Gyrinops walla, the Newly Found Agarwood Species: Variation of Agarwood Resin Content and Composition Across a Wider Geographical Coverage in Sri Lanka

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The ability of producing agarwood resin in *Gyrinops walla*, which is believed to be endemic to Sri Lanka, was scientifically discovered in 2012. Awareness made by this finding increased the willingness of the plantation sector to commercially cultivate *G. walla* in suitable areas. Since this species was not commercially cultivated previously, it is essential to identify the best conditions for growing it to earn income within a short time period. Therefore the present study attempted to identify the variation of agarwood resin contents and quality across a wider climate and geographical coverage of the country. Nine locations of different elevations and rainfall patterns were selected from the areas where agarwood is growing naturally. Dark color agarwood resinous tissues formed due to natural causes were collected from 90 *G. walla* trees. Resin contents of those samples were determined by solvent extraction and resin compounds were analysed by Gas Chromatography-Mass Spectroscopy. Although the average resin content varied from 1.95% to 4.92%, it was not significantly different between the tested locations. A relationship between rainfall and elevation could not be built with the resin content. However, the results revealed that there are higher variations within the trees of the same population than that of between populations. Solvent extracts found to contain a few semi-volatile 2(2-phenyl)chromones and fatty acids. Sesquiterpenes compounds identified from these samples were classified into six different types; agarofurans, vetispiranes, cadinanes, selinanes, guaianes and eremophilanes. However, the genetic differences and growth rates should be studied for arriving further conclusions.

Key words: Agarwood resin, agro-ecological region, *Gyrinops walla*, sesquiterpenes