

Impact of stage of maturity on chemical changes of nutmeg (*Myristica fragrans* Houtt.)

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Nutmeg, *Myristica fragrans* Houtt. belongs to the family Myristicaceae, and is one of the most important export agricultural crops of Sri Lanka. A serious problem in the nutmeg industry is harvesting at immature stages for the market. This affects the changes in chemical compositions, yield and the quality of nutmeg, which has clearly defined.

Fruits were labelled at the time of initiation and harvested at 1 month intervals from 4th month of fruit set up to 8 months. The experiment was set according to the Completely Randomized Design (CRD) with 9 replicates for each age group. Chemical characteristics (oil content, oleoresin content of seed and mace, changes in chemical constituents of seed and mace oils) were determined.

Mean oil contents were 20 % and 9 % respectively in mace and seed at 4 months and significantly decreased at $P=0.0001$ with maturity (2.5 % and 1.5 % in mace and seed in 8 month old fruits). The highest oleoresin contents 48 % and 27 % were recorded in the 5 month old fruits and gradually reduced up to 19 % and 15 % respectively in mace and seed in 8 month old fruits. Elemicin and myristicin are two major compounds. The concentration changes of other 8 chemical compounds were not significant with maturity. The concentration changes of elemicin and myristicin were as follows.

Table: Changes in elemicin and myristicin concentrations with age in seed and mace oils

Age	4 months		5 months		6 months		7 months		8 months	
	seed oil	mace oil	seed oil	mace oil	seed oil	mace oil	seed oil	mace oil	seed oil	mace oil
% elemicin concentration	12.71	15.86	19.82	14.63	12.47	12.61	10.41	9.20	10.19	8.91
% myristicin concentration	10.80	14.78	17.22	12.17	16.23	10.79	12.50	9.79	10.54	7.72

Due to low availability of extraction methods of oils and oleoresins at farmer level it is better to keep fruits until fully mature stage to earn a higher income as well as to supply a quality product to the market.

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