

Impact of Geographical and Host Variations on Physical and Chemical Properties of *Santalum album* Seed Oil

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Abstract

Santalum album L. of family Santalaceae grew in Sri Lanka, India, and Indonesia, are hemi parasitic in nature and high demand scented stem oil. According to the previous findings of *S. spicatum*, (Australian Sandalwood) seed oil is a rich source of natural and highly stable, Acetylenic fatty acid, and Ximenynic acid. It is useful as an anti-inflammatory agent to increase dermal micro-circulation. According to the literature, *Santalum* stem oil quality and quantity vary within local populations due to different host species. Therefore the present study was initiated to identify the variation of plantation grown *S. album* seed oil quality, and quantity due to the variations of host species and agro ecological conditions in Godigamuwa (WM3A), Moratuwawala (DL1A), Tangalle (IL1B) and Maho (IL3) of Sri Lanka. *S. album* seed samples were collected from the trees grown with different host species, viz., *Sesbania grandiflora*, *Leucaena leucocephala*, and *Gliricidia sepium* and oil of 5.000 g of kernels of each seed sample were extracted by Soxhlet extraction method. Gas chromatography was used to identify constituents present and their abundance in seed oil. One way ANOVA was used to analyse the statistical variant. In addition, fatty acid profile, physiochemical parameters, seed oil yield, kernel N% and the seed protein amount were analysed to find the impact from selected hosts and agro ecological variation. The recent study has identified statistically, there is a significant impact for seed oil yield, kernel N%, protein content, seed oil peroxide value, acid value, free fatty acid value, seed oil fatty acids profile from the selected host and agro ecological variation. However, there's no any significant variation in seed oil iodine value, saponification value, and specific gravity due to the impact of hosts and agro ecological conditions (F=0.03 p=0.998, F=0.09 p=0.992, and F=0.67 p=0.663), respectively.

Keyword: Host species, Impact, *Santalum album*, Seed oil quality, Ximenynic acid

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