The Effect of Drying Temperature on the Quantity and Quality of Nutmeg Essential Oil

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Nutmegs have long been distilled for their essential oil, which is largely responsible for their odour and flavour. This thesis examines the factors that affect the quality of the oil this including the different methods used for extraction using steam.

Initially, investigations were done on the drying characteristics of nutmeg samples at temperatures of 34°, 36°, 38°, 40°, and 45° C. On reaching the equilibrium moisture content, samples, including one kept in cool storage, were water-and-steam distilled. One sample was water-distilled.

The results showed that the stored steam-distilled sample gave the highest yield with yields decreasing with increasing drying temperature. Physico-chemical characteristics of the oils differed slightly or not at all. Gas chromatographic analysis revealed no significant differences in the overall composition of the oil. However, on the basis of maximum sabinene and minimum safrole content, the stored nutmegs distilled by water-and-steam were best in quality.