

# Bacteria Cultures



## Benefits of Culturing

- Identify mastitis causing bacteria
- Properly treat infections with most effective antibiotics
- Locate contamination sources
- Track progress and see improvements

The first step in all culturing is obtaining a good sample. Next, the sample needs to be stored correctly and transported rapidly to the laboratory for culturing.

## Bulk Tank Milk Samples

Bulk tank cultures screen for the presence of mastitis-causing bacteria infecting the herd and quantify a dairy's mastitis problem. This is an excellent first step for any herd implementing a mastitis control program. We encourage producers to submit bulk tank cultures comprised of milk samples taken over three days.

- Agitate the bulk tank for at least 5 minutes to ensure the milk is well mixed.
- Collect the milk from the top of the tank using a sterile dipper. Do not sample through the spigot or use a contaminated dipper or cup to collect the milk. Use the milking gloves provided to collect a sterile sample.
- Collect one sample daily over 3 to 5 days and freeze the sample as soon as possible.
- Complete the sample submission form and include it with your samples. Forms are included in the sample kit, can be found online at [Marshfield.agsource.com](http://Marshfield.agsource.com) and click on "Forms and Instructions" or are available by calling AgSource Laboratories in Marshfield, Wis.

- Send the frozen samples to the laboratory in the pre-paid mailer early in the week. The sample could also be sent on the van route service.

## Individual Cow Milk Samples

Strict aseptic procedures must be used when collecting milk samples to prevent contamination with bacteria present on the cow's flanks, udder, teats or the sampler's hands. Be sure to use the milking gloves and alcohol pads provided with the kit. Do not culture cows treated with antibiotics within the past 14 days.



- When taking the culture, pre-strip the quarter to be cultured.
- Clean the teat end carefully with the provided alcohol swab. If taking a sample from all 4 quarters make sure you start by cleaning the teats furthest from you and cleaning the ones closest to you last. Then when taking the sample begin stripping the teats closest to you first and the ones furthest away last. This helps avoid recontamination of the clean teats when reaching for the teats located further from you.
- To prevent dirt from falling into the sample, hold the enclosed sample vial at a 45 degree angle while squirting milk into the vial.
- Label sample vial with animal ID.

*(Over, please)*



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- Freeze the sample immediately after collection.
- Complete the sample submission form and include it with your sample. Forms are included in the sample kit, can be found online at [Marshfield.agsource.com](http://Marshfield.agsource.com) and click on "Forms and Instructions" or are available by calling AgSource Laboratories in Marshfield, Wis.
- Mail the frozen sample to the laboratory in the pre-paid mailer towards the beginning of the week. The sample could also be sent on the van route service.



## Bedding Samples

Give Your Girls a Clean Place to Sleep! While their environment may look clean, harmful bacteria may be lurking in the bedding. In order to establish a comparative value, start by taking samples from new bedding first. Bedding can become contaminated overtime or depending on your choice of bedding material, it can already be highly contaminated! Next, sample from an area where udders have contact with the bedding. Take a random sample of a cup-sized scoop from several areas. Mix together all the scoops. Take one final scoop – two cups total – to submit to the laboratory.

**Culture Count** – This culture measures the number of bacterial cells in the bedding and helps producers determine how often bedding should be changed. Starting with fresh bedding, producers can sample bedding at various intervals throughout the day or throughout several days. The lab determines bacteria counts on the samples, and when those counts exceed 1,000,000 cfu/g, the bedding should be changed.

**Culture Identification**– Bedding samples can be submitted to the lab and are cultured to identify the bacteria present that may cause mastitis in the herd. This culture is especially valuable to herds with environmental mastitis problems. Typical bacteria identified include *Klebsiella*, *Coliforms*, *E. coli*, *Staphylococcus*, *Streptococcus* or *Bacillus* are the types of bacteria that are identified on the bedding cultures. Mycoplasma species can be included for an additional cost.

## Sensitivity Testing

After mastitis-causing bacteria are isolated, AgSource offers sensitivity tests to determine resistance patterns for eight different antibiotics. While lab results do not always have the same effectiveness in the cow's udder, if a pathogen is resistant to an antibiotic in the lab, the producer can avoid using this antibiotic, and instead, choose one that is more likely to be successful in treating the infection. Sensitivity testing is done in four steps:

- 1) A cow culture test is set up
- 2) The bacteria is isolated
- 3) The bacteria is subjected to eight various types of antibiotics
- 4) A determination is made as to the susceptibility and resistance of the bacteria to each antibiotic



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