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**Contact: Brittany Morstatter**  
**ARPAS@assochoq.org**

## **Infrared measurement of milk temperature may detect mastitis in dairy cows**

**New research in *Applied Animal Science* suggests a novel method for noninvasive subclinical mastitis screening.**

Philadelphia, PA, June 8, 2020—Mastitis is a common disease in dairy cattle that negatively affects animal welfare and herd profitability. Early detection and treatment can mitigate the effects of mastitis, but subclinical mastitis is challenging to detect. Scientists from the University of Puerto Rico compared infrared images and bacteriological testing results from 100 cows in 9 herds in Puerto Rico to determine whether infrared measurement of milk temperature could be used as a mastitis screening tool.

Screening tools for detection of subclinical mastitis are scarce or inaccessible in tropical dairy systems. Infrared thermography previously has been used to screen for mastitis by imaging the skin of the mammary gland; however, multiple images are needed to screen all quarters. In this study, an infrared camera was used to measure the temperatures of the short tubes of the milking machine claw, and milk samples taken from the corresponding quarters were subjected to bacteriological testing.

“This research article describes the use of infrared temperature monitoring in the short tube of the milking machine claw and its potential as a real-time, noninvasive tool to detect subclinical mastitis with or without active mammary infections in dairy cows,” said Dr. David K. Beede, editor-in-chief of *Applied Animal Science*. Author Dr. Jaime Curbelo-Rodriguez added, “With more sensitive infrared thermography cameras and sophisticated infrared thermography systems, the infrared temperature of each quarter can be collected in a single image by imaging the short milking tubes.”

The temperature was greater in short tubes for milk from quarters with mastitic pathogens present than from those without. Therefore, the use of infrared thermography, as a noninvasive and practical approach for detection of subclinical mastitis, could represent a valuable tool to discriminate mastitic quarters among healthy ones. Curbelo-Rodriguez noted, “Due to relatively large variation of infrared temperature of the short milking tubes, large numbers of observations (e.g., automated image collection and analysis) are needed to use this approach as a discriminatory mastitis tool.” Further research is needed to determine whether this method can be extrapolated to other milking times, stages of lactation, climatic conditions, and management strategies.

The research appears in the June issue of *Applied Animal Science*.

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## **NOTES FOR EDITORS**

“Short-milking-tube infrared temperature as a subclinical mastitis detection tool in tropical dairy farms,” by Marcela G. Marrero, Chris Rijos-Fernández, Yomar Vélez-Robles, Guillermo Ortiz-Colón, Héctor Sánchez-Rodríguez, Esbal Jiménez-Cabán, and Jaime Curbelo-Rodríguez (DOI: <https://doi.org/10.15232/aas.2019-01939>), *Applied Animal Science*, Volume 36, Issue 3 (June 2020), published by FASS Inc. and Elsevier Inc.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or [arpas@assoqh.org](mailto:arpas@assoqh.org) to obtain copies. To schedule an interview with the authors, please contact Dr. Jaime Curbelo-Rodríguez at [jaimee.curbelo@upr.edu](mailto:jaimee.curbelo@upr.edu).

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