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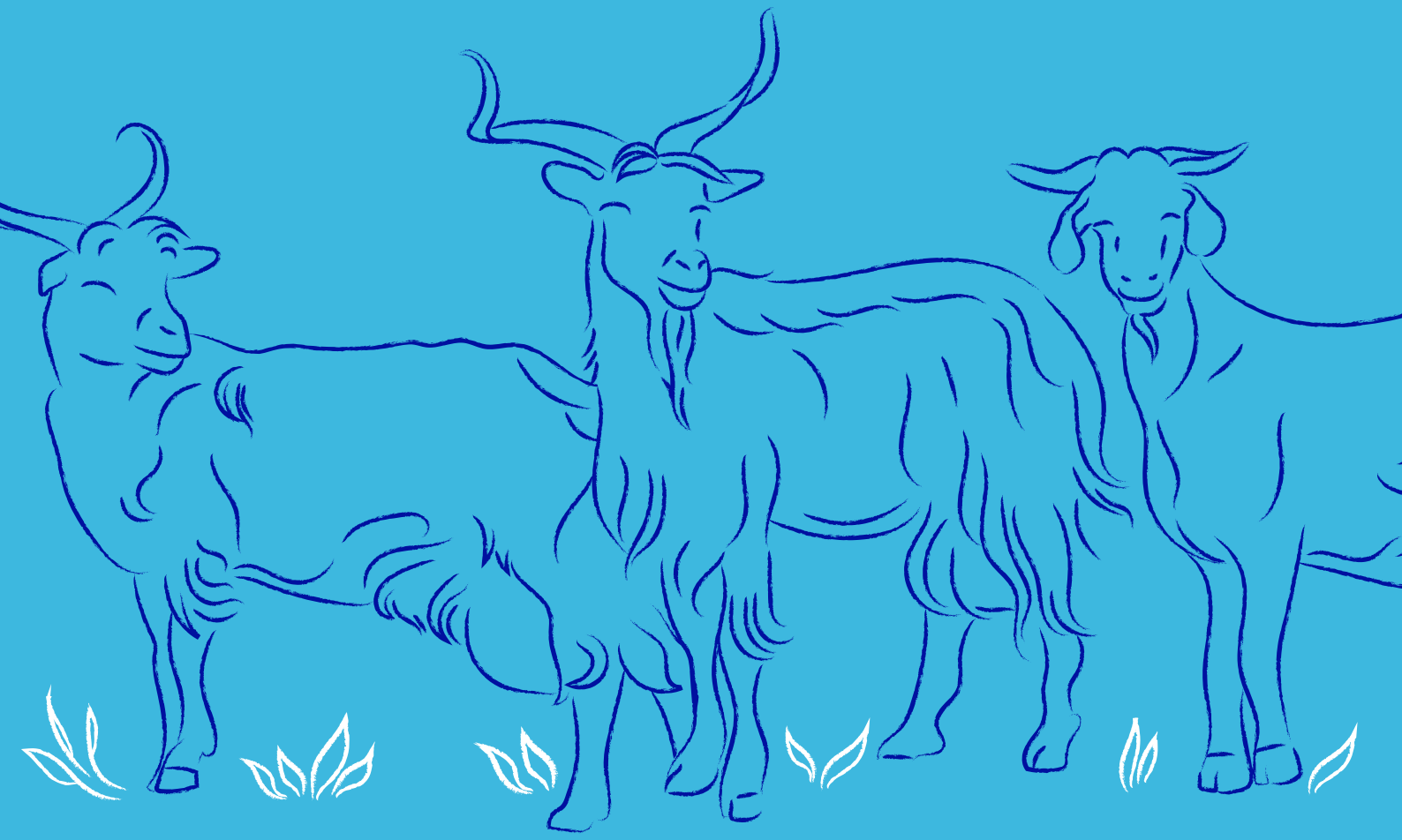

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Chlorine Dioxide as an Alternative Sanitization Method for Goat Colostrum

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Early intake of colostrum is essential for newborn goat kids to ensure the transfer of passive immunity, which is crucial to obtain protection against pathogens. To minimize the risk of pathogen transmission through colostrum sanitization treatments are needed. Heat treatments are widely used; however, it causes immunoglobulin G (IgG) reduction. This study approaches the efficacy of chlorine dioxide (ClO_2) at two different doses as an alternative to conventional sanitization methods. The objective was to assess the effect of ClO_2 on bacterial growth and (IgG) concentration in goat colostrum. To do that, 15 colostrum samples obtained from Majorera dairy goats were divided into four groups: untreated colostrum (control), colostrum heated at 56 °C for 1 hour, colostrum treated with chlorine dioxide at 400 g/l, and colostrum treated with ClO_2 at 800 g/l. The main bacterial groups and the IgG concentration were analysed. Heat treatment (56 °C for 1 hour) significantly reduced the bacterial population, while bacterial counts in untreated colostrum and colostrum treated with chlorine dioxide at either studied dose were similar. In addition, the IgG concentration was reduced in all treated samples compared to those untreated. The findings suggest that the addition of chlorine dioxide at 400 or 800 g/l to goat colostrum is ineffective in reducing bacterial populations or maintaining optimal IgG concentration.