

Formulation and Evaluation of a Phytochemical-Enriched Shampoo for Hair Therapy

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Abstract: *The use of herbal and phytochemical-based formulations in hair care has seen a significant rise due to their minimal side effects and therapeutic properties. This study focuses on the formulation and evaluation of a phytochemical-enriched shampoo using plant-based ingredients known for their hair-nourishing, cleansing, and therapeutic potential. The selected plants include Hibiscus rosa-sinensis, Aloe vera, Sapindus mukorossi (Reetha), and Azadirachta indica (Neem), which are traditionally known for promoting hair growth, preventing dandruff, and maintaining scalp health.*

The shampoo was formulated using a cold infusion method and aqueous extracts of these plants. Physicochemical parameters such as pH, viscosity, foaming index, dirt dispersion, solid content, and surface tension were evaluated to assess the quality and efficacy of the shampoo. Additional sensory attributes such as color, fragrance, and smoothness were also observed.

The results revealed that the formulated shampoo exhibited ideal pH balance for scalp application, good cleansing ability, acceptable foaming properties, and stability. The presence of natural saponins in Reetha contributed to cleansing action, while Aloe vera and Hibiscus improved moisturization and conditioning. Neem extract added antimicrobial benefits, making the shampoo effective for dandruff and scalp irritation.

This phytochemical-enriched shampoo offers a safer alternative to synthetic shampoos, with promising therapeutic benefits. The study concludes that the incorporation of traditional herbal ingredients into modern formulations can yield effective, stable, and consumer-acceptable products for hair therapy.

Keywords: Phytochemicals, Herbal Shampoo, Hair Therapy, Ocimum sanctum, Terminalia Arjuna, Cymbopogon citratus, Natural Formulation, Evaluation

