Fiji DAIRYNOTE 5.2a Animal Health – Mastitis Causes and Detection

Good Practice Guide for Fiji Dairy Farmers

What is mastitis?

Mastitis is an infection of the udder caused by **bacteria** entering the udder through the teat canal.

The highest risk for mastitis in a cow is at calving time because there is a lot of milk in the udder, the teat canal will be open more and she will be lying down more, allowing the bacteria in.

Some mastitis may also be caused by injury to the udder such as falling over in yards, being bunted by other cows or rough handling of the udder by milkers.

It is a major disease in the dairy industry causing major distress on the animal that affects production, milk quality and animal performance such as reproduction.

The three main things that cause mastitis are:

- **Poor milking management and hygiene** – ensure milking utensils and plant are kept clean and sanitised and that personal hygiene is observed at all times. Clean hands between cows, clean clothes and footwear.
- **Milking machine faults** – ensure your milking machine is tested at least once every year, checking vacuum and pulsation. Replace teat cup liners at least once every year.
- **Poor teat condition** – ensure teats are always in good condition. Avoid over or under milking, use a good teat spray to keep teats soft and treat any injuries promptly. Ensure good application and removal of cups – break the vacuum and wait a couple of seconds before removing the cups = break and wait. When hand milking, use the whole hand method.

There are two types of mastitis.

1. Clinical mastitis that you can see; and
2. Sub clinical mastitis cannot be seen but can develop into clinical mastitis.

Only treat a cow with antibiotics if it is a clinical case. Treating sub-clinical mastitis with antibiotics is uneconomic and may lead to antibiotic resistance.

Clinical mastitis

Detection

Early detection is the key to controlling clinical mastitis. An undetected case will spread mastitis to other cows and when it is detected will be harder to cure. The easiest way to find mastitis is at milking time. Detection in hand milking herds is easier than those milked by machine, but a good routine as outlined below and constant monitoring will allow for easier detection.

FDIDI would like to acknowledge New Zealand company QCONZ and consultant Mel Eden for supplying some of the information and images contained in the DairyNote series.

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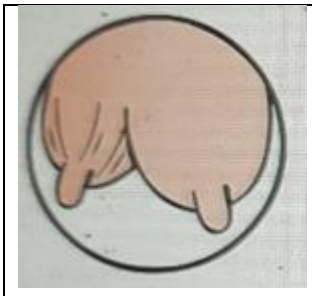
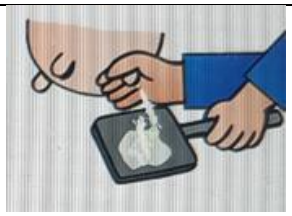
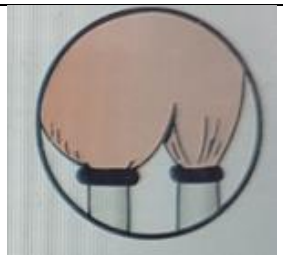
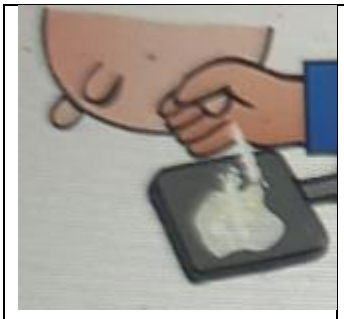
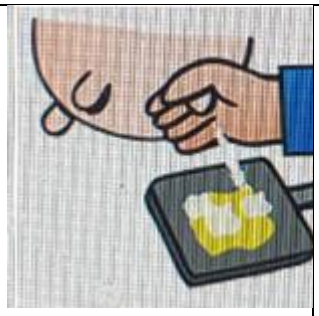
			
1. Look	**2. Feel**	**3. Strip**	**4. Look again**
Look for swollen udder, one quarter compared to the others. Cow stomping or kicking prior to milking.	Feel for heat or coldness compared to other quarters or signs of pain when touched.	Strip milk onto a dark surface. Look for clots or discoloration (yellow, clear). Good milk should be white, with even consistency.	Look again once milking has finished. Swollen udder, quarter not milking out compared to the others. Cow stomping or kicking.

When stripping cows to detect mastitis, we are looking any changes in the colour or texture of the milk as outlined below.

Normal milk will look nice and white and not have any lumps in it.

			
Clots	**Discoloration**	**Clear**	**Flecks**
Look for stringy bits or lumps in the milk. It may be hard to squeeze the milk out.	Look for any discoloration usually yellow or brown. May look like pus.	Look for watery milk.	Similar to clots but will be very hard to detect

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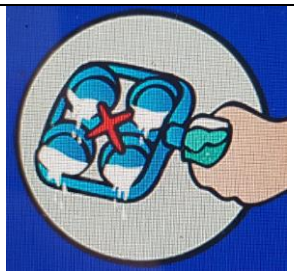
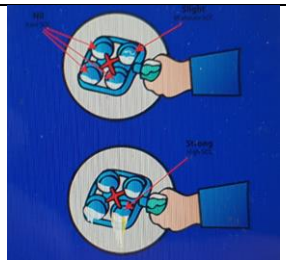
Sub-clinical mastitis

Sub clinical mastitis, which you can't see by the eye, requires an on-farm test, using a Rapid Mastitis Test (RMT – see below), or laboratory test to detect. The test measures the white blood cells in the milk, which are referred to as Somatic Cell Counts (SCC). A high level of SCC indicates a high level of infection. White blood cells are the body's defence against infection and rush to the source of infection as required.

Using RMT regularly (once/week) will allow you to measure the infection level in your herd as a means of monitoring the effectiveness of your milking procedures. It will also allow you to detect clinical cases that may have been missed during the normal milking routine. The steps to conduct a RMT are outlined below.

			
1. Discard	**2. Strip**	**3. Pour**	**4. Add**
Discard the first 1-2 strips and look for clots.	Strip next 1-2 squirts into separate wells of the paddle. Remember which quarter of the cow matches with the well on the paddle.	Pour off excess milk down to the line in the bottom of the well, leaving roughly equal amounts of milk in each well.	Add reagent, about the same amount as the milk.
			
5. Swirl and Look	**6. Check**	**7. Tip**	**8. Rinse**
Swirl the mixture in a circular motion for 10-20 seconds.	Check for a reaction look for white of egg or snot-like gel, the higher the SCC the thicker the texture.	Tip out slowly and recheck reaction. Mark and record cows with positive test and monitor over 2-3 days.to see if a clinical case arises.	Rinse the paddle and clean your hands before moving to the next cow.

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