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A comparative study of oil content and composition of Sri Lankan and Indian cultivars of vetiver (*Vetiveria zizanioides* L.)

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Vetiver (*Vetiveria zizanioides* L.), a scented grass with a lacework root system belongs to family Poaceae, is extensively used in perfumery industry. Chemical composition of vetiver essential oil (VO) extracted from the roots through hydro-distillation is extremely complex, containing more than 100 compounds that are mainly sesquiterpenes and their derivatives and the three constituents are khusimol, α- vetivone and β- vetivone. The objective of the study was to find the most suitable treatment to obtain more oil and to find the effect of different geographical origin on the quality of vetiver oils.

Dried roots of Indian cultivar (IN) and Sri Lankan cultivar (SL) were taken. Both samples were subjected to different treatments; 1) samples cut into small pieces (control), 2) samples cut into pieces and crushed (t1) and 3) samples cut into small pieces and soaked in water for 3 days (t2). Oil was extracted by water distillation, percent oil content was calculated and essential oils were analyzed to identify constituents and their percent concentrations using Shimadzu GC 8A Gas Liquid Chromatograph equipped with FI detector and 10 % Carbowax column 20M WAW. The constituents of oil were identified using previous chromatographic studies on vetiver oil.

SL cultivar showed high VO content compared to IN cultivar in each treatment. There can be a loss of VO due to crushing of samples and therefore the volatile oil content of vetiver was less in treatment 2

and 3. The Control shows the highest oil content and it was 1.5 % in Sri Lankan cultivar. The Sri Lankan vetiver oil was golden yellowish in colour whereas Indian vetiver oil was yellowish in colour.

Table.1: Average percent concentrations of sesquiterpenes in vetiver oil

Variety	Average % concentration of sesquiterpens		
	Khusinol	α-vetivone	β-vetivone
Sri Lankan cultivar	6.08	13.74	37.21
Indian cultivar	2.33	11.73	21.89

Sri Lankan cultivar contained higher concentrations of sesquiterpenes compared to Indian cultivar, may be due to geographical differences (Table. 1).

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