Udder skin surface temperature variation pre- and post- milking in dairy cows as determined by infrared thermography

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The objectives of the study reported in this Research Communication were to compare the variation of hind quarter skin surface temperature pre- and post- milking in dairy cows and to determine the optimal time to capture images by infrared thermography for improving the sensitivity and specificity of mastitis detection in dairy cows. Hind quarter infrared images of 102 Holstein dairy cows were captured from the caudal view by an infrared camera pre-milking and post-milking. The udder skin surface temperature was measured with the help of the image processing software. No significant difference was found between the left and right quarter skin surface temperature pre- and post- milking. The hind quarter skin surface temperature pre-milking was not influenced by milk yield with a a rising trend along with the increase of milk yield. The left and right hind quarter skin surface temperature post-milking was higher than that pre-milking respectively, and were influenced by milk yield. In conclusion, infrared images of cow udders should be captured pre-milking to improve the sensitivity and specificity of IRT to detect mastitis in dairy cows.