

Seed oil variation of plantation grown *Santalum album* L. due to selected host and agro ecological variation

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Santalum album L. of family Santalaceae is a hemi parasitic plant species, endemic to Sri Lanka, India, and Indonesia. According to the former discoveries of *S. spicatum*, (Australian sandalwood) seed oil is an ironic source of natural and highly stable, Acetylenic fatty acid, and Ximenynic acid which are useful as anti-inflammatory agent to increase dermal micro-circulation and the *Santalum* stem oil quality and quantity vary within local populations due to different host species. Therefore 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) representing the dry and intermediate zone of Sri Lanka.

S. album seed samples were collected randomly from the trees grown with different host species, viz., *Sesbania grandiflora*, *Leucaena leucocephala*, and *Gliricidia sepium* in selected plantations in January 2018. Dbh and height of selected *S. album* trees and host species were measured. Oil of 5.000 g of kernels of each seed sample was extracted by Soxhlet extraction method and gas chromatography was used to identify constituents present and their abundance in seed oil. One way ANOVA was used to analyze the statistical variant. In addition, fatty acid profile and the physio chemical parameters were analyzed and compared with the published data of Australian *Santalum spicatum* seed oil.

The Recent study has identified statistically, there is a significant impact for seed oil yield, protein content, seed oil peroxide value, acid value, free fatty acid value, seed oil fatty acids profile from selected host and agro ecological variation. However, there's no any significance variation in seed oil iodine value, saponification value, and specific gravity due to 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. Result indicated that the seeds of *S. album* are smaller than the seeds of *S. spicatum* and the seed oil yield of *S. album* (60-80%) is greater than seed oil yield of *S. spicatum* (35-60%).

Keywords: *Santalum album*, seed oil quality, *Santalum spicatum* and ximenynic acid

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