

Cheese Production- Manufacturing scheme (basic recipe)

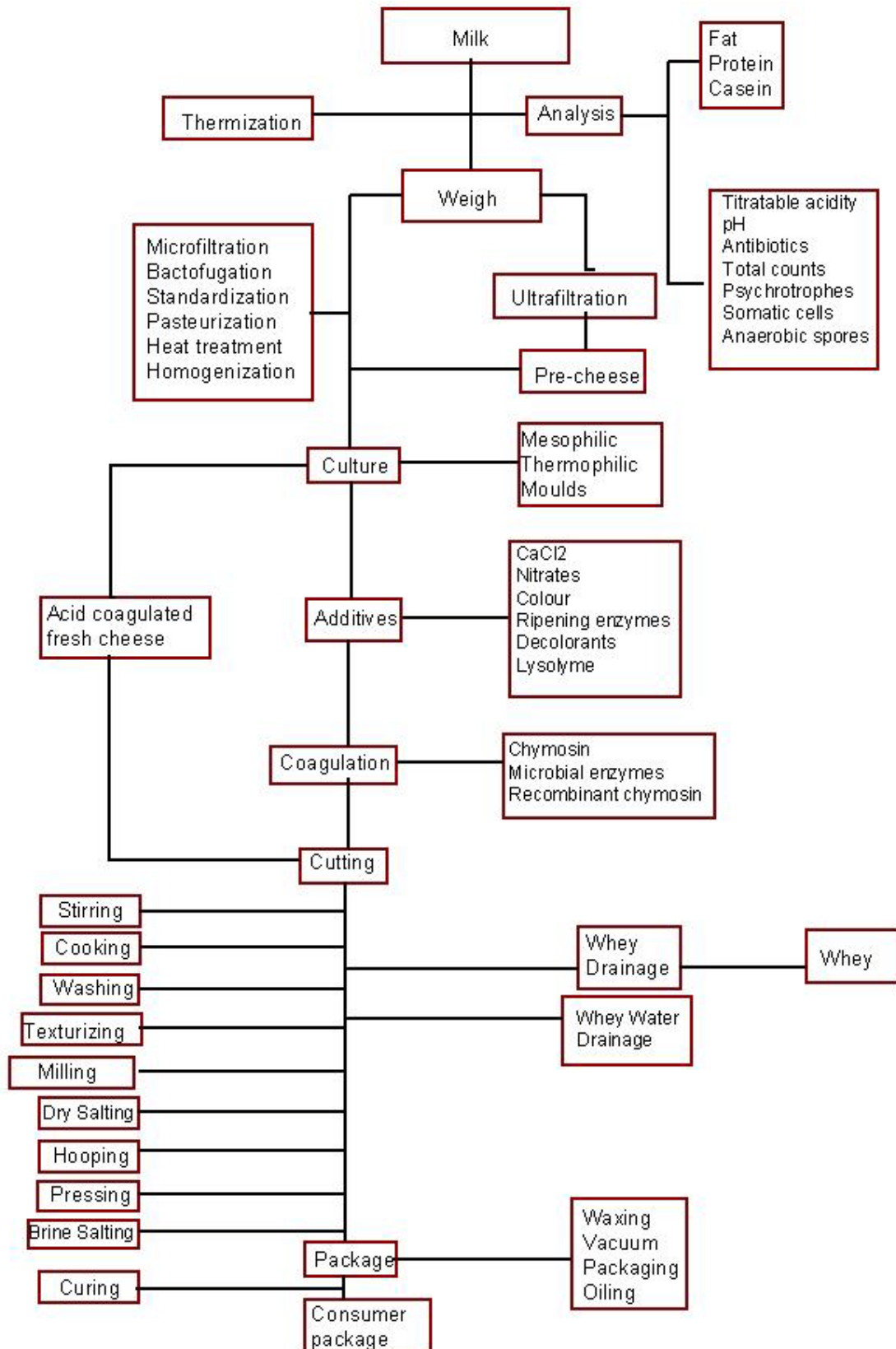


Figure 1.1 Flowchart of Cheese Making Processes. (After Irvine and Hill, 1985, Cheese Technology, In, Comprehensive Biotechnology, Cooney & Humphrey Editors, Pergamon Press, N.Y.)

Cheese Production:

Protocol for Enzymatic coagulum

Aim: cheese production will be achieved by enzymatic coagulation of proteins. This experiment will help to understand the physical and chemical changes occurring during cheese manufacturing.

Procedure*:

- ✓ Standardize the milk to a certain fat percentage (4%)
 - ✓ Pasteurize (20s at 72°C) or heat treatment (13min at 90 °C)
- 1) Weight 3 l of milk
 - 2) Cool to approximately 30°C
 - 3) Check the pH
 - 4) Ingredients:
 - Starter (0,6% per liter of milk), 250ml of butter milk
 - CaCl_2 (35% sol.) 20ml/100l milk
 - Rennet (1:10) 130ml/100l milk
 - 5) Check the pH
 - 6) Rennetting approximately 40 min at 30°C
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- 7) Check the pH
 - 8) Cutting and stirring for approximately 15 min
 - 9) Sedimentation and first whey removal ($\approx$ 30% of whey)
 - 10) Washing the curd: 25% water of 51°C, final temperature became 34°C
 - 11) Stirring for approximately 15 min
 - 12) Sedimenting the curd (3 min)
 - 13) Check the pH
 - 14) Salting
 - 15) Retrieving the curd and draining as much whey as possible
 - 16) Molding
 - 17) Pressing
 - 18) Resting 16-20 hours at 20 °

19) Brining for 1 day

20) Wrapping

21) Ripening for 10 days

** Points written in Italic will not be performed during this experiment*

Cheese Production:

Protocol for Acid coagulum

Aim: cheese production will be achieved by acid coagulation of proteins. This experiment will help to understand the physical and chemical changes occurring during cheese manufacturing.

Procedure*:

- ✓ Standardize the milk to a certain fat percentage (4%)
 - ✓ Pasteurize (20s at 72°C) or heat treatment (13min at 90 °C)
- 1) Weight 3 l of milk
 - 2) Cool to approximately 30°C
 - 3) Check the pH
 - 4) Ingredients:
 - *Starter (0,6% per liter of milk), 250ml of butter milk*
 - *CaCl₂ (35% sol.) 20ml/100l milk*
 - *Lemon juice, approximately 5 lemon/ 3l of milk*
 - 5) Check the pH
 - 6) Rennetting approximately 40 min at 30°C
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- 7) Check the pH
 - 8) Cutting and stirring for approximately 15 min
 - 9) Sedimentation and first whey removal ($\approx$ 30% of whey)
 - 10) Washing the curd: 25% water of 51°C, final temperature became 34°C
 - 11) Stirring for approximately 15 min
 - 12) Sedimenting the curd (3 min)
 - 13) Check the pH
 - 14) Salting
 - 15) Retrieving the curd and draining as much whey as possible
 - 16) Molding
 - 17) Pressing
 - 18) *Resting 16-20 hours at 20 °*

- 19) *Brining for 1 day*
- 20) *Wrapping*
- 21) *Ripening for 10 days*

** Points written in Italic will not be performed during this experiment*