

**CALIFORNIA MASTITIS TEST****1. PURPOSE**

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The California Mastitis Test (CMT) is a diagnostic tool to aid in the quick diagnosis of mastitis in dairy cows, and for an udder health management program.

The CMT is performed:

- To detect the presence of subclinical infections at the beginning of or during lactation as part of an udder health management program.
- For additional diagnostic testing for cows with clinical signs of Mastitis.

**2. RESPONSIBILITY**

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2.1 Trained and qualified personnel.

**3. GENERAL**

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- 3.1 The CMT measures the presence of elevated somatic cells in milk.
- 3.2 Mastitis, infection of the mammary tissue, stimulates the body to send white blood cells (a type of somatic cell) to the infected tissue.
- 3.3 The CMT will only trigger a visible reaction with a concentration of 400,000 cells/ml or more.
- 3.4 Mastitic milk tends to gel when tested by the CMT procedure. The degree of gelling indicates the presence and severity of mastitis. The change in colour indicates the pH variation of the milk and therefore, the level of inflammation.
- 3.5 If CMT shows a positive mastitis reaction, as determined by consulting the chart in this document, consult with the Technician so that the nature of treatment can be determined.

**4. MATERIAL**

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- 4.1 Stripping cup
- 4.2 CMT paddle
- 4.3 Reagent
- 4.4 Gloves

**5. PROCEDURES**

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- 5.1 Wear Gloves.
- 5.2 Prepare the cow for milking as per SOP [DC-605: Preparing Cow for Milking](#).
- 5.3 Collecting milk into the CMT paddle:
- 5.3.1 After discarding the first stream of milk, draw the next milk into the shallow cups on the paddle, keeping the quarters separate.
- 5.3.2 Always assume the same position when holding the paddle under the udder to keep track of the quarters when interpreting results. (Fig 1)



Figure 1:

- 5.4 Drain Excess milk:
  - 5.4.1 The ideal amount of milk is that which remains in the cup when the paddle is tilted to an almost vertical position, as shown. (Fig.2)
- 5.5 Add an equal amount of the reacting solution. (Fig.3)
  - 5.5.1 Form pools of milk in cups, as shown, by tilting paddle.
  - 5.5.2 Squirt test solution over milk. Avoid making bubbles.
  - 5.5.3 Proportion of solution to milk should be at least one to one.
- 5.6 Mix the reagent and milk (Fig.4)
  - 5.6.1 Gently rotate the paddle in horizontal plane, swirling the mixture for 10-30 seconds.
  - 5.6.2 Positive reactions occur and can be graded during this rotary motion.
- 5.7 Refer to Table 1: **Interpretation of Results.**
- 5.8 Record the CMT results on the treatment log sheet in the office.
- 5.9 Report any positive results to a technician. Positive quarters will be sampled and cultured by trained staff. Refer to [SOP DC-616: Milk Culturing.](#)
- 5.10 Milk the cow in a pail as per SOP [DC-609: Milking Pail Cows in Tie Stall](#) and [DC-610: Milking Cows with Box Stall Milker.](#)

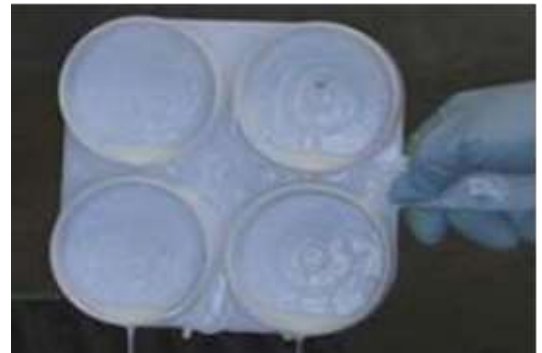


Figure 2:







Figure 3:



Figure 4:

**TABLE 1:** Interpretation of Results

	Score	Meaning	Description of reaction	Individual Quarter Sample	Bucket Milk Sample
	N	<b>Negative</b>	Mixture remains liquid. No slime or gel form. It can drip out of the paddle well.	No Mastitis	No Mastitis
	T	<b>Trace</b>	Mixture becomes slimy or gel like. It's seen to best advantage by tipping paddle back and forth, observing mixture as it flows over the bottom of cups.	Trace of mastitis	Mastitis in one or more quarters
	1	<b>Weak Positive</b>	Mixture distinctly forms a gel.	Mastitis	Define mastitis - Check quarters
	2	<b>Distinct Positive</b>	Mixture thickens immediately, tends to form jelly. Swirling cup moves mixture in toward center exposing outer edges of the cup.	Mastitis	Serious Mastitis – Check quarters

## 6 REFERENCES

Canadian Bovine Mastitis Research Network. *The California Mastitis Test (CMT)*. Retrieved from [http://www.medvet.umontreal.ca/rcrmb/dynamiques/PDF\\_AN/Toolbox/Factsheets/CMTProENG.pdf](http://www.medvet.umontreal.ca/rcrmb/dynamiques/PDF_AN/Toolbox/Factsheets/CMTProENG.pdf)

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### Document Status and Revision History

DATE	STATUS
7-Feb-2018	Version 01: MAC Campus FACC approved
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