ID 757

Evaluation of Antioxidative Properties of Three Common Medicinal Plants Used to Treat Skin Diseases in Sri Lanka

RMKMK Rathnayakel[1], DYN De Silva[1], MPAPM Pathirana[1], MHS Nayanathara[1], and EHL Perera[1#]

[1]Department of Biomedical Sciences, Faculty of Health Sciences, CINEC Campus, Malabe, Sri Lanka

[#]harshani.perera@cinec.edu

Skin diseases are a major global health concern, and Sri Lanka has a long history of treating skin conditions using various medicinal herbs. The current study examined the antioxidative properties of three typical medicinal plants found in Sri Lanka: the leaves of the guava plant (*Psidium guajava L.*), the lemongrass plant (*Cymbopogon citratus*), and the candle bush plant (*Senna alata*) as tested plants and the Iluk plant (*Imperata cylindrica*) as a control plant. The fresh leaves of the plants were collected from the Kandy District and authenticated by the National Herbarium, Kandy Sri Lanka. The plant extracts were prepared by weighting a 50g of finely dry powdered (*Psidium guajava, Senna alata, Crymbopogo citratus*) and prepared ethanolic crude extractions (1:5 W/v) using Soxhlet apparatus to proceed with the DPPH assay. These ethanolic extracts of plants have shown the highest antioxidant capacity. Further, the combination of all three extracts have exhibited a lower IC_{50} value (381.503 mg/ml) than lemongrass (747.29 mg/mL) and candle bush (785.26 mg/mL), suggesting a possible synergistic effect between the plant components. The positive control, ascorbic acid (IC_{50} = 399.134 mg/mL), showed strong antioxidant activity on rate with guava leaves (313.99 mg/mL). Guava leaves showed the highest activity in the anti-oxidant activity assay, followed by the combination of lemongrass and candle bush leaves. This research will be the first to compare the antioxidative properties of these three medicinal plants and the synergistic effect associated with skin diseases by filling the knowledge gap in Sri Lankan herbal medicine, exploring their potential use as natural therapeutics for dermatological conditions.

Keywords: *psidium guajava, cymbopogon citratus, senna alata*