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Effect of different drying temperatures on oil yield, total antioxidant capacity and bioactive compounds of *Pogostemon heyneanus* Benth. (Lamiacea)

I J Amadoru[1*], S H C Kulathilaka[1], D C Abeysinghe[1], H A W S Gunathilaka[1] and R M Dharmadasa[2]

[1]*Department of Plantation Management, Faculty of Agriculture and Plantation Management,Wayamba University of Sri Lanka, Makandura, Gonawila*
[2]*Industrial Technology Institute, Bauddhaloka Mawatha, Colombo 07*

Pogostemon heyneanus is an aromatic crop which has a great demand in patchouli oil extraction for food, beverage, pharmaceutical and perfumery industries. *P. heyneanus* leaves and stems must be dried for removing excess moisture prior to the distillation step. The temperature of drying air influences the quantity and quality of the active ingredients present in the herbage. The study was conducted to find out the effect of different drying temperatures; room temperature, 40, 45, 50, 55 and 60 ^{0}C on drying herbage of *P. heyneanus* in terms of drying time, drying curves, oil yield and composition of bio chemical compounds. Initial moisture contents of freshly harvested stems and leaves of *P. heyneanus* were determined using microwave oven method and moisture loss was recorded at three hourly intervals in order to plot drying curves under different drying temperatures. The dried herbages were tested for oil content using Clevenger arm apparatus. The total antioxidant capacity (TAC), total flavonoid content (TFC), and total phenolic content (TPC) of dried herbage were tested, respectively, using Ferric Reducing Antioxidant Power assay (FRAP) method,a colorimetric method and Folin–Ciocalteu method. The data were subjected to analysis of variance and the means were separated by Duncan's Multiple Range Test at a probability level of 0.05.The average initial leaf moisture content of *P. hayneanus* herbage was estimated to be about 356% dry basis (db), and that of the stem was about 372% (db). The total time required to reach the final moisture content of drying leaves to less than 20% (db), under room temperature, 40, 45, 50, 55 and 60°C were approxymately 18, 33, 21, 18, 12, 9 hours respectively and that of the stems were 36, 36, 21, 21,15, and 12 hours respectively. The highest leaf and stem oil contents, 2.5% and 0.51%, were found under 55^{0}C while those of the lowest,1.95% and 0.35%, were found under room temperature respectively. Since there is no significant difference in oil content extracted at 45, 50 and 55 ^{o}C, a temperature of 45 ^{o}C is recommended to conserve bioactive compounds and antioxidant capacity.

Keywords**:** *Pogostomen heyneanus, drying,* total antioxidant capacity, total flavonoid content

indeewara@wyb.ac.lk Tel: +94 710311038/ +94 312299704