



Mastitis Detection from Dairy Spares Limited

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Mastitis - is a very significant disease of dairy cattle and occurs in all dairy herds. It is an inflammation of the udder usually caused by a bacterial infection, although stress can predispose to this disease. Mastitis may occur in clinical form, where changes in milk are obvious, or subclinical form, where there are no visible changes. It can also be acute, where the cow is seriously ill, or chronic, where the cow may show no outward sign of ill health.

Prevention and Detection - It is recommended that all dairy producers should follow the Five Point Plan as laid down by the National Institute for Research in Dairying (NIRD)/Central Veterinary Laboratory Five Point Plan: 1, Hygienic teat management - combined with sound housing management 2, Prompt treatment of clinical mastitis 3, Dry cow therapy 4, Culling chronically affected cows 5, Correct maintenance of the milking machine

In addition, it is a requirement of the Dairy Products (Hygiene) Regulations 1995 that the foremilk is examined and discarded. Foremilking is considered the best means of detecting the early signs of mastitis.

Somatic Cell Indicators

- BV20 CMT Test Kit
- BV23 X-Spurt Mastitis Test Paddle



BV20

With udder infections there is an elevation of the somatic cell (white blood cells and epithelial cells) count in the milk. Both of these products work on a similar principle using a four sectioned test paddle and a reagent liquid, usually Sodium Lauryl Sulphate.

A small amount of milk is drawn off from each quarter into the individual tray sections, the tray is then angled to allow the correct amount of milk to be retained for the test. In the X-Spurt the 300ml (15 cow) reservoir handle is compressed to mix the reagent with the milk, with the CMT an individual shot of 3ml from the (41 cows) reagent dispenser is added to each section.

Mixing the two liquids with a circular motion, after 10 second the viscosity of each section should be assessed. If unchanged the cell count is normal (up to 250,000 cells/ml), the thicker and more gelatinous the liquid, the higher the cell count indicating the severity of the infection. A chart is used for comparison.



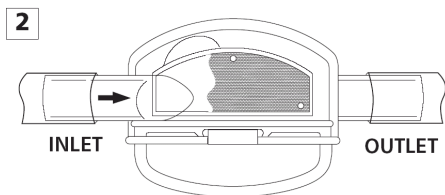
BV23

CMT Score	Average Somatic Count (Cells per milliliter)	Description of reaction
N (negative)	0-480,000	No thickening , homogeneous.
T (trace)	up to 640,000	Slight thickening . Reaction disappears in 10 seconds.
1	660,000	Distinct thickening , no gel formation.
2	2,400,000	Thickens immediately , begins to gel, levels in the bottom of cup.
3	>10,000,000	Gel is formed , surface elevates, with a central peak above the mass

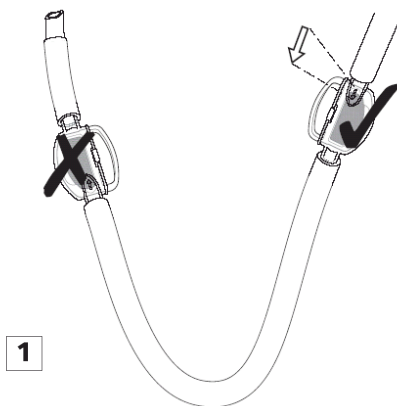


Visual Mastitis Detection

As the mastitic infection goes from the invisible subclinical stage to the clinical stage the mastitis can be visually recognised from abnormalities in the milk (clots, flakes and discolouration). A group of products is available to assist the operator with the process of visual recognition.



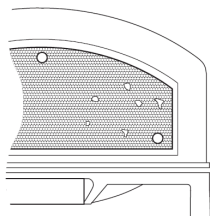
Normal milk - no clots found.



1

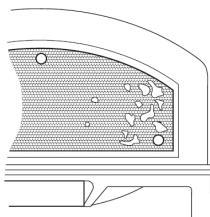
3

A few small clots found only once do not indicate mastitis.



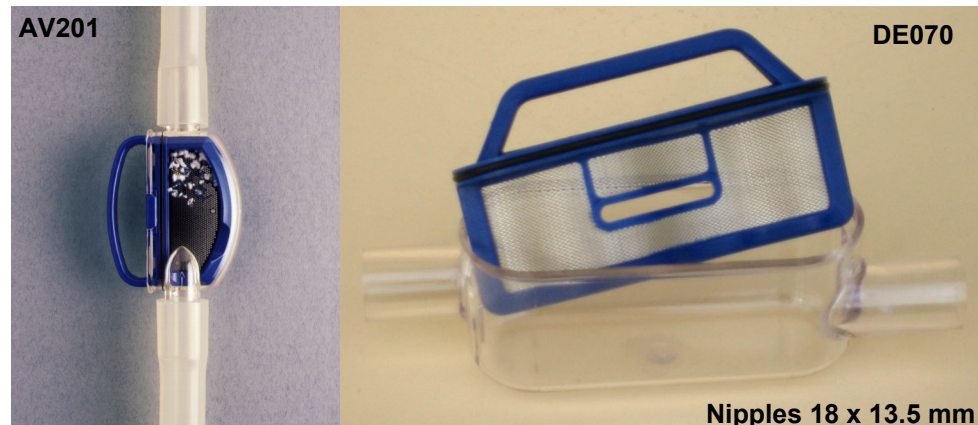
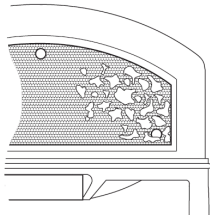
4

Repeated detection of a few clots or many clots on one occasion indicate mastitis requiring therapy under veterinary guidance.



5

Clinical mastitis at an advanced stage.



In Line Mastitis detectors

- Simple visual checks spots clinical mastitis every time
- Eliminates the need for fore milking
- No vacuum or peak flow rate drop
- Manufactured from quality, chemical resistant materials
- Cleans in place
- DE070 Curved stainless steel screen
- High visibility bodies for clear identification
- Positioned in long milk tube between the claw and the milk line with the milk flowing down in the direction of the arrow (Fig 1)
- The detector must be free draining and the flow arrow must be on the side facing the operator to give a clear view (fig 2)
- These systems are designed for use with vacuum systems not pressure
- Clinical mastitis is detected by the presence of clots on the down stream end of the screen (Fig 3)
- The screen is not designed to retain every clot and deposits will be seen along the length of the screen
- Simply remove the screen in between cows, wash under running water, reverse and replace it to remove any soiling
- The quantity of clots retained on the screen indicate the degree of abnormality and are described in Figs 3 - 5
- If the screen becomes fully blocked the units are designed to allow milk to pass without adverse effect on milk flow
- To wash at the end of milking, clean the screen as above; it must be in place for CIP cleaning.
- Do not brush or scrape the mesh, or use chemicals at a greater concentration than that recommended by the manufacturer