate Program in Dairy Arts<sup>3</sup>

The Artisan Cheesemaking Program at Indian Valley Campus trains beginning cheesemakers in the art and science of making artisan cheese. Through lectures and hands-on workshops with experienced cheese professionals, students will gain the knowledge and skill needed to identify, evaluate, and produce artisan cheese. This pilot program is being developed in collaboration with the California Artisan Cheese Guild and UC Cooperative Extension.

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It is highly recommended that students with no background knowledge in food science, microbiology, or chemistry prior to taking the classes start the program with *A Full Introduction to Artisan Cheese and Its Traditions*.

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<sup>1</sup> *Coming of Age: The Status of North Bay Artisan Cheesemaking*(2011).

<sup>2</sup> *California Artisan Cheese Guild*, [www.cacheeseguild.org](http://www.cacheeseguild.org)

<sup>3</sup> *Copy from Fall 2011 College of Marin Community Education Catalog*

Commercial cheesemakers and students with a professional background in food science do not need to follow any sequence in order to complete this certificate program. Additionally, prior cheesemaking experience will be extremely valuable to the understanding of the process.

The following courses are required to complete the Artisan Cheesemaking Certificate Program in Dairy Arts:

- *A Full Introduction to Artisan Cheese and Its Traditions*
- *Basic Starter Cultures for Cheese and Fermented Milks*
- *Milk Types and Quality*
- *Cheese Chemistry*
- *Principles and Practices of Cheesemaking*
- *Hygiene and Food Safety in Cheesemaking*

It is recommended that *Hygiene and Food Safety* be taken with or following *Principles of Cheesemaking*.

### **3.0 Instructor Status**

Classes began in the Fall 2010 quarter and the response has been overwhelmingly positive. All classes are currently taught in the Pomo 154 classroom on the Indian Valley campus. Instructors are being recruited for each class from as far away as Wisconsin and Oregon. Faculty from California Polytechnic State University, San Luis Obispo (Cal Poly) and the University of California at Davis (UC Davis) are assisting as well.

Using local instructors is a priority, but most classes are technical and the expertise needed doesn't always exist in the Bay Area. Instructors need to be expert in their field, be able to convey the information in a professional and understandable method, and be willing and interested in teaching a diverse mix of registered students.

Much time and energy went into developing the course objectives and then locating and asking these instructors to participate during the first year. CE staffer Karen van Kreidt patiently worked alongside the education committee (Maureen Cunnie, Lynn Giacomini Stray, Daphne Zepos, and Ellie Rilla) as they searched for and selected instructors, with an eye towards strong instruction skills and interest in developing this program.

A description of each class follows:

#### *A Full Introduction to Artisan Cheese and Its Traditions*

This four part (3 hour) evening class is currently taught by Daphne Zepos.

Daphne ranks among the most outspoken and dynamic cheese advocates in the United States. She is a co-founder of the Cheese of Choice Coalition, an advocacy group dedicated to the preservation of raw milk and small production cheeses. She established Artisanal's Cheese Maturing Program, created and taught Artisanal's Cheese Master Class Program. She is the owner of Essex Street Cheese Company and teaches a professional cheesemonger's training program at the San Francisco Cheese School and Zingermans. She is also co-owner of the SF Cheese School.

*Basic Starter Cultures for Cheese and Fermented Milks*

*Cheese Chemistry*

These are both one-day seminar classes currently taught by Dave Potter. Dave has been involved in the food and dairy industry since 1982. He owns Dairy Connections, a commercial culture company in Madison, Wisconsin. He spent his first 21 years employed with a culture fermentation company that is now Danisco USA. His primary responsibilities were in the technical application of cultures and other ingredients used in the commercial manufacture of fermented milks and cheeses.



**A Full Introduction to Artisan Cheese, Fall 2010**

*Principles and Practices of Cheesemaking*

This two-day hands-on workshop is held at a local commercial creamery. Marc Bates co-taught the first course with Jennifer Bice at Redwood Hill Farm's creamery in Sebastopol in Sonoma County. The first course was taught at Pomo 154 on day one. On day two, the students drove to the creamery. The Fall 2011 course is also taught by Marc, and both days will be held at the Point Reyes Farmstead Cheese teaching facility (The Fork) outside of Point Reyes Station. Marc Bates has over 40 years experience in the food industry including creamery operator and manager for the Washington State University Creamery for 27 years and 11 years as a food industry consultant specializing in cheesemaking.

The Spring 2011 course was co-taught by Jennifer Bice. Her employees assisted for the creamery cheesemaking portion. Jennifer Bice has been milking, breeding, and loving dairy goats at Redwood Hill Farm & Creamery for 43 years. A pioneer in the artisan dairy goat products movement, Jennifer often speaks about the tradition and practice of artisan cheesemaking and the business of goat dairying.

The Fall 2011 course will include two teaching assistants. Maureen Cunnie has been the lead cheese maker at Cowgirl Creamery for ten years and has served on the board of the California Artisan Cheese Guild as President and Co-Chair for Education Committee. Patrick Laherty is a 2011 graduate of the certificate program and a hobby cheesemaker.

#### *Hygiene and Food Safety in Cheesemaking*

This class was taught as a one-day classroom seminar in Winter 2010. The committee has since condensed this course into a four-hour seminar based on student evaluations. Kuba Hemmerling is the master cheesemaker and plant manager at Point Reyes Farmstead Cheese Company. He has extensive experience as a quality assurance manager and consultant, and is certified by the International Hazard Analysis and Critical Control Point Alliance. Kuba continues to teach this course.

#### *Milk Types and Quality*

This is a one-day seminar. The first course was taught by Lisbeth Goddik, PhD, an associate professor of Food Science and Technology at Oregon State University and an extension dairy-processing specialist. She has helped the artisan cheese industry grow in Oregon through her cheesemaking classes. She has worked and studied in France with artisan cheesemakers at two leading cheese schools.

The Fall 2011 course will be taught by Amy M. Lammert, PhD. Amy is an assistant professor in the Dairy Science Department at California Poly, San Luis Obispo.





**Artisan Cheese Preparation Fall 2010**

#### **4.0 Student Enrollment**

A total of 326 students enrolled and participated in the six-class certificate program over the 2010-11 year. Two classes were offered in the fall, two in the winter, and five in the spring quarter. Eleven students received certificates on April 22, 2011 after completing all six classes. An average of 33 students were enrolled in each class with nine classes offered in total. The *Introduction to Cheese* class is offered each quarter due to its popularity.

Six classes are being offered for Fall, 2011, two for winter, and five for Spring 2012. The increase in class offerings is in direct response to student enrollment and desire to complete the six-course certificate. During this second year, the two-day *Principles and Practices of Cheesemaking Course* will be offered twice (fall & spring) as well as *Cheese Chemistry, Food Safety, and Basic Starter Cultures*. Enrollments for Fall 2011 reflect a similar level of interest with an average of 25 students registered for each class.

As expected, 70% of students were Marin residents, followed by 20% from Sonoma, 7% from the East Bay and San Francisco, and 3% from Napa and Mendocino Counties.

#### **5.0 Course Evaluations**

UCCE staff provided assistance with the development of this program by tracking student progress via evaluations and in-person interviews.

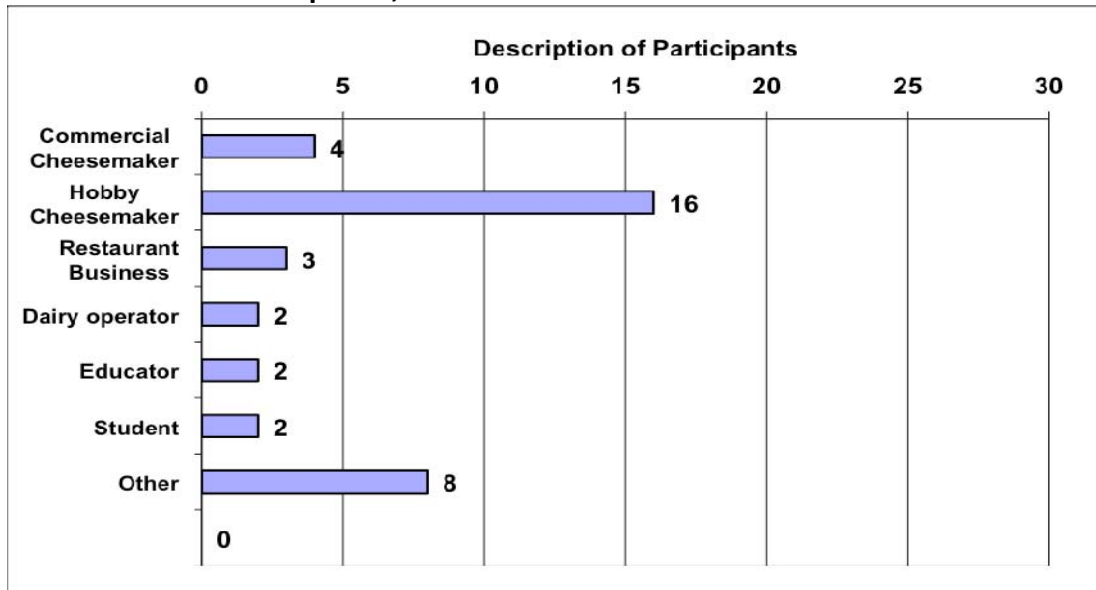
219 students completed course evaluations for a 95% response rate. Class evaluations were conducted for all six-class offerings at least once. Students were asked about their expectations, satisfaction with materials covered, increased knowledge of topic, and usefulness to them. Respondents consistently rated the classes in the 90% percentile or higher.

An overwhelming 98% (n=189) had plans to use their new knowledge. When asked about how they planned to use the information gained, their responses ranged from cheesemaking at home, to expanding cheese offerings in their restaurant, to beginning a career in artisan cheese in some capacity.

Students were asked to provide an overall rating of the classes ranging from fair, to good or excellent. Eighty-nine percent (89%) or 189 students chose excellent; and 11% selected good. When asked about whether they would recommend the classes to others, 100% responded yes.

Students in the Fall 2010 course in *Basic Starter Cultures* self described themselves into the following categories seen in Table 1. These self-selected descriptions remained consistent throughout the 2010-11 courses as the first wave of students moved through the pilot certificate program.

**Table 1. Student descriptions, Fall 2011 Basic Starter Culture Class**



In summary, 78% of the enrolled students are hobbyists, educators, or students interested in learning more about artisan cheese. Less than a quarter (22%) of the students are commercial cheesemakers, restaurateurs and dairy operators.



Of the eleven students who obtained their certificates this past April, all categorized themselves as hobby cheesemakers.

### ***Employment potential***

While the majority are not career students looking for employment in the commercial cheese industry, some students are focused on a future career trajectory in artisan cheese.

For example, Luis Mora, an assistant cheesemaker at Point Reyes Farmstead Cheese Company, is taking classes in the Artisan Cheesemaking Certificate Program at the College of Marin. He says, “ I need to learn more and hope to one day become a head cheesemaker at a local company. Taking the certificate courses gives me the diversity of information I need.”

Three students were hired by commercial cheesemakers based on their knowledge gained from the Certificate program. Barinaga Ranch hired an affinage assistant and an assistant cheesemaker. Point Reyes Farmstead Cheese Company hired a quality technician assistant for their quality assurance program.

Says Marcia Barinaga from Barinaga Ranch, “The program served as a valuable source for me for finding students who were interested in cheese and who were looking for employment in cheesemaking. I asked Daphne Zepos to keep an eye out for good students who she would recommend as employees and Daphne's recommendations helped me to find the employees I was seeking. The general overview of cheese that they acquired in Daphne's survey class was valuable as a foundation on which I could teach them the specifics of working with my cheese.”

The ratio between students who make their living in some aspect of commercial food and/or cheesemaking, and those students who are exploring artisan cheese as a home hobby, as a possible career exploration, or to simply expand their knowledge about cheese, remained consistent throughout the 2010-11 pilot year.

## **6.0 Student Suggestions for Improvements**

### ***Classroom infrastructure***

Indian Valley Campus Dean, Nanda Schorske, and Interim CE Director Janice Austin and her staff worked quickly to set up Pomo 154. This classroom is used for the CE cheese classes as well as Guild seminars offered several times throughout the year. New tables and chairs were set up and a refrigerator and shelf space made available in the adjoining lab equipment room. CE staff coordinated the delivery of an LCD projector and laptop and CE registrar Heather Peitz handled class registration on the first day. Ellie Rilla has been in attendance for all of the year one classes to introduce instructors, answer certificate questions, provide continuity and conduct evaluations.

Unfortunately there was an insufficient number of tables to match the high enrollment each quarter. Numerous requests for two additional tables went unanswered by the CE Interim Director. Students had to squeeze four to a table, blocking the aisle, or sit in the back with no table surface for classes that required a working surface.

It became apparent once winter set in that the thermostat and heating system didn't work in the room or worked sporadically at best. During one class, UCCE staff had to find someone on campus to move the class to another classroom it was so cold.

Pomo 154 is vintage 1970's but has the potential to serve the Cheese Certificate Program well if the water in the various lab sinks that flank the walls were operable. There is currently only one sink that has running cold water. Hot water is needed to clean as well as work with cheese preparation. Without access to a culinary kitchen of some sort, the growth of this program is severely limited. The Certificate Program needs to either move to a space where basic hot water and sinks function or fix the sinks in Pomo 154.

While minor, the fact that the clock doesn't work when the instructor is asking students to return at a specified time simply adds the experience that "nothing works" in the room.

Students in the classes have noted and requested these improvements and it is extremely frustrating as a partner coordinator to feel powerless to improve the working conditions. As one student noted, "the classroom needs to be better maintained and repaired with temperature control and lighting, and we need hot water, especially for the fees we are paying!"

In order for the program to continue to flourish, more hands-on lab experiences are needed. For example, students wanted to use a pH meter and thermometers, and prepare trial cultures in small batches. In order to do accomplish this, these basic classroom improvements are necessary.

### ***Hobby or career focus***

Some students found that the program was too technical and difficult to follow without a strong science or chemistry background. Based on this feedback, the catalog program description was edited to include the following text:

*"It is highly recommended that students with no background knowledge in food science, microbiology, or chemistry prior to taking the classes start the program with A Full Introduction to Artisan Cheese and Its Traditions. Commercial cheesemakers and students with a professional background in food science*

*do not need to follow any sequence in order to complete this certificate program. Additionally, prior cheesemaking experience will be extremely valuable to the understanding of the process.”*

The Certificate Program will continue to be technical in nature for the serious cheesemaker, home or commercial. It is not possible to align classes to suit all student needs and demands. Many Bay Area classes are offered for students who want a less technical introduction to the basics of home cheesemaking.

### ***Program fees***

Seminar costs, while high when compared with other CE offerings, are similar to other classes offered on the same topic in Washington, Oregon and Wisconsin. All but two instructors are local, so out-of-state travel and per diem costs add to class and material fees.

### ***Resource materials***

Overall, the majority of students were satisfied with the handouts provided by each class instructor. Students asked for a resource handout that included books, websites and other technical and educational materials. This was developed by UCCE staff Ellie Rilla and is available online at <http://cemarlin.ucdavis.edu> on the artisan and farmstead cheese page.

## **7.0 Growth Potential**

Bay Area artisan cheese classes for hobbyists abound. As of August 2011 there are offerings at the following venues:

- Beverage People, Santa Rosa
- College of Marin, Indian Valley campus, Novato
- Epicurean Connection, Sonoma
- Ramekins Culinary School, Sonoma
- Santa Rosa Junior College, Santa Rosa
- San Francisco Cheese School
- The Fork at Point Reyes Farmstead Cheese Co., Point Reyes

For commercial cheesemakers, and cheese professionals, there are seasonal offerings by the CACG and held at the Indian Valley campus classroom as well as other venues in California. In 2010 and 2011 the Guild ,held classes in Food Safety, Cheese Defects, Spanish Language Cheese Making, Advanced Cheese Microbiology, and Development of Cheese Quality Attributes.

Each March brings California’s Artisan Cheese Festival to the Petaluma Sheraton for three days where consumers, hobbyists and professionals mingle, taking classes, fieldtrips and tasting cheeses.

There are 27 commercial cheesemakers in the North Bay<sup>4</sup>, the largest concentration in the state. Survey results from an earlier report<sup>5</sup> confirm the many positive aspects of a diverse and thriving artisan and farmstead cheesemaking community—from growth in and variety of cheeses made here, to the increasing interest in and demand for artisan cheeses by consumers.

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Sonoma Marin Cheese Trail Map. 2011. Online.

Available at: <http://www.marineconomicforum.org/>

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<sup>4</sup> Sonoma Marin Cheese Trail (2011)

<sup>5</sup> Coming of Age: The Status of North Bay Artisan Cheesemaking (2011).