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A PRELIMINARY INVESTIGATION OF THE AROMA CONSTITUENTS OF GINGER (*ZINGIBER OFFICINALE*) GROWN IN SRI LANKA

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The volatile oil present in the rhizome of Ginger (*Zingiber officinale*) is responsible for the pleasant aroma of this valuable spice. Ginger oil is commercially used as a flavouring agent in the food industry and to a lesser extent in perfumery. At present, in Sri Lanka there are only a few small scale industries producing Ginger oil.

The major objective of this study, has been to determine the optimum conditions for obtaining maximum yields of good quality ginger oil from the varieties of this rhizome presently grown in Sri Lanka.

The two common varieties (Local and Chinese) were examined. The volatile oil was obtained both by water and steam distillation. Yields of oil ranging from 2.5-4.4% on a dry weight basis were obtained from dried freshly ground rhizomes. The fresh undried rhizome on distillation gave yields of oil ranging from 1.7-3.3% on a dry weight basis (the discrepancy in values between dry and fresh rhizomes being due to the fact,

that fresh ginger usually contains 75-80% moisture and hence requires long distillation periods to completely expel all oil). The rates of distillation of oil, the effect of *cohobation* and variations in percentage of oil on (a) drying ginger under varying conditions, (b) grinding by different methods and (c) grinding to varying particle sizes will be discussed.

Quantitative estimations of some of the more important monoterpene sesquiterpene and sesquiterpene alcohol constituents present in the oil (extracted under different conditions) and their variations determined by gas chromatography will be presented.