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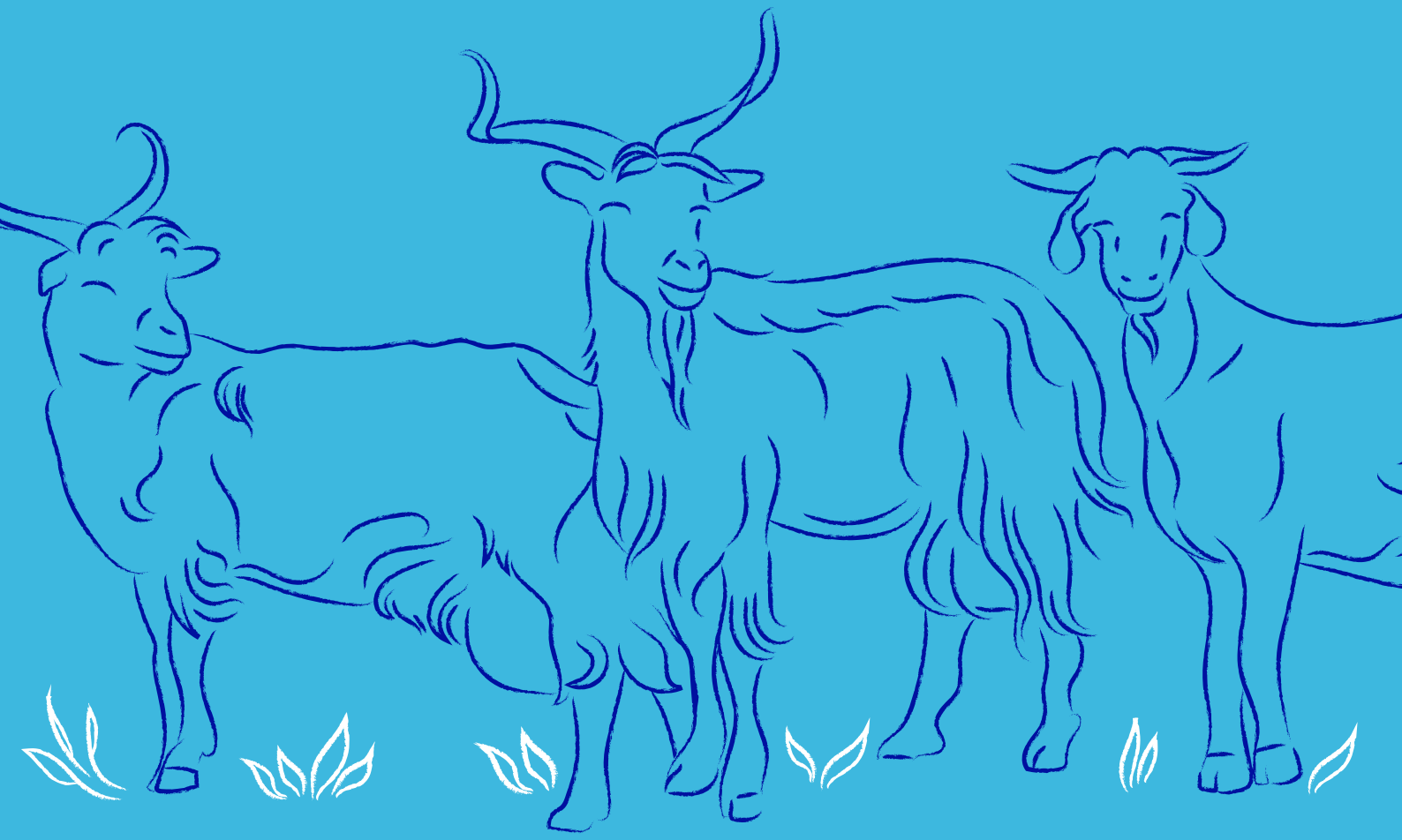
INSTITUTO CANARIO DE INVESTIGACIONES AGRARIAS

Gobierno de Canarias

Universidad de La Laguna

International Goat Association (IGA)

Regional Conference 2025



European Regional Conference on Goats 2025

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International Goat Association

ULPGC
Universidad de Las Palmas de Gran Canaria

Cabildo de Tenerife

Excmo. Ayuntamiento de San Cristóbal de La Laguna

veterinarios de Canarias

GMR Canarias

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.

Ozone as a Sanitizing Agent for Goat Colostrum: Microbiological and Immunological Impact

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Key words: Goat colostrum, ozone treatment, thermization, bacterial load, immunoglobulin G, passive immunity

Passive transfer of immunity via colostrum is essential for neonatal goat survival, but bacterial contamination poses health risks. This study evaluates the efficacy of ozonated sunflower oil (600 and 1200 mM/ml) compared to thermal treatment (56 °C, 60 min) in reducing bacterial load while preserving immunoglobulin G (IgG) concentrations. Colostrum samples (n= 15) from Majorera goats were divided into four groups: untreated (ST), thermized (PAST), ozonated at 600 mM/ml (O600), and 1200 mM/ml (O1200). Microbial analysis was performed on selective and non-selective media, while IgG levels were assessed via ELISA. Thermization significantly reduced total bacterial counts ($p < 0.01$), whereas ozonation showed only partial effectiveness (non statistical effects). Enterobacteria and Staphylococcus spp. were significantly lower in PAST compared to ST, O600, and O1200 ($p < 0.05$). IgG concentrations were similar in treated groups (PAST: 30.9 mg/ml, O600: 33.2 mg/ml, O1200: 31.3 mg/ml) but lower than ST (45.3 mg/ml, $p < 0.001$). These results suggest that while ozonation preserves IgG levels, it lacks sufficient bactericidal efficacy, making thermization the preferred method for colostrum sanitization. Further research should refine ozonation protocols for improved microbial control.