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**Evaluation of Essential Oil Yield and Chemical Composition of Lemongrass
(*Cymbopogon* Spp.) Cultivars Grown Different Locations in Sri Lanka**

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Abstract

The leaf oil obtained by hydro-distillation of two different lemongrasses (*Cymbopogon* spp.) were investigated by Gas Chromatography Flame-Ionization Detector (GC-FID) and Gas Chromatography-Mass Spectrometry (GC-MS). Six samples (3 dried leaf samples and 3 fresh samples) randomly collected in different locations at Matale and Ranna areas were subjected to analysis. The main constituents of *C. flexuosus* Stapf (East Indian red stem lemongrass) grown Matale and Ranna areas were identified as d-limonene (1.7%, 4.0%), neral (39.9%, 23.7%), geranial (40.7%, 30.5%), citronellol (0.2%, 1.5%) and geraniol (5.0%, 23.1%). Plants grown Ranna area showed highest mean leaf oil yield (0.4% v/w). The essential oil of *C. citratus* Stapf (West Indian white stem lemongrass) grown Ranna area was characterised by high content of myrcene (9.1%), neral (33.3%), geranial (47.6%), geraniol (3.2%) and geranyl acetate (0.4%). Total citral content is a significant quality parameter of lemongrass oil. Total citral content is considered as a mixture of the trans-isomers geranial (citral a) and cis isomer neral (citral b). Citral fraction can be used for ionone synthesis which is valuable ingredient for perfumery industries. Hence high oil and citral yielded lemongrass varieties are required. Gas Chromatography of lemongrass oil showed that the West Indian white stem lemongrass grown Ranna area produced highest total citral content (80.9%). The East Indian variety grown in Ranna area showed a higher content of geraniol (23.1%). However, there is no such a high content of geraniol reported in both species of lemongrass oil in Sri Lanka.

Keywords: Citral, Geranial, Neral, *Cymbopogon* spp., GC-MS, GC-FID analysis