

**Determination of essential oil content and the chemical constituents
of nutmeg (*Myristica fragrans*, Houtt.) rind oil**

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Nutmeg (*Myristica fragrans*, Houtt.) produces two types of spices, namely nutmeg, and mace. Essential oils are produced commercially from both nutmeg kernel and from mace. The nutmeg rind that represents 70% by weight of the fruit is usually discarded by the farmers.

In this study, essential oil was distilled from fresh nutmeg rind with skin (WS) and without skin (WTS). Percentages of moisture and oil content on dry basis were calculated. The essential oils were analysed to find constituents and their percent concentrations using Shimadzu GC- 9A Gas Chromatograph equipped with FI detector and 10% Carbowax column 20M WAW. Standard samples of major chemical constituents were injected and according to their retention times (Rt) chemical constituents of nutmeg rind oil were identified.

Table: Average moisture % (M), average oil % on dry basis (Oil % DB) and average % concentrations of major constituents according to the treatments (Trt)

Trt	M %	Oil % DB	% concentrations of major constituents					
			β -caryophyllene	Terpene -4-ol	α -terpineol	Safrole	Elimicin	Myristicin
WS	91	1.13	38.00	17.10	0.02	3.80	2.59	2.52
WTS	94	1.18	16.20	7.90	4.45	1.63	13.90	19.25

The average oil content of nutmeg rind was approximately 1.16 %. The aroma of rind oil observed to be similar to nutmeg seed and mace oils. Rind oil showed relatively high concentrations of elimicin and myristicin compared to seed and mace oils. With the outer skin, rind oil content was relatively low.

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