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FINAL YEAR PROJECT 2 - RESEARCH PROJECT

EXTRACTION OF FLAVONOIDS FROM MANGO PEEL (*Mangifera indica*) FOR DEODORANT ROLL-ON

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JULY 2025

ABSTRACT

EXTRACTION OF FLAVONOIDS FROM MANGO PEEL (*Mangifera indica*) FOR DEODORANT ROLL-ON

Commercial deodorants have been associated with health concerns, including a potential increased risk of cancer due to synthetic ingredients like aluminium salts and paraben. This has led to increasing interest among consumers in natural ingredients derived from plants. Mango peel (*Mangifera indica*) is a byproduct that is often discarded as waste with abundant flavonoids. These bioactive compounds offer antioxidants, antimicrobial and anti-inflammatory properties that are suitable for incorporation into cosmetic applications. This research aimed to extract flavonoids from mango peel that act as an active ingredient in a deodorant roll-on formulation. The extraction was conducted using Soxhlet extraction with 95% ethanol as a solvent. Functional groups present in the extract were identified using FTIR spectroscopy. Antioxidant activity was evaluated through Total Flavonoid Content (TFC), Total Phenolic Content (TPC) and DPPH radical scavenging assay. Deodorant formulations with and without mango peel extract were tested for pH, colour, stability and moisture content over a three-week period. FTIR analysis confirmed the presence of functional groups hydroxyl and aromatic ring indicating flavonoids. The TFC and TPC were recorded at 74.8 ± 0.09 mg QE/g and 56.50 ± 0.18 mg GAE/g, respectively. Additionally, the extract showed strong antioxidant properties with %RSA values between 71.94% to 89.18%. The deodorant with extract showed stable pH (5.34 – 5.41), colour and no phase separation. Moisture content was 24.6% with acceptance range for cosmetic standard. This finding shows mango peel extract is a functional antioxidant suitable for use in deodorant formulations. It is eco-friendly and sustainable nature, support its use in deodorant formulation although further optimization is recommended.

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