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Innovative Ragi Mayonnaise Enriched with Ashwagandha and Moringa

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ABSTRACT

Introduction: Mayonnaise, a popular emulsified condiment with 70-80% oil is valued for its creaminess and flavour but raises health concerns due to high fat, low protein, and raw egg yolks, leading to microbial risks and reduced shelf life. Consumer demand for healthier, allergen-free alternatives has driven efforts to innovate. This study develops ragi-based mayonnaise enriched with avocado, ashwagandha, and moringa. These functional ingredients, rich in phytochemicals, offer a nutritious, long-lasting, and plant-based option that aligns with dietary trends and safety requirements.

Aim: Develop ragi-based mayonnaise and evaluate its sensory, nutritional, and antioxidant properties, and shelf life.

Methodology: Phase 1: Ragi Milk Extraction: Select and clean high-quality ragi seeds. Soak in distilled water (1:3) for 8-12 hours. Grind soaked seeds with water (1:4) using a blender to form a slurry. Strain to extract milk. Pasteurise at 72°C for 15 seconds, then cool below 10°C. Phase 2: Preparation of Mayonnaise: Blend peeled, deseeded avocados to a smooth pulp. Hydrate tragacanth gum (1:10 ratio) at 60°C for 1 hour. Combine avocado pulp, ragi milk, vinegar, spices, and gum, homogenise at 2,000 rpm, gradually add oil, and evaluate sensory and nutritional properties.

Results and Conclusion: The developed mayonnaise displayed excellent sensory qualities, including creaminess, flavour, and texture, with high antioxidant activity from moringa and ashwagandha. Proximate analysis revealed reduced fat, enhanced protein, and increased dietary fibre due to ragi and avocado. The product, with a shelf life of over 40 days, offers a safe, preservative-free alternative.

Keywords: Functional food, Plant based, Phytochemicals

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