

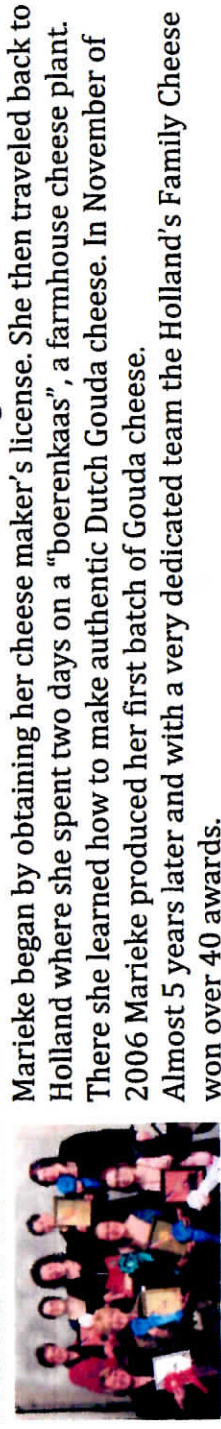
GOUDA CHEESEMAKING SESSION



INTRODUCTION

Rolf and Marieke Penterman are first generation Wisconsin dairy farmers having moved from the Netherlands to Wisconsin in 2002. Because Holland is so small and the population so dense, farmers are limited in how much land they can obtain for dairying. Having both grown up on small, 60-head dairy farms in the eastern part of Holland, Rolf and Marieke wanted to pursue their passion for dairy farming in an area that would afford them the capabilities of expansion.

After some time, Rolf and Marieke started to miss the cheeses from the Netherlands and decided they would like to add more value to their milk and conceived the idea of making some of it into cheese.



Marieke began by obtaining her cheese maker's license. She then traveled back to Holland where she spent two days on a "boerenkaas", a farmhouse cheese plant. There she learned how to make authentic Dutch Gouda cheese. In November of 2006 Marieke produced her first batch of Gouda cheese. Almost 5 years later and with a very dedicated team the Holland's Family Cheese won over 40 awards.

PRODUCTION OF DUTCH GOUDA CHEESE

- ⊖ Pasteurization 68°C for 30 minutes (batch pasteurization) or at 72°C for 15 seconds (Flow pasteurization), pre-heat or Raw Milk.
- ⊖ Measure the quantity of cheese milk accurately, too measure quantities of additives to be add: **30 liter**
- ⊖ add cultures at least 30 minutes before adding rennet
- ⊖ add calcium chloride (15 ml per 100 liter): **4.5 ml calcium chloride**.
- ⊖ Cool the milk to rennet temperature, i.e. approx. 30°C.
- ⊖ Add rennet to the milk (20-25 ml / 100 liters); 0.6/0.75 ml
- ⊖ Do not disturb the milk during rennet.
- ⊖ Check if the coagulum is ready to be cut with a ruler or hands.
- ⊖ Plunge the stem of a ruler or fingers below the surface layer and lift the coagulum causing it to break in a cleavage line. A smooth break indicates that the curd is ready to be cut.
- ⊖ While cutting a part of the curd, the whey escapes from the coagulum. (about 10 minutes)
- ⊖ Drain 50% of the volume of the cheese milk; $\frac{1}{2} \times 100 = 50$ liters of whey.
- ⊖ Immediately after the whey drainage starts stirring to separate the curd particles.
- ⊖ Increase the temperature of the whey/curd mass to the cooking temperature of 34-35°C with the addition of hot wash-water (approx. 45- 60°C).
- ⊖ After the addition of the hot wash-water the actual stirring/washing time starts, 30 -45 min.
- ⊖ The purpose for adding water is, to lower the lactose concentration.
- ⊖ This is necessary to prevent the cheese from getting too acid.
- ⊖ Now the curd particles have the size of a grain of rice.
- ⊖ The curd is ripe when:



- Curd particles made into a "ball" in your hand and pressed, separate from each other quite easily when the "ball" is released.
- ⊖ Collect the curd with a strainer.
- ⊖ Transfer curd into molds.
- ⊖ Let whey drain from the cheese mold for 10 minutes.
- ⊖ Pressing gives the cheese its final shape, firm surface and correct final moisture content.
- ⊖ Total pressing time is 2-3 hours. The pressure is increased gradually.
 - 1st hour: 4 - 5 times the weight of the cheese
 - 2nd & 3rd hour: 5 - 7 times the weight of the cheese
- ⊖ Brining is a method of salting the cheese. The purpose of brining cheese is:
 - To improve the storing quality
 - To improve the consistency
 - To improve taste and aroma
 - To protect the shape
- ⊖ Duration:
 - 1 kg cheese approx. 12 hours
 - 2 kg cheese approx. 24 hours
 - 8 kg cheese approx. 72 hours
- ⊖ After brining the cheese is treated with plastic to protect it from drying out and to restrict the growth of mold



- ⊖ Now the cheese must be left to ripen in a store room. Proteins, fats and lactic acid are broken down.
- ⊖ A cheese for consumption (higher moisture content) is ripe after four weeks.
- ⊖ A cheese to preserve (lower moisture content) ripens slower and can take for example 1 year or longer.



Thanks for being patient with me and hope you enjoyed it!

(Gouda) Cheese,

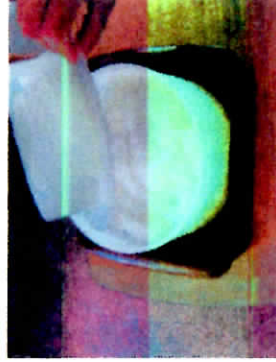


Marieke Penterman
www.hollandfamilycheese.com

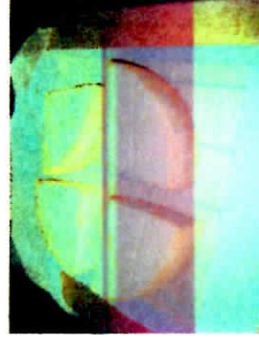
Basic Pressed-cheese Steps (page 2)



12. Curds are carefully broken up into smaller pieces without squeezing, known as "milling." The curds are then salted, and the salt is mixed in carefully with your hands.



13. Pressing the curds: curds are packed into a mold lined with coarse cheesecloth. The follower is placed on top of the curds, and weight is applied to the top of the follower. Different amounts of weight are applied for different amounts of time, depending on the type of cheese; pressed curds might be unwrapped and flipped before being rewrapped and pressed more with more weight.



14. Pressed cheese is removed from cheesecloth and can be cut into quarters to be air dried on a cheese mat. Cheese is turned several times a day for even drying. Mold might develop on the surface of the cheese while drying; it can be wiped off with a piece of cheesecloth dipped in vinegar.



15. After cheese is air-dried, most types are either waxed or vacuum sealed for aging. Cheese wax is melted in a double boiler (NEVER microwave, it will explode!) and the cheese wedges are dipped in the wax until completely covered. Alternatively, cheese wedges can be sealed in plastic pouches with a vacuum sealer. Cheese can then be aged as necessary.

Basic Pressed-cheese Steps



1. Pour 2 gallons milk into a clean pot



2. Heat milk by direct heat; CaCl_2 might be added at this step.

3. Add lipase (diluted in water for 20 minutes) if needed, stir in slowly (don't foam)
4. Add rennet (diluted in water), mix in with slow up-and-down motion, then stop motion in milk. Do not move milk after this step until cutting.
5. Hold at temp for time specified



6. Check for clean break of curds with clean finger



7. Cut curds: first cut across & straight down



8. Then turn $\frac{1}{4}$ turn and cut at 45° angle across previous cuts. Continue turning $\frac{1}{4}$ turn until pot returns to original position.
9. Hold cut curds for time specified off of heat.



10. Cook the curds: often done with indirect heat in a sink or water bath. Curds and stirred slowly so that they are not broken up, but they will shrink as they heat and give off whey. Time and temperature varies with type of cheese, but is key in developing final taste and texture.



11. Drain the curds. After cooking, curds are allowed to rest so they will settle to the bottom of the pot. Whey is poured off and curds are drained in a colander or strainer; **SAVE THE WHEY** to make ricotta!