Title: Rice Coconut Yogurt: Insights Into Physicochemical Properties, Microbial Stability, and Consumer Acceptance as a Plant-Based Alternative

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Abastact: The rising consumer demand for plant-based and non-dairy yogurts prompted this investigation into the potential of incorporating coconut milk and rice milk into yogurt production. Yogurt samples were prepared by blending skim milk powder (SMP) with rice milk, coconut milk, cow milk, and a 50:50 rice-coconut milk mixture, alongside a control made from 100% cow milk. Comprehensive analyses evaluated physicochemical properties-pH, acidity, water-holding capacity, syneresis, viscosity, total soluble solids, moisture content, total solids, and color-as well as microbiological counts and sensory attributes. Results revealed that coconut milk yogurt had the lowest pH (4.10 ± 0.021) and highest acidity (1097.67 ± 7.51 mg/100 mL), while adding SMP to cow milk increased pH to 5.02 ± 0.021 and reduced acidity. Coconut milk yogurt also exhibited superior color, water-holding capacity (57.46% ± 0.174%), and viscosity, whereas rice milk yogurt showed higher syneresis (19.43% ± 0.404%) but acceptable microbiological and sensory profiles. Notably, rice milk yogurt gained the highest consumer acceptability, surpassing cow and coconut milk variants. Overall, the findings suggest that coconut milk yogurt is a promising dairy alternative, particularly for individuals with lactose intolerance and dairy allergies, with rice milk yogurt also representing a viable, nutritionally beneficial option.

Keywords: bacterial count; coconut milk; microstructure; plant-based alternative; rice milk; sensory; viscosity; water holding capacity.

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