

The California Mastitis Test (CMT)



Réseau canadien de recherche
sur la mammite bovine
Canadian Bovine Mastitis
Research Network



The California Mastitis Test (CMT) is a quick, easy and economical test for the detection of subclinical infections of a quarter. It provides an indication of the number of somatic cells found in the milk. The CMT will only trigger a visible reaction with a concentration of 400,000 cells/ml or more.

The reagent is composed of a detergent and a pH indicator. When mixed with milk, it reacts and forms a viscous gel. The more somatic cells in the milk, the thicker and the more viscous the mix will become. The change in color indicates the pH variation of the milk and therefore, the level of inflammation.

The CMT may be used for:

- Verifying the status of a cow you wish to purchase.
- Selecting which quarter(s) to test and to treat when a cow has a high SCC.
- Detecting the presence of subclinical infections at the beginning of or during lactation as part of an udder health management program.

Materials required: CMT paddle, reagent, gloves.



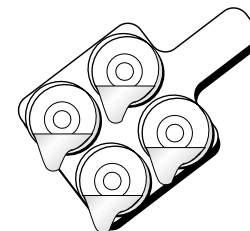
1. Make sure the teats are free from debris. Check for abnormal milk using a strip cup.



2. Always assume the same position when holding the paddle under the udder to keep track of quarters when interpreting results. Collect milk from each quarter in the corresponding paddle well.



3. 1) Tilt the paddle to remove excess milk. Keep just enough milk so that it reaches the outer concentric circle. Reposition the paddle so that the milk level reaches halfway between the two circles.



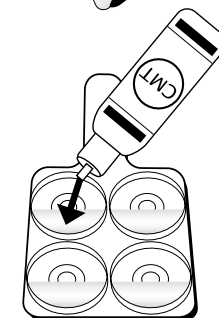
4. Mix the reagent and milk thoroughly by swirling the paddle for 10 to 30 seconds.



5. Interpret the results for each quarter immediately:

- 1) by continuing the swirling action to observe any gelling;
- 2) by tilting the paddle from side to side, and then pouring out the mixture.

2) Add an equal amount of reagent by filling each well up to the inner circle.








See interpretation chart on the back.

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Test limitations:

- 1- The CMT provides an indication of SCC, not an exact value.
- 2- The CMT result per quarter may not reflect the result from a composite sample taken for milk recording purposes.
- 3- Correct execution and interpretation depend on the user.
- 4- Results may be harder to interpret for colostrum.

	Score	Meaning	Description of reaction	Interpretation (cells/ml)
	N	Negative	The mixture remains liquid and homogeneous. It can drip out of the paddle well.	0 – 200,000
	T	Trace	There is some thickening. The reaction is reversible and the viscosity first observed tends to disappear.	150,000 – 500,000
	1	Weak positive	The mixture thickens but there is no gel forming in the middle and the viscosity observed tends to persist. The thickened mixture still pours out gradually.	400,000 – 1,500,000
	2	Distinct positive	Gel is forming in the middle of the paddle well during the swirling motion. The gel collects at the bottom of the paddle well when the swirling motion is interrupted. When pouring the mixture, a gelatinous mass falls out and may leave some liquid in the well.	800,000 – 5,000,000
	3	Strong positive	Gel is forming in the middle of the paddle well, sticking to the bottom of the well but not to the side. When pouring the mixture, it falls out without leaving liquid behind.	> 5,000,000
	+	Alkaline	This symbol is added if the reaction is clearly alkaline, as demonstrated by an intense purple coloration.	
	A	Acid	This symbol is added if the reaction triggers a yellow coloration (pH < 5.2)	

Record the cow ID and the CMT score in the logbook.

If the CMT is not done just before milking, be sure to use teat dip to prevent infections.

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Page 1: CBMRN, Faculté de médecine vétérinaire, Université de Montréal.

Page 2: Taken from the book «*Less Mastitis. Better Milk*» (Pierre Lévesque, 2004), distributed by Hoard's Dairyman (www.hoards.com).

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