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# Composition of the Essential Oil of *Thymus fallax* Fisch. et Mey. from Turkey

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## Abstract

Water-distilled essential oil from aerial parts of *Thymus fallax* was analyzed by GC/MS. Thirty-two compounds were identified representing 99.4% of the total components detected with carvacrol (68.1%) as the major constituent.

## Key Word Index

*Thymus fallax*, Labiatae, essential oil composition, carvacrol.

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### Plant Name

*Thymus fallax* Fisch. et Mey. (1).

### Source

Plant material was collected from Malatya: Konak Bey Mountain in Turkey on 1 July 1996 at an altitude of 2000 m. Voucher specimens are kept at the Herbarium of the Faculty of Pharmacy, Anadolu University in Eskisehir, Turkey (ESSE 12292).

### Plant Part

Dried aerial parts were water distilled for 3 h using a Clevenger-type apparatus to yield 2.16% oil.

### Previous Work

None.

### Present Work

The oil was analyzed by GC/MS using a Hewlett-Packard GCD system. Innowax FSC column (60 m x 0.25 mm) was used with helium as the carrier gas. GC oven temperature was kept at 60°C for 10 min and programmed to 220°C at a rate of 4°C/min, are then kept constant at 220°C for 10 min and programmed to 240°C at a rate of 1°C min. Split flow was adjusted at 50 mL/min. The injector and detector temperatures were at 250°C. MS were taken at 70 eV. Mass range was from m/z 35 to 425. Library search was carried out using Wiley GC/MS Library and TBAM Library of Essential Oil Constituents. Relative percentage amounts were calculated from TIC by the computer. The compounds identified in the oil are shown in Table I.

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Table I. The chemical composition of *Thymus fallax* oil

Compound	Percentage	Compound	Percentage
$\alpha$ -pinene	2.8	1-octen-3-ol	0.2
$\alpha$ -thujene	0.2	trans-sabinene hydrate	0.7
camphene	0.1	linalool	0.1
$\beta$ -pinene	0.1	cis-sabinene hydrate	0.2
myrcene	1.3	terpinen-4-ol	0.7
$\alpha$ -terpinene	0.9	$\beta$ -caryophyllene	3.8
limonene	0.4	cis-dihydrocarvone	0.4
1,8-cineole	1.5	trans-dihydrocarvone	0.2
$\beta$ -phellandrene	0.2	$\alpha$ -humulene	0.1
$\gamma$ -terpinene	3.6	$\alpha$ -terpineol	0.4
(E)- $\beta$ -ocimene	0.2	borneol	0.7
5-methyl-3-heptanone	1.4	$\beta$ -bisabolene	0.3
p-cymene	4.8	p-cymen-8-ol	0.1
terpinolene	0.1	caryophyllene oxide	0.3
3-nonanone	<0.1	thymol	5.4
3-octanol	0.2	carvacrol	68.1

### Reference

1. P. H. Davis, *Flora of Turkey and the East Aegean Islands*. Vol. 7, p 367, University Press, Edinburgh (1982).

