

Comparison of Chemical Composition and Oil Yield of *Vetiveria zizanioides* from Different Agroecological Regions in Sri Lanka

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Vetiver (*Vetiveria zizanioides*) is a perennial grass used to extract vetiver oil from its roots. Vetiver oil has higher economic value in the international market and mainly used in perfumery, cosmetics industry and known to be a repellent with insecticidal properties. In Sri Lanka, vetiver grasses are mainly cultivated in tea lands to conserve soil and moisture. The quality and quantity of vetiver oil might be vary depending upon different growth conditions prevailed in the cultivated areas but no such reported evidences available. Hence, the objective of this study was to compare the chemical composition and yield of vetiver oil from main tea grown regions of Sri Lanka. Vetiver roots were collected from same age plants by using stratified sampling technique and samples from each stratum were selected randomly from nine agroecological zones including three major tea growing regions (low, mid and high grown). Fine powder from each root sample was prepared separately and 45g of powder used in extractions. Hexane was used to extract the vetiver oil by using Soxhlet apparatus and gas chromatography-mass spectrometry (GC-MS) was followed to analyze the chemical composition. Experiment was conducted in complete randomized design with three replicate and analyzed using analysis of variance. Average yields of the vetiver oils obtained in high, mid and low grown areas were 4.1%, 2.4%, 1.5%, respectively. There is a significant difference between oil yields of high grown and low grown vetiver ($p < 0.05$) but no any significant difference between average yield in high and mid grown plants. In conclusion, highest percentage of oil was recorded in high grown vetiver with different chemical composition by showing the greater possibility of commercializing vetiver cultivation in high grown.

Keywords: Chemical Composition, Oil yield, Vetiver grass