

HOW TO READ CULTURE PLATES

The purpose of performing on farm culturing is not only to grow bacteria but to ensure that our diagnosis is correct so that we can determine if antibiotic treatment will be helpful.

FIRST STEP: ASSESSING BACTERIAL GROWTH

Bacterial growth takes a minimum of 24 hours in incubation before the plate can be observed. After 24 hours, the first question to ask is: **Is there any growth on the plates?**

No Growth

There are several reasons this happens. First, the quarter may not be infected or the infection may already have been cleared by the body's immune system. Also, improper handling or lab errors may cause no growth. Lastly, fastidious organisms that require special media, such as Mycoplasma, may cause infection but will not grow on standard culture plates.

SECOND STEP: INTERPRETATION OF BACTERIAL GROWTH

If there is growth on the plate, the second question to ask is: **How many different types of bacterial colonies are there?**

Contaminated

If there are more than 2 types of colonies, the plate has been contaminated. When this happens, the quarter may be resampled using proper collection technique and cultured again.

If there are 1 to 2 colony types, the number of 'colony forming units' should be evaluated. A 'cfu' is a small circular, often raised growth of bacteria.

Non-significant Growth

Fewer than 3-5 cfu's per colony type signifies non-significant growth. This means that the bacteria present on the culture plate are too few in number to be the cause of mastitis.

True Infection

When there are 3-5 or more cfu's per colony type, there is a true infection, and identification can be performed. Sometimes there may be a true infection that has a contaminant. As long as the contaminant has non-significant growth, you can still identify the true infection.

