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# Differences between the leaf and stem essential oils of domestic *Mentha spicata* var. *spicata* (L. 1753) plants

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## Introduction

The stick insect *Medauroidea extradentata* (Brunner von Wattenwyl 1907) can feed in captivity on different plants like brambles, raspberries (*Rubus* spp. (L. 1753)) and hazels (*Corylus maxima* (Mill. 1768)). The stems, and not the leaves, were eaten when the *M. spicata* var. *spicata*'s branches were given (1). Two explanations are plausible: the chemical composition is different in the leaves and the stems or the stems have essential oils concentration lower than in the leaves. To determine which explanations is the best, the fresh plant was hydrodistilled according the Likens-Nickerson's method, followed by a gas chromatography (2). The results are described here.

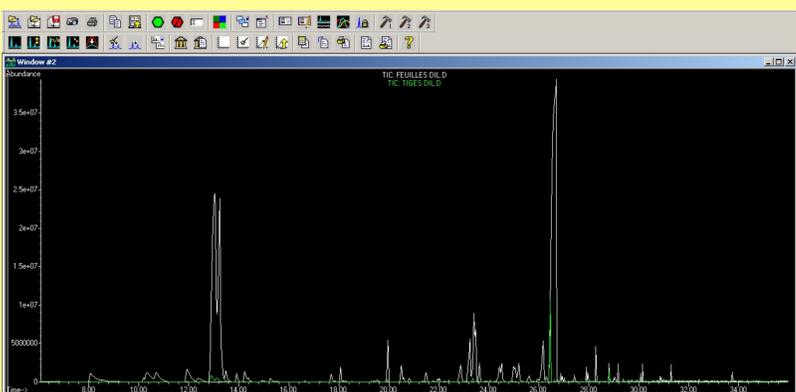
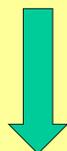
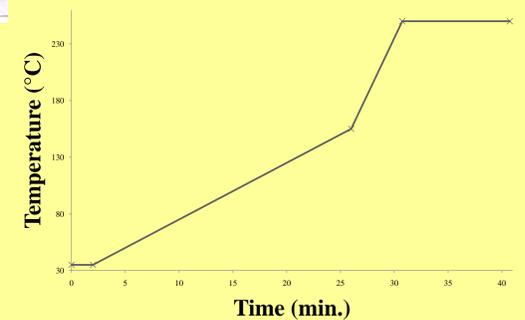
## Experimental and Results



Agilent GC 6890 with 5973 N detector (GC-MS)

VF-WAXms (polar capillary column, 30.0 m)

Flow: 1.5 mL/min



Retention time (min)	Compound's name	Corrected areas for 22 g of stems (S)	Corrected areas for 50 g of leaves (L)	Ratio L/S for the same weight
12.96	D-Limonene	68799550	2733637592	17.48
13.16	Eucalyptol	46877918	1599638422	15.01
13.47	<i>trans</i> -hex-2-enal	18692747	93991012	2.21
19.95	Sabinene hydrate	10504275	183981809	7.71
23.19	$\beta$ -Elemene	6140937	281787535	20.19
23.39	Caryophyllene	14245451	375609634	11.60
26.71	D-Carvone	301955328	4705024678	6.86
27.91	<i>trans</i> -Carveol	4590070	34655955	3.22
28.28	<i>cis</i> -Carveol	3638641	79801869	9.65
30.86	Eugenol	875589	8877192	4.46

## Conclusion

The leaves and the stems have exactly the same the chemical composition. But the concentration of the essential oil is almost 10 times lower in the stems than in the leaves. The stick insect *M. extradentata* prefers stems instead of leaves from *M. spicata* var. *spicata*. because the essential oil concentration is lower.