

**COMPARISON OF OIL YIELDS AND CHEMICAL
COMPOSITION OF SELECTIONS OF
Cymbopogon winterianus AND *Cymbopogon nardus***

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

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**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
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2018

ABSTRACT

Citronella (*Cymbopogon nardus* and *Cymbopogon winterianus*) is commercially cultivated for oil extraction and Cinnamon Research Station has developed and issued several citronella selections; three superior 'Heenpengiri' (HGC 01, EBC 02, and EWC 01) and two superior 'Mahapengiri' (KSC 04 and CRC 16) to conserve the wide genetic variability and provide high yielding citronella plant materials. However, a proper scientific analysis on chemical composition and yield of these developed selections has not been carried out. This study was focused on quantitative and qualitative analysis of oil extractions from five selections mentioned above. Steam distillation technique was used to extract the citronella oil; and gas chromatography equipped with Agilent DB WAX UI column was used to analyze the chemical composition of extracted oil. According to the overall analyses, HGC 01 has high quality than other two Heenpengiri selections as it has Citronellal (3.45%), Citronellol (8.53%) and Geraniol (18.95) values with standard while KSC 04 has Citronellol (9.12%), Geraniol (34.74%) and Limonene (1.58%) at 95% significant level and better than CRC 16. Complete Randomized Design was carried out and it shows that there were no significant differences between the oil yield of EBC 02 and HGC 01, HGC 01 and EWC 01 selections. The oil yield of KSC 04 was significantly higher ($P=0.045$) than that of CRC 16. With above results, HGC 01 from *Cymbopogon nardus* and KSC 04 from *Cymbopogon winterianus* can be recommended as best selections for commercial extractions.

Keywords: Citronella, *Cymbopogon nardus*, *Cymbopogon winterianus*, Selections