

## Development of a Fairness Topical Formulation from Extract of Stem Bark from *Mangifera* Species

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Among the phytochemicals identified in previous *M. indica* and *M. zeylanica* contain Vitamin B3, Polyphenols, Flavonoids, Tannins, Phenols, Vitamin C, Saponins, which give the fairness activity.

The objective of this study is to develop and evaluate a fairness topical formulation using herbal extracts of *M. indica* and *M. zeylanica* and to determine its' antioxidant activity and Sun Protection Factor (SPF) value.

Dried and powdered stem barks were extracted with water and aqueous methanol (50% methanol) solution separately. The extracts and prepared formulations were physically evaluated by recording stability over 6 weeks at room temperature. The in vitro SPF of extracts and cream formulations were determined by UV spectrophotometric method. 2,2-Diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay was done for determining antioxidant activity.

The aqueous cream BP was modified by using 25(oil):75(aqueous) phases. SPF of Mee amba and Atamba aqueous extracts (0.2g/ml) were recorded as 3.91 and 2.71 respectively. SPF of Mee amba and Atamba aqueous methanol extracts (0.2g/ml) were recorded as 7.39, 5.75 respectively. SPF of cream formulations with the addition of aqueous extract of Mee Amba and Atamba were recorded as 4.18 and 2.91 respectively. SPF of cream formulation with addition of aqueous methanol extract of Mee amba and Atamba (0.2g/ml) were recorded as 4.28 and 3.84. The EC50 values of Ascorbic acid, Atamba, Mee amba was shown as 28.18, 47.86, 37.58 µg/l. The study concluded that aqueous methanol extract of stem barks of *M. zeylanica* and *M. indica* possess better antioxidant and sun protection properties than aqueous extracts. Therefore, it can be employed in cream formulations to obtain fairness activity and sunscreen activity.

**Key words:** Antioxidant, DPPH, Fairness cream, *Mangifera indica*, *Mangifera zeylanica*, SPF