



MilkTech International



Milk Quality Introduction Somatic Cell Counts




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Objectives

In this module you will learn terms and definitions regarding:

- Somatic cells
- Somatic cell count

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What Are Somatic Cells?

- ☞ Somatic cells are defense cells that all animals have in their blood to protect them from diseases.
- ☞ When microorganisms invade the udder, the cow reacts by sending somatic cells and other agents to the udder to fight against the infection.

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- ☞ Defense cells
 - ☞ Identify,
 - ☞ Surround, and
 - ☞ Destroy
 Invader microorganisms



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Functions of Somatic Cells

- 🐄 Somatic cells have two main functions in the udder:
 - ❶ Eliminate microorganisms
 - ✓ Phagocytosis is the process of engulfing and destroying microorganisms.
 - ❷ Assist with repairing milk secretory tissues damaged by infection or injury by eliminating dead cells.

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Quantifying Somatic Cells

- 🐄 The number of somatic cells in a known quantity of milk) are counted using microscopic methods and reported as the number of somatic cells per milliliter of milk.
- 🐄 Somatic cells in milk are predominantly white blood cells (or leukocytes), with a small percentage of dead secretory epithelial cells.

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Somatic Cell Count (SCC) in Milk

- 🐄 The presence of SCC indicates that the cow has reacted to the invasion of microorganisms in milk and is therefore an indicator of the health status of a quarter.
 - ❶ Milk from infected quarters will generally have an SCC greater than 200,000 cells/milliliter.
- 🐄 An elevated SCC indicates that a cow's immune system has identified an infection and is fighting it.

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SCCs in the Herd and Individual Cows

- 🐄 SCC of bulk tank milk (milk from all cows) is used to estimate the average level of infection of the herd.
- 🐄 SCCs from individual cows/quarters are used to identify which cows/quarters are infected.

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Common Tests to Measure Somatic Cells in Milk

California Mastitis Test (CMT)

- ❶ A pass/fail test
- ❷ Done on farms
- ❸ Has instant results



Electronic cell count

- ❶ Commonly done in milk labs
- ❷ Can be done on farms
- ❸ Provides a more accurate quantification of cells than CMT



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