

Gouda

Ingredients:

Milk	21.55 LBS
Starter	Mother Culture of CHOOZIT MM100, MM100, BT01, BT02 or KAZU. Can combine with Flora Danica
Renet	2.25 MI
Options	Annatto (0.35)
Salt	Obtained from the brine. Use no additional salt

GENERAL MILK INFORMATION

General information on milk, milk collection and type

Type of milk		Animal breed	
Date collected		Time collected	
Collection pH measured at 75 degrees. Normal pH should be 6.5 to 6.7 at 75 degrees			

CHEESE PREPARATION PHASE

General cheese making information

Cheese date and time		Milk amount (lbs)	
Starting temperature		Starting temperature pH	
pH at 75 degrees		Mold used and diameter	

STARTER CULTURE

Bring starter milk to 200 to 210 degrees and sterilize for 30 minutes with lids. Use 1% or skim milk and bring down to 90 degrees to inoculate

Preparation date and time		Type of milk	
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Add DVI bacteria and mix well inside the bottle. Use the rate of 1/32 of teaspoon for every ½ gallon of milk

Culture and amount		Introduction time	
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Ripen at 70 degrees for 12 to 16 hours. pH target is 4.2 to 4.5. Looking for a consistency if light yogurt. If whey separated you have gone too far. Once pH is achieved, refrigerate. pH is the driver

Culture consistency		Total ripening time	
Culture pH		Refrigerator date and time	

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LOW TEMP PASTEURIZATION

While stirring, heat milk rapidly to 130 degrees and then turn heat source off while watching the temperature rise to 140 to 145. Maintain the temperature at 140-145 for 30 minutes while stirring often.

Comments

Cool milk rapidly to 105 degrees while stirring.

Comments

INOCULATION PHASE

If pasteurizing, take starting pH when milk is at 105 degrees. If raw milk, take milk pH at 70 degrees

pH at 70 degrees

Time at 70 degrees

Add 3.75 ounces or 110 mls of starter culture to milk at 100 degrees (if pasteurized) or 75 degrees if raw milk

Amount culture added

Inoculation temp

Bring milk to 86 to 88 degrees while stirring occasionally

Comments

Time at 86/88 degrees

Add annatto to ¼ cup of distilled water and add to milk. Stir gently for a few minutes

Comments

Maintain temperature until registering a pH drop. Target PH is 6.58. If milk already at 6.58 or lower, proceed to flocculation phase. If pH is trending low, lower flocculation temperature and average lower temperatures during the rest of the cheese making process

Comments

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FLOCCULATION PHASE

Dilute rennet in ¼ cup of ice distilled water and mix for 3 minutes.

Comments

Test for flocculation. Use floating vessel and mark the time when it no longer spins freely. Multiply by 3.5 from rennet introduction

Rennet introduction time

Flocculation time

Total curdling time

Estimate cutting time

Comments and suggestions for next run

Test for clean break. Make a 1 inch incision about ½ deep. Slide knife under incision and pull curd up. Incision should be able to continue splitting cleanly and whey should be clear yellow. Allow for further coagulation if clean break is not achieved. Target pH should not be lower than 6.55

Clean break time

Added minutes

Comments

CURD CUTTING PHASE

Cut curds vertically at a separation of ½ inch. Pause and allow curds to heal for 3 minutes before starting cross cuts and then allow curds to heal for 6 minutes.

Initial cut time

Heal time

Comments

Using horizontal needle cutter, cut curds starting at the bottom at about ½ to ¾ intervals changing rotation direction on each cut. Then heal curds for 6 minutes

Initial cut time

Heal time

Comments

COOKING AND WASH PHASE

Heat 2 gallons of distilled water to 160 – 170 degrees. Maintain temperature

Comments

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COOKING AND WASH CURDS PHASE

Very gently stir curds for 15 to 20 minutes while keeping temperature at 86 to 88 degrees. Stirring can be done by jiggling pot. Monitor pH and shorten time if reaching 6.50 or lower. pH is the driver and you must stop if pH is under 6.50. If pH running fast increase temperature to slow down acidification up to 90 degrees

Start time		Actual cook time	
End pH		Cooking temperature	
Comments			

Allow curds to settle to the bottom for a 5 minutes and carefully remove 13 cups of whey using a metal strainer to preserve all the curd

Start time		Completion time	
Comments			

Stir until curds are no longer matted together and add 6 ½ cups of hot distilled water, one cup at a time, and stir to even the temperature. Target temperature is 93 to 95 degrees. Stir occasionally for 4 to 6 minutes and don't allow curds to stick. The addition of water will alter whey pH. Subsequent readings should be curd pH readings.

Start time		Completion time	
Start temp		End temp	
Comments			

Add 6 ½ cups of water hot distilled water and stir to even the temperature. Stir occasionally for 4 to 6 minutes. You want the temperature to reach 102 degrees. If not then heat externally.

Start time		Completion time	
Start temp		End temp	
Comments			

Gently stir curds and cook for an additional 30 to 45 minutes at the above temperature. Temperatures closer to 102 will form a dryer cheese. Monitor pH and stop if at 6.45. pH is the driver. You must stop if pH is lower than 6.35. If acidification is running fast, increase temperature to 103/104

Start time		Completion time	
Start temp		End temp	
Comments and curd pH			

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PRESS PHASE

Allow curds to settle for 5 minutes

Comments

Curds need to begin pressing while still in whey. Collect all curds and place them in a temporary mold to begin pressing phase. If using a temporary pot, preheat entire pot to minimize temperature loss. Leave just enough whey to cover curds by about 1 inch

Comments

Maintain temperature while pressing for 15 minutes under 2.5 pounds. If pH has been running fast, reduce pressing time. Target pH is 6.4 to 6.45

Temperature recover time

Completion time

Comments

Remove curds from mold and mill curd into 1 to 2 inch squares

Comments

Place cheese in final cheese-cloth-lined mold and press with 5 pounds weight for 15 minutes

Curd pH

Completion time

Comments

Redress and flip cheese and press with 5 pounds weight for an additional 15 minutes. Measure pH. If getting close to 5.8 cool cheese closer to room temperature

Curd pH

Completion time

Comments

Flip cheese, redress and place cheese in mold and press at the rate of 1 PSI for 30 minutes. If no whey comes out at 1 PSI increase PSI until whey comes out and adjust subsequent presses accordantly. Take pH at end of press time. If under 5.7 cool cheese to room temperature

Actual PSI

Completion time

Comments and curd pH

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PRESS PHASE - CONTINUED

Remove cheese, redress and observe rind. Flip and press at the rate of 1.75 psi for 30 minutes. If no whey comes out at 1.75, increase psi and offset the below psi values accordantly. Take pH at end of press time. If under 5.6 cool cheese to room temperature

Actual PSI		Completion time	
Comments and curd pH			

Remove and redress with new cheese cloth turn and press at the rate of 2.75 psi for 30 minutes. If no whey comes out at 2.75, increase psi and offset the below psi values accordantly. Take pH at end of press time. If under 5.5 cool cheese to room temperature

Actual PSI		Completion time	
Comments and curd pH			

Remove, redress and check rind for signs of closing nicely. Turn and press at the rate of 3.75 psi for 30 minutes. Take pH at end of press time. If under 5.5 cool cheese to room temperature

Actual PSI		Completion time	
Comments and curd pH			

Remove and press at the rate of 4.5 psi for until PH reaches 5.4 to 5.5. Pressing can be all night so long as pH does not drop too much. At this time cheese must be at room temperature

Curd PH		Completion time	
Comments			

BRINE AND SALTING PHASE

Rest the cheese in the cheese cave over night to allow the rind to dry up a bit

Comments	
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Place cheese in saturated brine for 10 to 11 hours

Comments	
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Dry for several days but not to long to allow for cracks. Should be dry to touch. Cheese and can take from 3 to 7 days to dry

Comments	
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AGING LOG

Monitor cheeses at least once per month and document findings

Log date and comment

Log date and comment

Log date and comment

Log date and comment

Log date and comment

Log date and comment

Log date and comment

Log date and comment

FINAL LOG

General documentation

Opening date

Opening time

External observations
including external smells

Internal observations
including smell and taste