

# INSTRUCTIONS MACHINE MILKING GOOD PRACTICES (Level 3)

Topic	Training & information Content
7.1	Instructions hand milking techno & hygiene
7.2	Instructions machine milking good practise & ...
7.3	Problems during milking
7.4	Scoring of teat condition
7.5	Milk production recording
7.6	Calculation of costs hand vs machine milking
7.7	Which milking parlour to choose
7.8	Testing and maintenance of milking machines
7.9	Milking and cleaning routine in milking parlours
7.10	Storage and cooling of milk on farm



## 1. You will learn about (learning objectives):

- Importance of machine milking.
- How to use and adjust settings for machine milking.
- How to clean the milking machine
- Preparing for machine milking.
- How to attach the milking machine.
- How to successfully milk using a milking machine.



## 2. Background

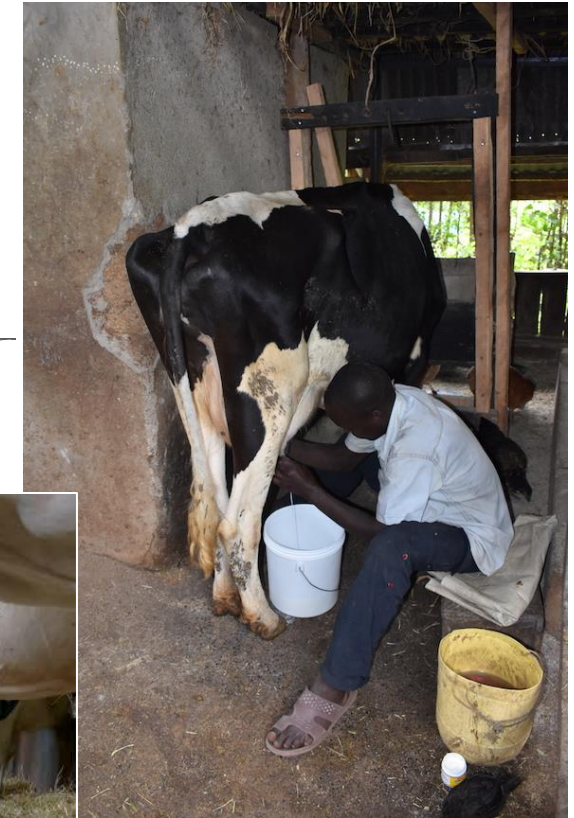
### Considerations before buying a milking machine

- Before investing in a milking machine, a farmer should think about the following important questions;
  1. Is electricity power reliably available 24/7?
  2. Availability of hot water is crucial to make machine milking become successful.
  3. Are there any training facilities?
  4. In case of the investment, is maintenance service available/nearby?
  5. Are spare parts available at any time?



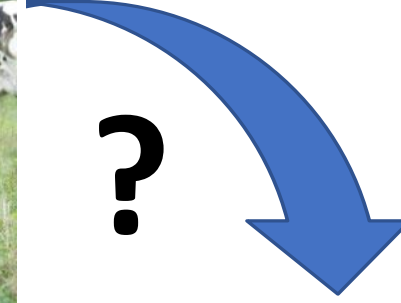
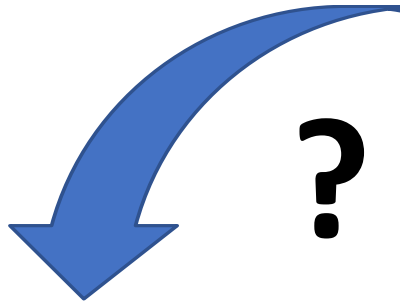
### 3. Reasons to consider machine milking

- Below are good reasons to change from hand milking into machine milking;
  1. Lack of qualified (hand) milkers.
  2. Increment of milk production per cow.
  3. Farm size.
  4. To maintain to quality of the milk, especially the somatic cell count (SCC).
  5. Financial reasons.



### 3.1 Reasons to consider machine milking Cont'd...

More cows can be milked by one person in a much shorter time.



Hand milking is cheaper



Machine: Higher quality milk



Machine: Saves times



## 3.2 Reasons to consider machine milking Cont'd...

**Remember:** Machine milking will increase the cows daily milk production.



Machine milking time (disturbance) is about 5 – 10 minutes maximum

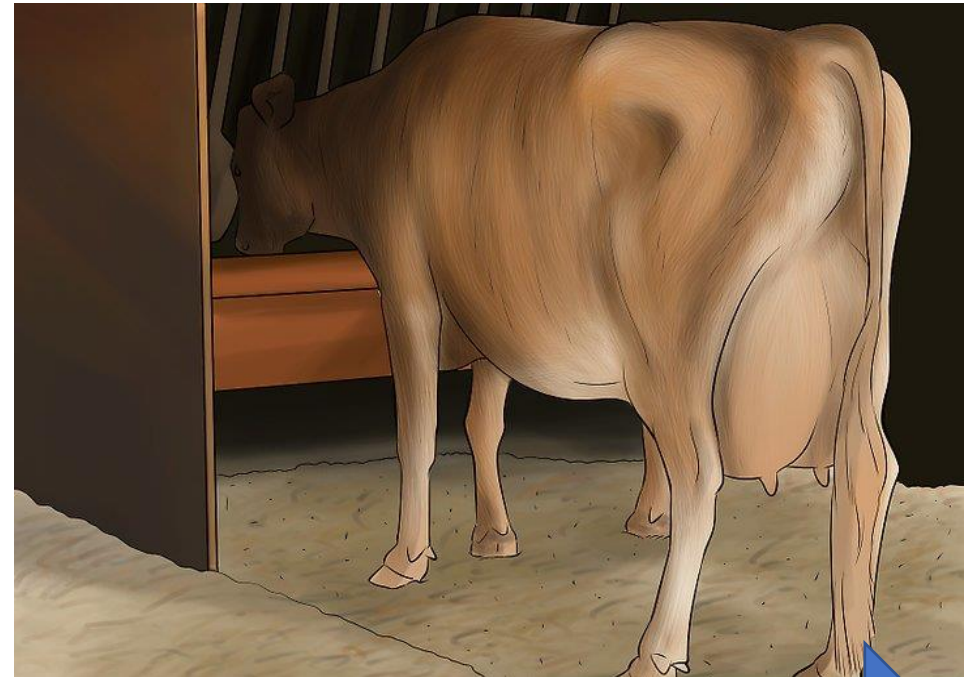


Less time milking means more time for the cow's to rest. When comfort is good, cow's will rest about 14 hours/day. Every day less than 14 hours means 1litre of milk less every day.

## 4. Milking machine



The most important piece of machinery on a dairy farm.



“Milking” is the moment when you make money.

## 5. Milking machine settings

- Settings are not exactly the same for every milking machine unit.
- Vacuum and pulsations must be checked always while milking.





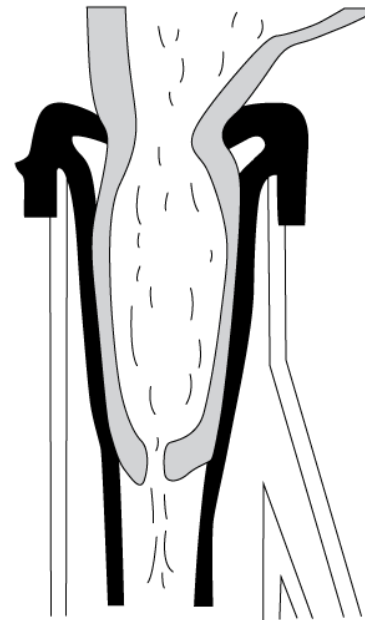
## 5.1 Settings Cont'd: Pulsation

- Usually a milking machine has 50-60 pulsations per minute.
- One pulsation is the time of milking and resting, liner open /liner closed.



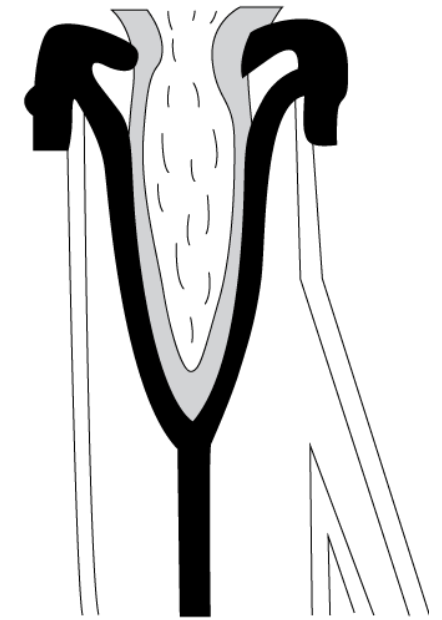
**Tip:** Check the pulsation rate while milking, stick your finger in the liner and start counting pulsations for 15 seconds. Multiply by four = pulsations/minute.

When the liner is **open**  
**Milking**



Machine milking creates a pressure difference that causes milk to flow, and the teat canal to open.

When the liner is **closed**  
**Resting**



Pulsation provides a massaging action to keep the teat healthy.

## 6. Cleaning the milking machine

- When equipment's are not in use make sure every piece of the machinery is dry and well cleaned, to avoid bacterial growth.



## 6.1 Cleaning the milking machine Cont'd...

- Pre-rinsing is a must to assure high quality milk.

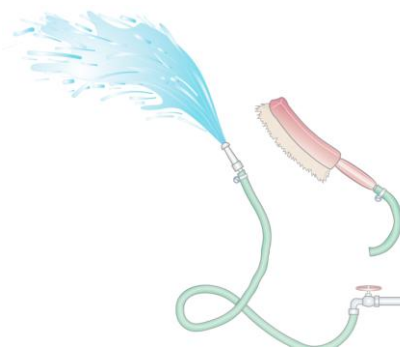


## 6.2 Cleaning the milking machine Cont'd...

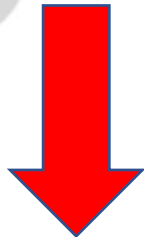
- Use 1 tablet of chlorine in 10 litres of water and use it to rinse the machine.



## 6.3 Cleaning the milking machine Cont'd...



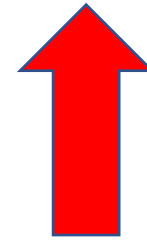
# 7. Important factors in milking



Time;



Institutions;

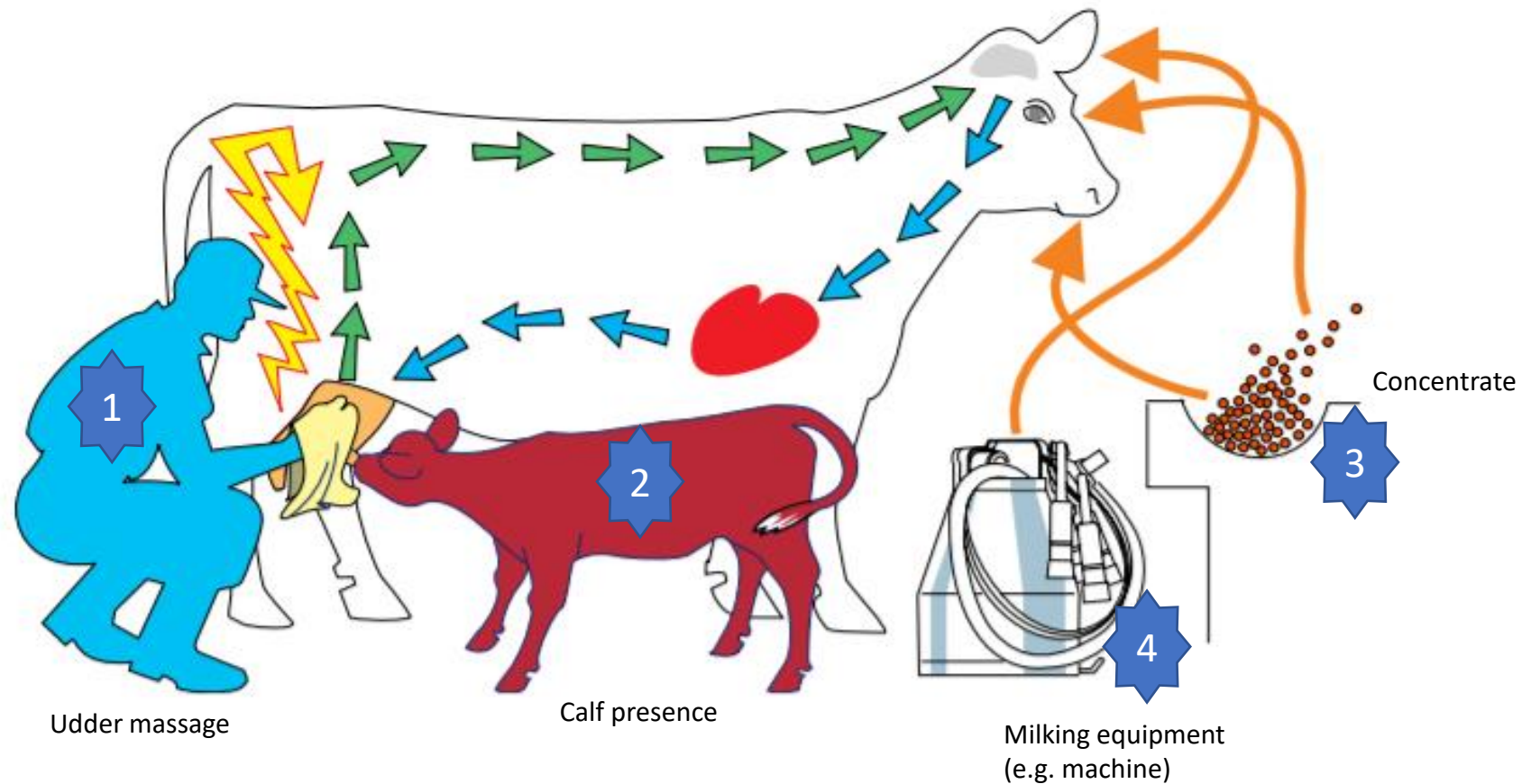


Hygiene.



## 8. Preparation for machine milking

- Before you start milking the cow, its important to prepare/inform the cow.
- When udder massage starts or when calf is near and/or concentrate is given, most usually hormone production starts, followed by easy milk let down.



## 9. Pre-milking tips



Pre dipping is an extra insurance for good quality.



Udder clipping (shaving) makes it a lot easier to clean the udder.





## 9.1 Pre-milking tips: Clean and dry



- 1; Dry paper towel.
- 2; Remove (wipe) the pre-dip disinfectant.
- 3; For each teat use a clean/dry towel.

## 9.2 Pre-milking tips: Clean and dry Cont'd...

The one and only example how to prepare a cow before she get's milked in case of dirty udder. Soap water and dry towel's makes the udder ready and well prepared for milking.



## 9.3 Pre-milking tips: Clean hands/gloves

- It is well known that (farmers) milkers-hands are infected with all kind of bacteria who may cause mastitis. Therefore it is recommended to wear plastic gloves while you are milking.



Some hands are not appropriate for hand milking, even after washing.



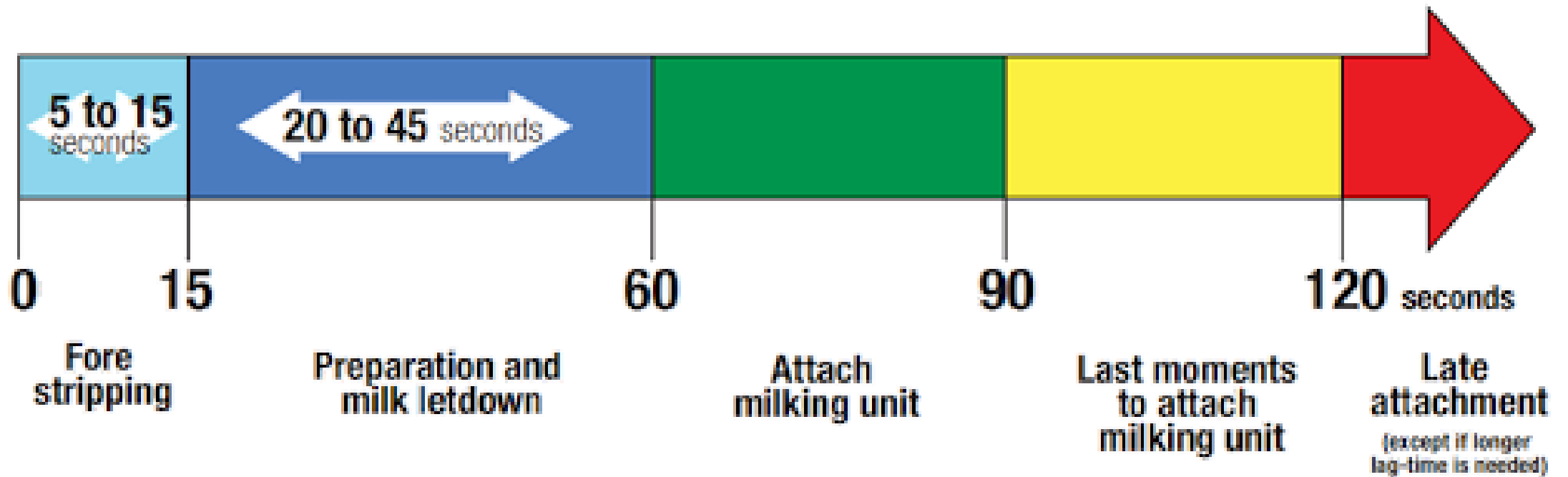
Hands must be clean and disinfected before milking starts.



## 10. Udder preparation time

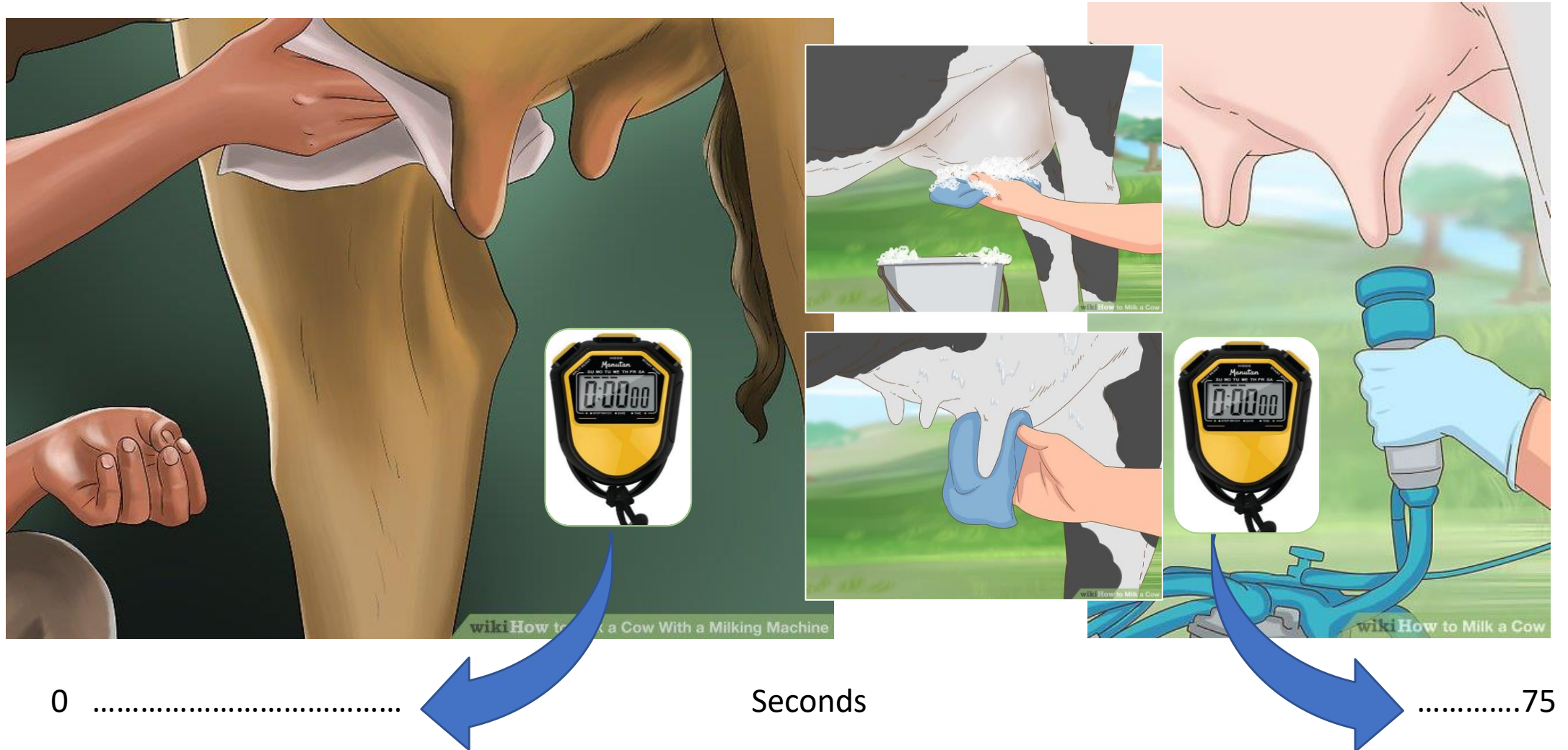
- Below is a summary of time it takes to prepare the udder before attaching the milking machine.

UDDER preparation .....Step by Step



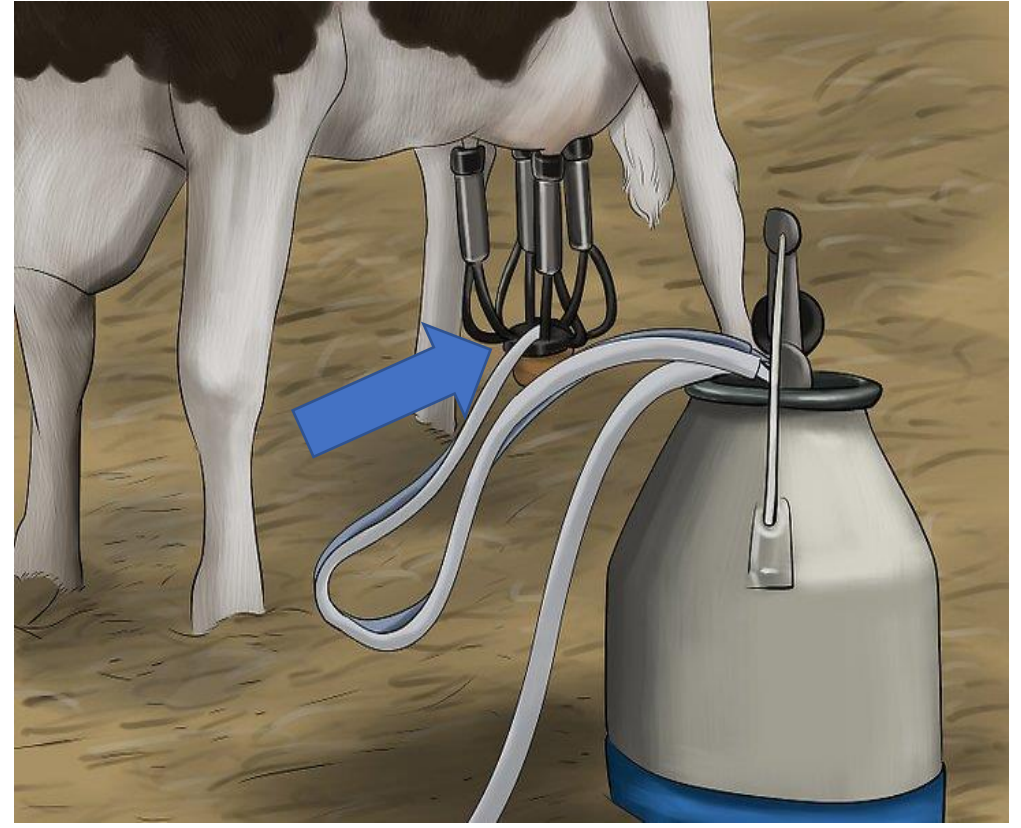
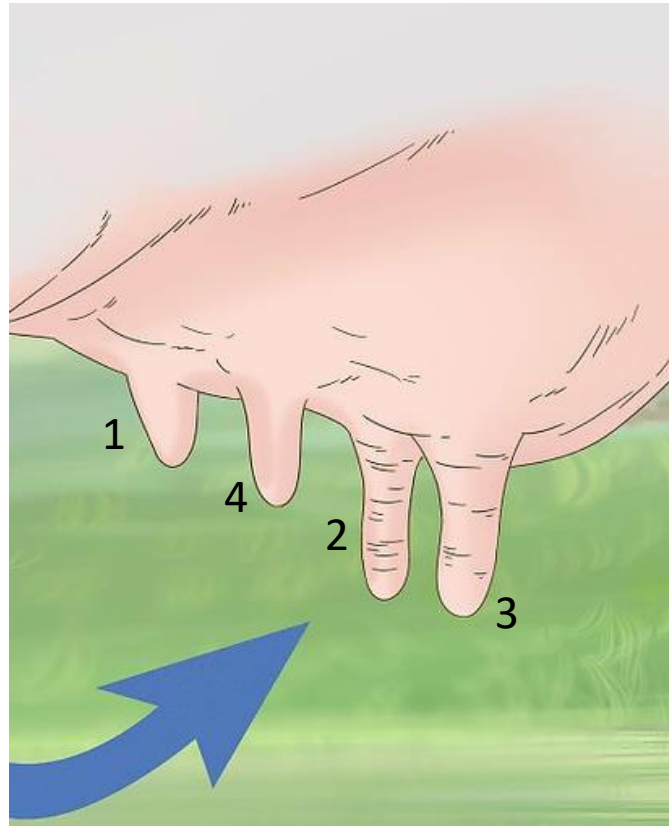
## 10.1 Udder preparation time Cont'd...

- The average time should take 75 seconds!



## 11. How to attach the milking machine

- The position of the liners is important. The direction of the head should point towards the front legs.



## 12. Successful machine milking

- Successful machine milking depends on;
  - i. knowledge and skills of the milker.
  - ii. preparation of the cow(s).
  - iii. milking technique.
  - iv. Knowledge about the technical aspects of milking machine.
  - v. milking speed.
  - vi. blind milking/over milking.



## 13. Milking speed

- Within cows there is a huge variation in milking speed when they are milked by machine.
- Speed varies between  $<1.00$  kg/minute and  $>5$ kg/minute.
- General average is about 2.5 kg/minute.

Not being aware of milking speed causes blind Milking/over milking.





## 14. Blind milking/over milking

### Signs of 'blind milking'

- No milk anymore .
- High Vacuum.
- High pulsation .

### Consequences of 'blind milking'

- Blue teats.
- Damaged teat holes.
- Waste of time.
- More incidences of mastitis.



## 14.1 Blind milking/over milking Cont'd...

- As a reminder, successful machine milking depends on knowledge and skills of the milker as well as blind milking/over milking.
- When clusters stay connected without sufficient milk stream, the cow's teat canal will be damaged and the cow will become much more sensitive for (sub) clinical mastitis.



"Swollen" .This is caused by blind milking.

## 14.2 Blind milking/over milking Cont'd...

- Avoid excess force of milking machine head while attached to the udder.

