

Beginner Cheese Making

Michele Kline
Nellie's Knoll Creamery

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Introduction: Welcome

Grew up in Greene County – Hobby Farm - FFA

Agriculture Teacher / FFA Advisor since 200

Met husband 2010

Bought a starter herd in 2013.

Bought the property in 2017... abandoned!

Started building our creamery in October 2018 – Finally licensed in April 2021

We make soaps, lotions, chevre, feta, drinkable yogurt, kefir, and bottled milk.



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Objectives

- Following the workshop, you will:
 - Have a basic understanding of what is involved in cheesemaking
 - Become familiar with the necessary equipment and ingredients for cheesemaking, such as milk, cultures, rennet, and utensils.
 - Have a practical, hands-on experience in making and/or flavoring a basic cheese, such as mozzarella or chevre
 - Be able to locate books, websites, and organizations where you can continue to learn about cheesemaking.

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Tasting – Instructions....

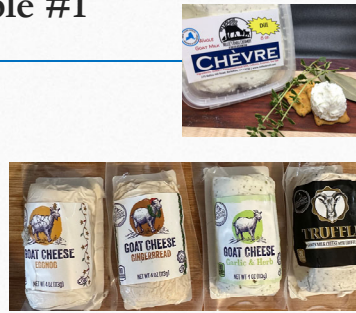
- Take one piece of at least FIVE different samples of goat cheese, **note the number of the sample** on your plate.
- Taste sample #1.
- On your worksheet, describe the flavor, texture, appearance, smell ...in your own words!
- Take a bite of a cracker / sip some water to cleanse your pallet.
- Repeat for each sample.

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Sample #1

Chevre

- Rolled or packaged in a tub.
- Delicate, with a creamy texture that is balanced by a slight lactic tang and grassy, pastoral notes.
- Fresh
- Soft



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Sample #2

Swiss • Wheel

- A yellow, medium-hard cheese that originated in the area around Emmental, Switzerland. It is classified as a Swiss-type or Alpine cheese
- Ranges in flavor from fruity to nutty.
- Aged
- Medium hard



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Sample #3

Blue

- Firm and crumbly with a salty flavor.
- Blue veining
- Pungent

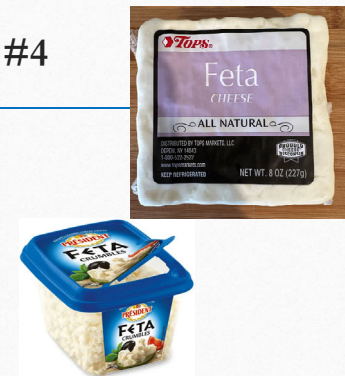


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Sample #4

Feta

- Feta is a Greek brined white cheese made from sheep's milk or from a mixture of sheep and goat's milk.
- It is soft, with small or no holes, a compact touch, few cuts, and no skin.
- Crumbly with a slightly grainy texture, it is formed into large blocks and aged in brine.
- Salty.



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Sample #5

Cheddar (Extra Sharp)

- Many types of cheddars
- Each with its own unique flavor and texture
- Mild is young and smooth, with a subtle, buttery taste.
- Medium slightly stronger flavor,
- Sharp cheddar has a tangy and robust



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History of Cheesemaking

1. <https://nationalhistoriccheesemakingcenter.org/history-of-cheese/>
2. Goats: one of the first domesticated livestock species. Cheesemaking Thought to have started in what is now Iran.
3. Poor Man's Cow – goats thrive on marginal land.
4. 8th century the Moors brought goats to the Loire Valley, birthplace of chevre.

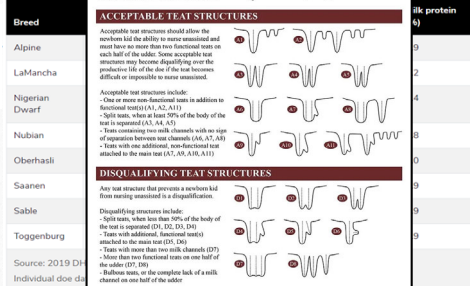
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It's all about

Composition can vary not only by breed but also by individual factors like diet, age, health of the goats, and stage of lactation. These values are approximate averages:

Saanens are known for quantity. Boers are primarily meat goats. Note components! Nubians have high-fat content. Nigerian Dwarf are small but are known for high fat milk. Other breeds are well-balanced.

Trivia: World record for butterfat is 10% - Set by a Nigerian Dwarf in 2015!



1 Note: Boer goats Milk fat 7.1 Milk protein 5.1

PREFERRED TEAT STRUCTURES
Preferred teat structures offer the newborn kid the best opportunity to nurse successfully.

Preferred teat structures consist of either one or two teats separated. Functional teats on each half of the udder (P1, P2). One additional, non-functional teat further toward the body's sternum is not discriminated against (P3, P4).

ACCEPTABLE TEAT STRUCTURES
Acceptable teat structures should allow the newborn kid the ability to nurse unassisted and must have an areola that has functional teats on each half of the udder. Some acceptable teat structures may be more difficult to nurse the production life of the doe if the teats become difficult or impossible to nurse unassisted.

Acceptable teat structures include:
- One or more non-functional teats in addition to functional teats (A1, A2, A3, A11)
- Split teats, when at least 75% of the body of the teat is separated (A4, A4, A5)
- Teats containing two milk channels with no sign of separation between teat channels (A6, A7, A8)
- Teats with one additional, non-functional teat attached to the main teat (A7, A9, A10, A11)

DISQUALIFYING TEAT STRUCTURES
Any teat structure that prevents a newborn kid from nursing unassisted is a disqualification.

Disqualifying structures include:
- Split teats, when less than 75% of the body of the teat is separated (D1, D2, D3, D4)
- Teats with additional, non-functional teats attached to the main teat (D5, D6)
- Teats with more than two milk channels (D7)
- More than two functional teats on one half of the udder (D7, D8)
- Bulbous teats, or the complete lack of a milk channel on one half of the udder

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#1: MILK QUALITY

- Safety & Sanitation!
 - Pre & Post Dip Teats!
 - Sanitize your bucket, strainer, & jars. & chill your milk ASAP (Less than 2 hours)
- What impacts TASTE?
 - Handling
 - Warm milk poured into chilled milk, Clean udders
 - Diet
 - Proximity to the Buck
 - Cleanliness of the living quarters
- FRESH FRESH FRESH!



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Ingredients & Equipment

- **Ingredients**
 - Milk: The primary ingredient, most commonly (in the US) cow's milk but can be goat or sheep milk.
 - Starter Culture: Contains bacteria to ferment the milk.
 - Rennet: An enzyme to coagulate the milk.
 - Salt: For flavor and preservation.
- **Equipment**
 - Thermometer, large pot, and cheese molds.

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Sanitation & Storage

- Ensure that all equipment is clean and sanitized!
- Know how to store cultures & rennet
 - Freeze cultures
 - Refrigerate Rennet

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Cheesemaking Steps – Simplified...

1. Heat the milk- each type of culture has an ideal temperature for growth
2. Add Starter Culture
 - Mesophilic vs. Thermophilic
3. Coagulation
 - Add dilute rennet to the milk causing the milk to form curds.

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Cheesemaking Steps – Simplified...

4. Cut the Curds
 - Once the curd has formed, cut them with a long knife.
5. Heat and Stir
 - Gently heat the curds raising the temperature to expel the whey.
6. Drain & Mold
 - Drain the whey from the curds using a colander or cheese mold

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Steps - Simplified

4. Pressing

- Place the curds into a cheese mold, press them to expel more whey, and shape the cheese.

5. Salting

- Sprinkle salt on the cheese or soak it in a brine solution for flavor and preservation.

6. Aging

- Place the cheese in a cool, humid environment to age. These requirements vary by cheese type.

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Hands on Activity!

- How Chevre is made (commercially)
<https://www.youtube.com/watch?v=RFiB2kstefA>
 - Did you see anything that you question?
- Roll your own Goat Cheese! (Thank you, Lively Run!)
 - Log, Balls, or a Disc...
 - Flavor and enjoy!

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Summary

- Role of culture
- Types of culture
- Role of rennet
- Curds & Whey
- Milk Quality
- Sanitation

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Thank You!

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References & Resources

1. Boer Goat Milk Components:
<https://www.sciencedirect.com/science/article/abs/pii/S0921448803003341>
2. Dairy Goat Milk Components: <https://extension.psu.edu/dairy-goat-production>
3. New England Cheesemaking (molds, recipes, cultures, enzymes) - <https://cheesemaking.com/>

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My Contact Information:



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- Watch for Tours & Classes after June 2025!
- Bottle Babies available now through May...
 - Registered Pure / American / Grade Nubians – (Sires include: Redwood Hills MC Empire Chaos AN1684405 & Brass Bell Red Will Danaher AN2236476 (Grandson of Woest-Hoeve Marlon the Gator)
 - Grade Saanens – (sired by Royal Colors CTH Revere AS2327196)
 - Boer/Nubian Crosses (Sired by above)

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