

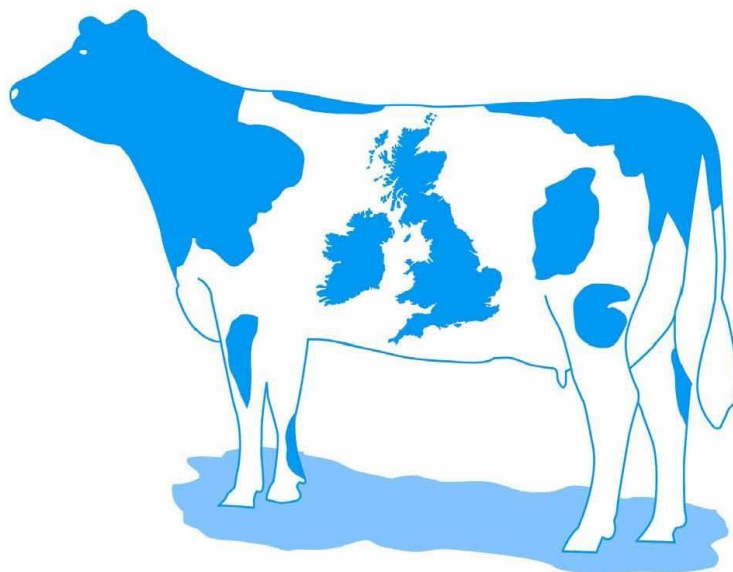
**Bactoproof™ Test Interpretation Guidelines**

Bactoproof™ provides results for 11 key mastitis pathogens and resistance for penicillin. For each bacterium the results are reported on a simple scale according to the number of bacteria detected. As testing is performed on preserved samples bacterial overgrowth in transit does not influence results and multiple pathogens can be reliably detected.

Result – bacterial detection	Interpretation
-	Negative, not detected
+	Positive, low numbers
++	Positive, moderate numbers
+++	Positive, high numbers

In addition resistance of the bacteria to penicillin is recorded on a simple +/- basis.

Result – penicillin resistance	Interpretation
+, ++, +++	Resistant to unpotentiated penicillins, consider other antibiotics for treatment
-	Susceptible to penicillin and related antibiotics; suitable for use in treatment.



## **Summary Advice for mastitis treatment and control**

Bactproof results should be used in conjunction with advice from your veterinary practice to identify possible management changes that could contribute towards control. Mastitis pathogens can be divided into those that are predominantly environmental and those that are considered contagious. However, this division is not absolute and all areas of the farm should be assessed as part of a thorough review of mastitis control. No one treatment or control programme can be recommended on the basis of test results alone.

### **Environmental pathogens**

Currently *Strep. uberis* and *E. coli* are considered to be the most important. *Enterococcus* spp., *Serratia marcescens*, *Arcanobacterium pyogenes*, and *Klebsiella* spp. are also generally included in this group. These pathogens exist in reservoirs in a herd's environment – attention should be paid to improvement of bedding, pasture management and dry cow procedures. Although considered to be primarily environmental, some spread from cow-to-cow via milking equipment may occur. *A. pyogenes*, a cause of summer mastitis, is often spread by flies.

### **Contagious pathogens**

This group of pathogens are most often spread via milking equipment and where they predominate particular attention should be given to parlour management. Infections can be reduced by proper milking technique and the use of a well designed and correctly maintained milking system. Infected cows may be isolated or identified in a manner that will allow them to be managed as a distinct group at milking time. They can be milked last or with a designated milking unit. Included in this group are *Staph. aureus*, other *Staph. spp.* *Strep. agalactiae*, *Strep. dysgalactiae* and *Corynebacterium bovis*. *Strep. dysgalactiae* is particularly associated with damaged udder skin and the use of a teat dip with good moisturising effect may help to prevent this infection.

### **Treatment**

Choice of treatment for active cases and dry cow therapy must take into account a number of different parameters – pathogen(s) and penicillin sensitivity, cost, convenience, and product recommendations in data sheet. To avoid the unnecessary use of broad spectrum antibiotics, the penicillin group of antibiotics should be considered a suitable treatment for clinical mastitis where test results indicate it is likely to be effective:

- Staph infections
- Strep infections
- *pyogenes* (infection is typically severe and culling may be the only option)

**Where there is evidence of penicillin resistance ( $\beta$ -lactamase +ve) there are a number of possible treatments and advice on these should be sought from your vet.**

Acute *E. coli* infections may quickly become severe and can on occasions be fatal – prompt treatment of these cases is required. Enrofloxacin or amoxicillin are often 1<sup>st</sup> considered for *E. coli* mastitis but again there is a wide variety of other possible treatments. Spontaneous cure may occur with *E. coli* infections.

*Serratia marcescens* is resistant to most antibiotics. Treatment is often thought to have poor cure rates and is therefore not always recommended. There may be some initial clinical improvement but it is likely to be only temporary; many cases will eventually cure spontaneously. Similarly *Klebsiella* mastitis rarely responds to treatment with antibiotics. Prevention is the key to control.

*Corynebacterium bovis* may be the only organism present in milk samples from cows with clinical mastitis but is thought rarely to be the specific cause. Dry cow therapy is usually very effective in eliminating this infection.

Some authors suggest that not all cases of mastitis require drug therapy and it is true that several will self cure. The merits of treatment of high cell count cows without clinical signs have not been proven.

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