Monitoring procedures
Various actions mentioned in HACCP-based plans:

**LACTIC COAGULATION CHEESES**

Cheeses made with predominantly lactic coagulation rely on acidification to set the curd. The acidification/coagulation time may vary very long, taking several hours, but the low pH involved prevents the growth of pathogenic bacteria in the curd. The pH at the end of draining is often significantly lower than 4.5. The category includes both fresh or unripened soft cheeses and others which may be ripened. While the pH of ripened cheeses may increase, especially at the end, they often lose moisture as they mature, becoming harder and they would be considered to be less technologically sensitive than some other surface-ripened cheeses.

<table>
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<th>Process step in manufacture</th>
<th>Why do we have to be careful?</th>
<th>Preventive actions</th>
<th>Checking/monitoring procedure</th>
<th>Correct actions</th>
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<tr>
<td>Filling the vat</td>
<td>M.C: Microbiological and chemical contamination of the milk from equipment and utensils (vats, stirrers, buckets, sops etc.) Dirty equipment can contaminate milk. Realises of cleaning agents can contaminate milk.</td>
<td>Ensure that equipment is always clean. Never put small items of equipment directly on the floor. (1)</td>
<td>Visual inspection</td>
<td>Prepare cleaning and/or disinfection solution sufficiently with potable water. Amend cleaning procedure if it is a recent issue (e.g. training of cheesemakers, etc.)</td>
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<tr>
<td>Maturation without inoculation</td>
<td>M: Growth of pathogenic bacteria: Milk can contain undesirable bacteria. When the number of lactic acid bacteria (LAB) is low or conditions for their development are unfavourable, pathogenic bacteria can dominate.</td>
<td>Where possible, promote the development of LAB through good animal husbandry (e.g. sheet milk production). Use proper maturation temperature and time to promote sufficiently rapid growth of LAB. (2)</td>
<td>Experience of cheesemaker; organoleptic inspection; measurement of temperature, time and acidity development.</td>
<td>Add dose of stabilising culture. Reject suspect milk (taste, etc. appearance). Adjust parameters if necessary. If apparent, treat the milk production process of infect milk ward</td>
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<tr>
<td>Maturation with inoculation</td>
<td>M: Improper process parameters can allow growth of pathogenic bacteria</td>
<td>Maintain correct temperature, time and dose of cultures. Add cultures as soon as possible. (3)</td>
<td>Experience of cheesemaker; organoleptic inspection; measurement of temperature, time and acidity development.</td>
<td>Add dose of stabilising culture. Reject suspect milk (taste, etc. appearance). Adjust parameters if necessary. If apparent, treat the milk production process of infect milk ward</td>
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<td>M: Contamination of milk during inoculation due to poor quality of starter bacteria or inadequate handling by the cheesemaker</td>
<td>Use only starters of known origin (including homemade starters) or those with a certificate of contamination as suitable for food use. Handle with care. Reject starters of suspect odour, colour or appearance. (3)</td>
<td>Experience of cheesemaker; organoleptic inspection; measurement of temperature, time and acidity development.</td>
<td>Visual and organoleptic inspection of direct or indirect starters</td>
<td>Reject inactive starters or those with suspect or damaged packaging. Adjust bulk starter preparation procedure</td>
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</table>

- **Visual control**
- **Acidity measurement**
- **Organoleptic control**
- **Temperature measurement**
Use of instruments

- pH meter
- Burette
- Thermometer
Use of instruments

- pH meter
- Burette
- Thermometer

5.3 SH measurement
5.4 pH measurement

2.5 Maintenance of equipment

7.7 Groupwork on self-monitoring of milk
Use of senses

- Sight
- Smell
- Taste
- Touch
- Hearing
Use of senses

- Sight
- Smell
- Taste
- Touch
- Hearing

2.3 Premises and equipment
2.4 Buying and making equipment
3.1, 3.2, 3.3 Cultures
3.4 Coagulants; 3.5 Brines
Examples of Sensory inspection

Checks on tanks, vats, equipment, moulds, tools, clothing, etc.
- Is it clean?
- In good condition?
- Does it have a normal appearance and smell?
Examples of Sensory inspection

Check on raw material, ingredients, brine, packaging material, etc.

- Does it have a normal appearance / smell / taste?
- Not expired?
- Is this the correct dosing?
- Is it clean, intact?
Examples of Sensory inspection

Check during production process and ripening (formation of gel, drying of cheese surface, development of flora on rind, etc.):

- Does it have the expected appearance / smell / taste / sound?