



Critical control points in milk production

For milk production it is very important, that the hygiene conditions are guaranteed from cow to bottle. This brochure is based on the "hygiene in milk production" regulation (VHyMP) of the Swiss Government. In addition to the hygiene standards the regulation defines the requirements for the dairy related infrastructure.

The better the hygiene, the longer the stability of the milk and the dairy products

Basic roles:

- › Only cows with healthy udders: California Mastitis Test (Schalmtest) negative or measuring electrical conductivity (EC) of the milk is used as a test of udder health for detection of subclinical mastitis
- › All used Equipment including milking cluster has to be cleaned accurately (acid/base – washing, rinsing with hot water)
- › Continuous adherence of temperature after cooling of milk below 6°C (cooling chain)
- › The main question is: is there any potential contamination with unclean equipment, rooms, staff, plant facilities? Is milk being exposed to it with direct contact?

Checklist

Milking	Yes	No
› All buckets, tanks and milk filters cleaned		
Storage		
› Milk tank before filling with fresh milk complete cleaned		
› Temperature of milk storage at max. 6°C		
› Connecting parts, pipes, especially threaded connection well cleaned		
Filling equipment of bottles		
› Pipes cleaned and washed		
› Equipment is dismantled and cleaned before filling of bottles		
› Are there any difficulties to clean parts or corners on the equipment		
› If yes construction needs to be changed – everything needs to be cleaned easily		



Bottles		
› Are new bottles used?		
› Avoid contaminated air to get into the bottles by putting them upside down or in closed and perfectly hygienic environment		
› If bottles are delivered dirty, reject them – do not accept dirty bottles (even if dirty particles would be only outside of the bottles)		
Recycled bottles		
› Are the bottles cleaned with on an acid/alkaline regime and flushed with hot water?		
› Are the bottles optically clean too?		
› Are the bottles dry and cooled down?		
› Are the bottles correctly stored? (upside down or covered to avoid air infiltration of bacteria after cleaning)		
› Storage of filled bottles		
› Is the temperature of the store for filled bottles below 6°C?		
Transport		
› Temperature of vehicle below 6°C		
Staff		
› Is the personnel using clean clothes during bottle filling? (Laundry for working clothes has to be done with specific washing powder)		
› Are there special shoes only used in the bottle filling room? No wearing of these shoes outside of this room		
Rooms		
› Is the bottle filling room easy to clean? Are there corners with bad access or cracks in the room?		
› Is there a closed room for the bottle filling equipment?		
› Is the air quality good? Clean?		
› Is the temperature during filling bellow 20°C (as low as possible temperature!)		

Cleaning:



Minimum requirement according to Swiss milk producers association (ZMP)

Hand cleaning of milking equipment and tank:

1. Pre rinsing with warm water
2. Cleaning with combined cleaning detergent and brush. Accurate dosage of cleaning detergent. Water temperature over 50°C.
3. Post rinsing with drinking water (good quality) – hot water
4. Every second day or twice a week acid/alkaline cleaning.

No using of pipes for Post rinsing. Post washing with hot water has the advantage of fast drying of milking equipment.

Automatic cleaning of milking equipment /milk tank:

1. Pre rinsing with warm water
2. Cleaning duration 8 to 10 minutes with combined cleaning detergent.
3. Accurate dosage of cleaning detergent (see product specification)
4. Checking of water quantity
5. Water temperature over 50°C
6. Post rinsing with drinking water (good quality) – hot water
7. Change cold water pipes of washing automat annually
8. Every second day or twice a week acid cleaning.

The temperature of the rinsing water should be over 85°C. Instead of hot water, disinfectant could be used, especially to clean surfaces.

Sample taking – retain sample

The monitoring of the filled bottles concerning total bacteria count (TBC) and pathogenic microorganism is important. The sample taking must be done with sterile sample collection equipment.

Recommendation: take a sample out of each tank before bottle filling and out of the bottle at the beginning in the middle and at the end of the filling process. Bring one sample cooled down to the laboratory and keep the other bottles in your cooling room until you have the results.