

COMPOSITION OF THE ESSENTIAL OIL OF *Lysimachia pentapetala* FLOWERS

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Lysimachia pentapetala Bunge belongs to the Primulaceae family and is widely distributed in China [1]. It has been used in traditional Chinese medicine to cure bruises and dysentery, and as a detoxicant and diuretic [2, 3]. Phytochemical research shows that the plant contains triterpenoids, flavonoids, and lignans [1, 4]. No research has so far been conducted concerning the chemical constituents of the essential oil of the plant.

In order to identify the chemical constituents of the essential oil in the flowers of *L. pentapetala*, we report on the essential oil in flowers of *L. pentapetala* using the HS-SPME technique, which was subsequently analyzed by GC-MS for the first time.

Samples of the air-dried plant of *L. pentapetala* Bunge were collected in Henan, China, in July 2009. They were identified by Prof. Changqin Li. A voucher specimen (No. 0907091) was deposited in the Herbarium of the Institute of Natural Products, Henan University.

The chemical composition of the oils in the flowers are presented in Table 1. Nineteen compounds were identified in the flowers of *L. pentapetala* and account for 80.95% of the total oils. The main compounds were 3,7-dimethyl-1,6-octadien-3-ol (19.51%), followed by phenylethyl alcohol (19.08%) and 1-octen-3-ol (12.60%).

Among these compounds, 3,7-dimethyl-1,6-octadien-3-ol has a strong aroma of fresh grass leaves and its fragrance is widely used in perfumes, soap, and cosmetics. Phenylethyl alcohol has a fresh bread aroma, and 1-octen-3-ol and borneol have the aroma of mushrooms, lavender, rose, and hay.

TABLE 1. The Essential Oils in the flowers of *L. pentapetala*

Compound	RI	Percentage, %	Compound	RI	Percentage, %
(Z)-3-Hexen-1-ol	852	1.18	Eugenol	1346	1.74
1-Octen-3-ol	989	12.60	Pentadecane	1496	1.37
<i>cis</i> -Linaloloxide	1073	2.14	Hexadecane	1609	1.81
1-Octanol	1081	1.89	Heptadecane	1705	1.94
3,7-Dimethyl-1,6-octadien-3-ol	1108	19.51	6,10,14-Trimethyl-2-pentadecanone	1874	1.16
Phenylethyl alcohol	1120	19.08	Hexadecanoic acid, methyl ester	1961	1.59
<i>trans</i> -7-Methyl-3-octene	1145	1.08	Heneicosane	2104	1.41
Borneol	1172	5.16	Docosane	2205	2.14
Decanal	1209	2.07	Tricosane	2302	2.34
Tridecane	1298	0.74	Total, %		80.95

*Retention indices calculated against *n*-alkanes.

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