

Bactoproof™

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MASTITIS TEST

A Revolutionary New Testing Method For Mastitis

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Mastitis is one of the most significant health and welfare problems in UK dairy herds. The full economic cost of mastitis is difficult to assess on either an individual cow or herd basis due to the multiple and complex losses involved but costs include lost milk, increased labour on farm, treatment cost, decreased fertility and increased culling. Mastitis also has a significant effect on milk quality and an EU limit of 400 000 cells/ml is imposed for milk destined for the liquid market. Purchasers often apply price penalties for somatic cell counts significantly below this level.

Bactoproof™ is a new laboratory method to rapidly and accurately identify the cause of mastitis. It uses quantitative real time PCR to identify the bacteria involved. It has significant advantages over the existing method of identifying the cause of mastitis by culture.

Speed:

- 24-hour cycle from collection to reporting via text or web compared to a typical 4 days for conventional culture.

Accuracy:

- Precise identification of over 99% of mastitis pathogens and the only resistance gene of significance in antibiotic treatment selection.
- Yields results in many samples that would show 'no growth' in conventional culture.
- Test results reflect situation at sampling not after minor contaminants have grown in transit.
- Quantitative detection of pathogens including mixed infections, more information from one test.

Identifies in a single test bacteria responsible for >99% of all clinical and subclinical mastitis cases

- *Staphylococcus aureus*
- *Coagulase negative staphylococci* (all major mastitis species)
- *Streptococcus agalactiae*
- *Streptococcus dysgalactiae*
- *Streptococcus uberis*
- *Escherichia coli*
- *Corynebacterium bovis*
- *Enterococcus faecalis* and *faecium*
- *Klebsiella pneumoniae* and *oxytoca*
- *Serratia marcescens*
- *Arcanobacterium pyogenes* and *Peptostreptococcus indolicus*
- Beta-lactamase penicillin resistance gene

Bacterial culture vs PCR in mastitis diagnostics

Bacterial culture	Bactoproof™ PCR Assay
48-72 hours in lab	4-5 hours in lab
25-40% of no-growth cases	detects growth-inhibited and dead bacteria -significantly less (>40% less) 'no growth' results
user experience may affect reliability	objective results for all bacteria -high accuracy can be reached in all laboratories
mainly qualitative	qualitative and quantitative -can be used for hygiene monitoring and bulk tank milk testing
unreliable during antibiotic treatment	not affected by antimicrobials -can be used for following and studying treatment efficacy -reliable for repeated testing even if antibiotics have been/are being used
prone to error due to bacterial growth during sample transportation	bronopol preserved milk -eliminates potential error

Bactoproof Results Reflect Situation at Sampling

- In conventional mastitis testing, samples are often transported to the laboratory without any form of refrigeration
- This may result in bacterial growth during sample transportation
- Bactoproof tests a sample with bronopol that reflects the situation at sampling

Bactoproof puts the Farmer in control

- Ready to use on dairy shelf when mastitis identified.
- Simple collection and dispatch, no need to keep sample cold.
- Result available at a convenient time to farmer via internet or SMS.
- Farmer makes decision to test and receives result in 24 hours: can then discuss treatment and control with vet.
- Easy to understand results, no confusing jargon.

Summary

Bactoproof™ is a significant advance in mastitis diagnosis. Accurate and speedy diagnosis is the 1st step to effective management and treatment of any infectious disease. Use of this new test will reduce the time to effective evidence-based treatment, and hence damage to udder as well as reducing wasted milk. This test should be of significant benefit in any mastitis control programme.



Simple sample collection



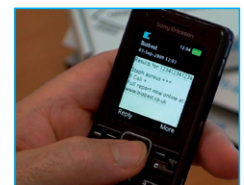
Convenient ready to use collection kit



Samples received at the laboratory and tracked by the unique Barcode.



Testing is completed on the day of receipt.



Results available same day after 18:00 online or by text.