Evaluation of Essential Oil content and composition of *Ocimum* Species in Five Districts of Sri Lanka

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The genus *Ocimum* is a member of the Lamiaceae family which contains about 150 species of herbs and shrubs. Majority of species of genus *Ocimum* are essential oil bearing plants. Several species belonging to genus *Ocimum* are distributed in Sri Lanka. In the present study attempts were made to investigate the essential oils of populations distributed in 5 districts of Sri Lanka. Survey was conducted Anuradhapura, Matale, Gampaha, Kurunegala and Puttalam districts and 9 different samples (APMI 3, APMI 4, MLLD 2, MLLD 5, MLLD 6, KGYP 2, KGYP 5, GPLG 5, and PTWW 2) were collected, Species were authenticated by comparing with National Herbarium. These samples were air dried for 3 days and cut into small pieces (2cm) and hydro distilled using Clevenger apparatus. Essential oil composition was determined using GC-MS analysis. Cluster analysis for essential oil composition was carried out by using SPSS version 14. Oil content varied from 0.4% to 1.6% depending on the locality and the population. The highest oil content was reported from Loluwagoda (GPLG 5) in Gampaha district while the lowest was from Yaggapitiye, in Kurunegala district. Eugenol content varied from 1.45% (APMI 4) to 86.33% (GPLG 5). Methyl eugenol, Camphor, was only found in APMI 4 (85.64%) and APMI 3 (37.99%) respectively as the main component. Germacrene-d and Caryophyllene are common compounds of all the populations except APMI 3. Ocimine was found in 6 species except APMI 3, APMI 4, and MLLD 6. Thirty six compounds were identified from nine species. All populations were clustered into two on the basis of availability of different compounds using hierarchical cluster analysis. Cluster 1 consisted of 3 populations (MLLD 5, GPLG 5, KGYP 5) while cluster 2 consisted of 6 populations (MLLD 2, KGYP 2, PTWW 2, APMI 3, APMI 4, and MLLD 6). Information generated through the present study could be of vital importance for chemotaxonomy of *Ocimum* populations.

Key words: Ocimum, Lamiaceae, essential oil, GC-MS

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