MAKING ESSENTIAL OIL FROM PATCHOULI LEAF BY USING MICROWAVE

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ABSTRACT

Patchouli oil is one of the essential oils, sometimes called the etheric oil or flying oil. Essential oils or etheric oils is a term used for the volatile oil composition and different boiling points. Patchouli oil can process in various ways, such as distilled water, steam and water distillation and steam distillation. For raising the price of essential oils and optimize the potential essential oils, so raising the quality in accordance with applicable quality standards is very important. One way to do this, such as fixing the distillation technique and improve operating conditions for the distillation process to produce essential oils with the applicable quality standards. Purposing of this research is studying the process of extracting the oil from the leaves of patchouli distillation using a microwave as well as learn some of the factors that influence such as the influence of the oil refining patchouli leaves, leaf conditions (dry, wet and soaked), treatment of materials (chopped and not chopped) against yield and quality of patchouli oil are produced.

The research was conducted by using a microwave. Processing microwaves distillation, first weight about 100 grams of patchouli leaf and put it into the distillation flask without solvent to wet the leaves variable, with the addition of solvent to dry patchouli leaves variable and without solvent and the addition of variable steam to dry leaf, patchouli leaves to dry in a pumpkin distillation flask II were steam from distillation flask I with temperature 100°C and 1 atm pressure is applied to the distillation flask II, for dried patchouli leaves with the addition of
solvent heating flask containing distilled patchouli leaves by regulating the heating and temperature on the distillation process in accordance with the variable specified. Calculating the first drops distilled from out of the condenser, then hold distillate and separating oil using a funnel with a water separator. Remove any residual water in the oil by saving it into the freezer, then analyze the resulting oil. Variables in this research is patchouli leaf with cutting / chopping ± 2 cm and intact leaves, the observing time using of microwave, extracting oil performed for 20 minutes after the first distillate drips, distillation temperature (105, 110, 115 and 120°C), and conditions leaf (wet, dry and wetted). The operating conditions are atmospheric pressure and patchouli leaf mass of 100 grams.

From the research product obtained percent yield of the oil produced by using MDP greater than the use of MDS for patchouli intact leaves or chopped patchouli leaves (± 2cm) from 1.3567 to 2.4566, while the percent yield for the MDS between 1.4604 -1.9485. The treatment leaves chopped (± 2cm) was better in quantity compared with the treatment intact leaves the percent yield of essential oil produced in the leaves chopped (± 2cm) is about 2.4566% for MDP methods and 1.9485% for MDS methods. The results of qualitative analysis (GCMS), the largest component of patchouli oil from patchouli leaves is patchouli alcohol. And percent patchouli alcohol in chopped patchouli leaves greater than patchouli intact leaves that is about 31.88% for chopped patchouli leaves and 27.24% for patchouli intact leaves.

Keywords: Essential oils, distillation, extraction, Microwave