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Chemical Composition, Antioxidant and Antibacterial Activities of *Syzygium Polyanthum* (Wight) Walp. Essential Oils

Nur Amalina A*, Natanamurugaraj G, Mashitah MY and Nurul Ashikin AK

Institution corresponding to authors: Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang, 26300 Gambang, Kuantan, Pahang, Malaysia; E-mail: melamalina@gmail.com

This study was performed to determine the chemical composition, antioxidant and antibacterial activity of *Syzygium polyanthum* essential oil. The essential oil was extracted from the leaves by hydro distillation method. A total of 34 compounds were identified using GC-MS, representing 93.87% of the overall composition. The leaf essential oil of *S. polyanthum* was composed largely of the monoterpene hydrocarbons and sesquiterpene hydrocarbons. The main components of the oils were α-pinene (30.88%) as major compounds followed by octanal (18.30%) and α-caryophyllene (6.22%). Antioxidant activities of the essential oils were evaluated using three different assay; DPPH free radical scavenging, β-carotene bleaching and ferrous-ion chelating. Results showed that the oil exhibited a potential antioxidant activity. The antibacterial activity of the essential oil was tested using disc diffusion method against three Gram-positive and three Gram-negative bacterial strains and the minimum inhibitory concentration (MIC) was determined. The oil was found to be more active against Gram-negative bacteria than Gram-positive bacteria. This study concludes that the essential oil from *S. polyanthum* possess bioactivity potential for purpose of development of new natural-based products.

Keywords: Syzygium polyanthum, essential oil, GC-MS, antioxidant, antibacterial.