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Constituents of essential oil, antioxidant activity, phenolic and flavonoid contents in different parts of *Pogostemon heyneanus* Benth. (Lamiaceae)

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Pogostemon heyneanus Benth.(Lamiaceae) is an industrially important, medicinal plant cultivated for essential oils used in modern perfumery and cosmetic industries. Therefore, the present study was undertaken to determine the distribution of constituents of essential oils, total antioxidant capacity (TAC), total phenol content (TPC) and total flavonoid content (TFC) in different parts (leaf, stem and root) of *Pogostemon heyneanus*. Powdered materials of leaf, stem and root were distilled in a Clevenger-type apparatus for 5 hrs. Gas chromatography-mass spectrometric (GC-MS) analysis was carried out to identify the components of essential oils. TPC, TFC and TAC of leaf, stem and root were determined by colorimetric Folin-Ciocalteu method, aluminium nitrate method and Ferric Reducing Antioxidant Power (FRAP) assay respectively. More than 90% of the total oil profile was identified and it was found that the essential oil composition was quite different in all three parts of the plant. Patchouli alcohol was presented in all the plant components leaf, stem and root in higher percentages as 44.56 ± 1.2 , 20.72 ± 1.23 and 5.76 ± 1.00 respectively. Caempferol was found as the main component in roots (80.49%). Significantly higher TPC, TFC and TAC were observed in leaf extracts. The order in increase of TPC, TFC and TAC in *P. heyneanus* was leaf > root > stem. Presence of higher constituents of essential oil, TPC, TFC and TAC in *P. heyneanus* leaves, scientifically validate the traditional claim of harvesting of *P. heyneanus* leaves for better therapeutic value. The higher TPC and TFC in leaf demonstrated the value of leaf for the development of effective drugs instead of root and stem.

Keywords: *Pogostemon heyneanus* Benth, Lamiaceae, antioxidant capacity, essential oil, phenolic content, flavonoid content