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Preparation and bioactivity of Indigenous formula used as hair care oil

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Haircare mainly affects the appearance of an individual. Hair dyes are personal care products used to regain or change hair color. Even though natural products were used in ancient times, synthetic products are now highly used. However, synthetic products include artificial & harmful chemicals that affect human health upon long-term usage. Therefore, practicing natural products is important for long-term usage. In this study, a hair care oil to use as a hair dye was formulated and prepared using natural ingredients such as Sesame oil, *Eclipta prostrata, Barleria prionitis L, Gmelina asiatica L, Triphala, Pandanus tectorius, Gmelina arborea* and Iron Powder with reference to an Ayurveda book *(Thalpathe Piliyam),* here a decoction was prepared using plant materials mentioned above and was mixed with juice of *Eclipta prostrata, sesame oil* and prepared final oil of 2410 mL volume and kept for one month and after one month, oil was evaluated on antioxidant in DPPH method (IC50 value 151 - 200 ppm), anti-inflammatory in HRBC membrane stabilization method (IC50 value 249.5 - 1440 ppm) and anti-fungal properties and organoleptic properties such as color (Blue black), appearance (thick emulsion), odor (characteristic), sedimentation (none); pH value (6.80 - 6.90 ± 0.02), moisture 36.50 - 38.50 ± 0.05 (105°C), refractive index (1.465 – 1.467 (25°C), skin sensitivity(no impacts), dyeing effect, stability under physical properties; chemical properties such as acid value (2.01 - 2.05), iodine value (62.58 - 62.68), peroxide value (5.05 - 5.58) and heavy metal content. Accordingly, the above analysis confirmed the antioxidant & anti-inflammatory properties and ensured the other quality parameters of the product as well. As a result, it was concluded that this product is applicable for human hair for trials and development. However, further research is essential to develop into a commercial application.

Keywords: Antioxidant, Ayurveda, Hair dye, Human hair, Natural product

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