

Title : Development of Functional Drinking Yoghurt from Goat's Milk

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## ABSTRACT

The range of goat milk-based products is currently restricted, despite an increasing consumer demand for functional foods. This study focused on the development of drinking yoghurt from goat's milk, enhanced with functional ingredients, and assessed the microbial content of the resulting products. The antimicrobial efficacy of the chosen ingredients (date syrup, cinnamon, rosemary, roselle, and lavender) was assessed against *B. cereus*, *S. aureus*, *E. coli*, and *Salmonella* sp. through the disc diffusion method. Their effects on yoghurt starter cultures, specifically *Streptococcus thermophilus*, *Lactobacillus delbrueckii* ssp. *bulgaricus*, and *Bifidobacterium animalis* ssp. *lactis*, were also evaluated. The antioxidant activity of these ingredients was evaluated through the ABTS assay. Antimicrobial and antioxidant ingredients were integrated into the drinking yoghurt, and the final products were evaluated for sensory attributes and microbial characteristics. The findings demonstrated that date syrup, cinnamon, and roselle extract effectively inhibited pathogenic bacteria, exhibiting inhibition zones between 6.7 and 10.2 mm, whereas none of the ingredients affected yoghurt starters. The test ingredients demonstrated a 50% inhibition of free radicals at concentrations between 7.47 and 41.04 mg/mL. Two formulations of drinking yoghurt were created: one incorporating date syrup and cinnamon, and the other featuring rosemary, roselle, and honey. The average preference scores were 5.56/10 and 8.06/10, respectively. The total bacterial count, including lactic acid bacteria, in the products was 8.9 log CFU/g.