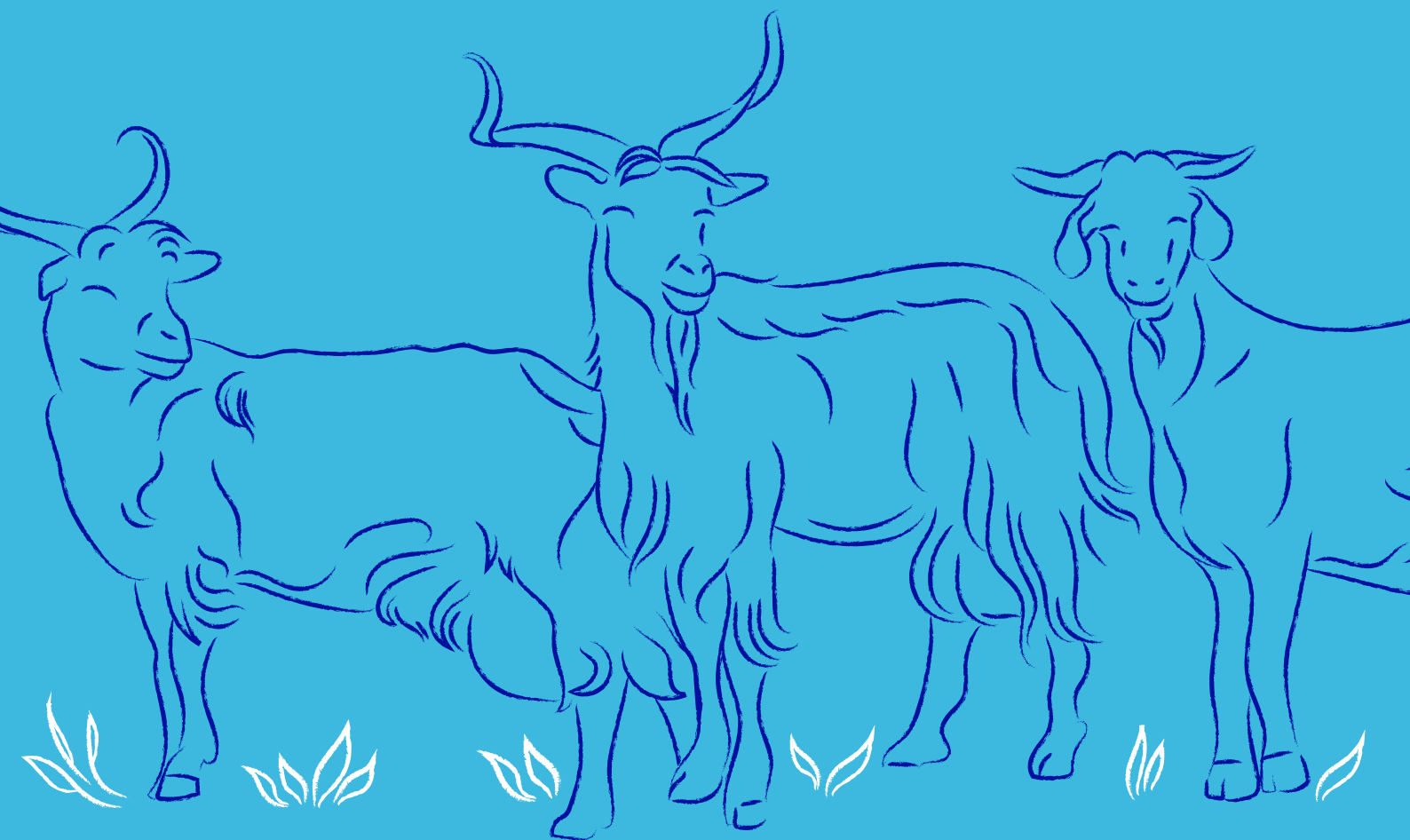


International Goat Association (IGA)

Regional Conference 2025



ISBN 978-84-120939-8-8

Editorial: INSTITUTO CANARIO DE INVESTIGACIONES AGRARIAS (ICIA).

Autor: Varios autores.

Editores: Alexandra Torres, Anastasio Arguello, Sergio Álvarez.

Congreso: International Goat Association (IGA). Regional Conference 2025 (España).

Número de edición: 1

Fecha de edición: 17/05/2025

País de Edición: España.

The suitability of infrared thermography to detect estrous in dairy goats

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KEY WORDS: ESTROUS, INFRARED THERMOGRAPHY, HEAT, REPRODUCTION.

This study aimed to assess the suitability of infrared thermography (IT) to detect estrous using vulvar temperature. Fourteen estrous synchronized Majorera dairy goats were used. Vulvar temperature was recorded using an IT camera (193-8700, RS PRO, Spain) and rectal temperature (RT) was measured using a digital thermometer at different timepoints throughout the estrous synchronization period (i.e., sponge insertion day (T0), 5 days after sponge insertion (T1), serum gonadotropin and prostaglandin injection day (T2), the day before estrous (T3), the day of the onset of estrous (T4) and the day after estrous (T5)). Data was analyzed using PROC ANOVA and the Pearson correlation coefficient was determined using the PROC CORR of SAS 9.4 software. The statistical significance was set as $p < 0.05$. Results showed increased vulvar temperature throughout the synchronization period ($p < 0.001$) and high correlation between RT and vulvar temperature the day of estrous exhibition (T4; $\rho = 0.840$, $p < 0.001$) and the next day (T5; $\rho = 0.710$, $p = 0.015$). In conclusion, the IT can be used to monitor changes in body temperature associated with the estrous cycle, especially in the urogenital area. Although this technique offers a promising approach to enhance reproductive management strategies, it should be combined with other tools to reduce the effect of confounding factors such as the ambient temperature.