



MilkTech International



## Cow Introduction Mastitis




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## Objectives

 This module defines mastitis and its causes.

- ❶ Forms of mastitis based on observable signs:
  - ✓ Clinical mastitis
  - ✓ Subclinical mastitis
- ❷ Forms of mastitis based on types of infections:
  - ✓ Environmental organisms
  - ✓ Contagious organisms

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## Definition of Mastitis

 Mastitis is an inflammation of the mammary gland.

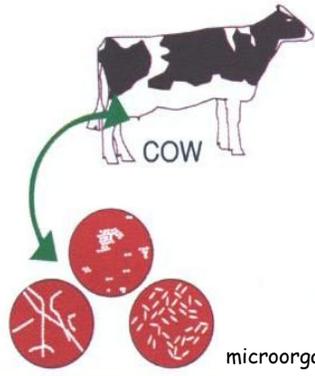
- ❶ Mastitis originates from the Greek word "mastos," meaning breast, and the suffix "itis," meaning inflammation.



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## Cause of Mastitis



 Mastitis is caused by microorganisms (usually bacteria) that enter a cow's udder through the teat canal.

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## Mastitis Classification by Major Categories of Invading Organisms

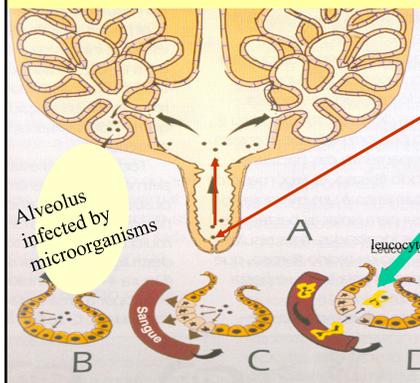
### Contagious Mastitis

- Typical contagious organisms
  - ✓ *Staphylococcus aureus*
  - ✓ *Streptococcus agalactiae*
  - ✓ *Corynebacterium bovis*
  - ✓ *Mycoplasma bovis*

### Environmental Mastitis

- Typical environmental organisms
  - ✓ *Escherichia coli*
  - ✓ *Streptococcus sp*
  - ✓ *Streptococcus uberis*
  - ✓ *Klebsiella species*
  - ✓ *Citrobacter species*
  - ✓ *Enterobacter species*
  - ✓ *Enterococcus faecali*
  - ✓ *Enterococcus faeium*

## Cows React Against Microorganisms



When microorganisms enter the udder, the cow reacts by sending chemical substances and white blood cells to the udder to defend it from the organisms.

## Inflammation

Chemical substances and white blood cells that defend the udder from the invaders cause changes in the udder and milk composition.

- These resulting changes are signs of an inflammatory process.

## Classification of Mastitis by Categories of Signs

### Clinical Mastitis

- Milk is visibly altered.
- Visible changes in the udder.



### Subclinical Mastitis

- No visible signs of changes in the udder or milk appearance.
- Changes in milk composition are detectable by other tests.

## Clinical Mastitis

🐄 Clinical mastitis is characterized by visible abnormalities in the udder or milk.

- ❶ The quarters may appear red or swollen.
- ❷ The quarters may feel hard to the touch.
- ❸ The milk may contain clots, flakes, or a clear serum-like or bloody secretion.



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## Subclinical Mastitis



🐄 If mastitis cannot be detected by visual observation, it is called subclinical mastitis.

🐄 The subclinical form of mastitis is 15 to 40 times more prevalent than the clinical form.

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## Subclinical Mastitis Detection

🐄 Subclinical mastitis can be detected by:

- ❶ Tests for the presence of microorganisms
- ❷ Tests for somatic cell count (SCC)
  - ✓ California Mastitis Test (CMT)
  - ✓ Other SCC test methods



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