California Mastitis Test (CMT) Fact Sheet 2

The California Mastitis Test (CMT) is a quick, simple test that accurately predicts the somatic cell count of milk from individual quarters or on composite milk samples.

WHEN TO USE A CMT

1. Purchasing cows
2. Fresh cows
3. Assess dry cow therapy
4. Assist with lactation therapy
5. Identify infected quarters on cows with high linear scores

CMT FACTS

• For the best results, take CMT milk samples before milking. Foremilk makes the best sample.

• Use the CMT to identify infected quarters

• CMT results reflect only on infections in the udder

• Dirt, manure and other particles do not interfere with the CMT reading because there is no DNA.

• Culture any CMT positive quarter to identify the specific bacteria

• Never begin lactation therapy based on CMT readings alone.

• Wait two to three weeks after treating a quarter before again using a CMT.

HOW THE CMT WORKS

The accuracy of the CMT is founded on three principles:

1. Leukocyte (white blood cells) numbers greatly increase when an injury or infection affects mammary tissue.
2. Leukocytes: especially, polymorphonuclear leukocytes (PMNs) have large nuclei (DNA) compared to other cells or bacteria in milk.
3. Leukocyte cell walls are mainly lipid (fat).

The thicker the gel in the paddle trays, the more white blood cells are present in the milk sample. The increasing thickness of the gel measures the increasing severity of the possible infection.

CMT reagent is a detergent with a pH indicator added (reason for purplish color). When milk and CMT reagent are mixed in equal amounts, the CMT reagent dissolves or disrupts the outer cell wall and the nuclear cell wall of any leukocyte, which are primarily fat (detergent dissolves fat). DNA is now released from the nuclei. DNA will gel together to form a stringy mass. As the number of leukocytes increase in a quarter, the amount of gel formation will increase in a linear fashion. Gel formation is now scored or read on a scale (CMT Fact Sheet 1).