



Study conducted by the University of Georgia and the National University of LaPampa in Argentina.



UNIVERSITY OF GEORGIA



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## An Inline Sampling System to Detect Foodborne Pathogens in Milk

*Determining the effectiveness of an inline sampling device to detect bacteria either coming from a group of cows suffering from mastitis or from the milking line potentially contaminated with environmental bacteria.*

### CHALLENGE

Is the QualiTru sampling system effective in determining whether high bacteria counts found in a milk bulk tank sample (> 30,000 CFU) are the result of poor herd health or inline contamination? This question was the subject of two case studies completed at the University of Georgia and the National University of LaPampa in Argentina.

### SOLUTION

**In case 1**, individual milk samples from the four quarters were collected from 16 cows on a farm in Georgia, USA and compared to the QualiTru inline representative samples collected before the bulk tank. Samples were cultured for aerobic bacterial isolation and mycoplasma using standard approved methodologies.

**In case 2**, on a large dairy farm in the pampas of Argentina that had a history of high somatic cell counts (>350,000 cells/ml) and high incidence of clinical cases of mastitis, seven different groups of 170 cows were milked according to days in milk and milk production. Sampling was performed the same way as described in Case 1.

### RESULTS

**In Case 1**, the inline sampling device was able to detect certain segments of the inline contaminated with environmental bacteria, but not coming from the cows. **In Case 2**, 19 out of 25 pooled inline samples were in agreement with at least one of the individual sampled cows shedding either Staphylococcus or Streptococcus spp. or both, which accounted for 76% accordance between both methods.

In both cases, QualiTru's aseptic sampling system was able to help identify foodborne pathogens and is an effective tool to screen the efficacy of cleaning and disinfecting mechanisms of the milk lines to identify and control the potential foodborne pathogens that are collected in the bulk tank. Regular monitoring of the microbial quality of milk through an inline sampling device, such as QualiTru's aseptic sampling system, is recommended for groups of cows within the dairy herd to detect potential mastitis-causing microorganisms.

### BENEFITS

QualiTru's aseptic sampling system can be set up at any connection of the milking line from the parlour to the bulk tank to obtain a representative milk sample from a group of cows or the entire milking herd. Aseptic inline sampling may be particularly attractive to dairy farms with larger herds because it allows producers to monitor the performance of several different groups of cows within the herd. In addition, the system could be used to monitor any potential contamination from different sections of the milk line.

*“QualiTru aseptic, representative sampling system is a reliable method to detect individual cows shedding mastitis-causing organisms and determining the source of bacteria in a bulk tank.”*



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A milk-line sampling system to detect foodborne pathogens

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