

The relationship between growth stages and aroma composition of lemon basil *Ocimum basilicum* var. *citrodorum* L.

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Abstract:

Plants produce volatiles depending on the season, growth cycle and time of year. Lemon basil "*Ocimum basilicum* var. *citrodorum*" possesses three growth stages; pre-flowering, full flowering and post-flowering. The volatiles of lemon basil infusions either increased or decreased throughout the growth cycle. Oxygenated compounds were the predominant class detected. Volatiles such as citral (neral+geranial), eucalyptol and estragole contribute to the flavor profile and may contribute in the plant defense mechanism. Volatiles detected at the flowering stage known to attract pollinators and may act in the defense mechanism. Hydrocarbons such as myrcene, α -phellandrene, E- β -ocimene, oxygenated compounds such as linalool, eucalyptol and sesquiterpenes such as β -caryophyllene are present in lemon basil and reported effective in the flowering stage. Leaves are widely utilised in tea and infusions, this research found fewer volatiles in leaves and more in flowers and aerial branches, subsequently using them in infusions will enhance the flavour attributes.

Key words: Aroma composition, seasonal variation, growth pattern, lemon basil;

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