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(E-mail:j-torkaman@yahoo.com)

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T204 () TAPPI T264 ()
(Q.stenophylla makina)

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¹ - Hiroki Nishimura et al.

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TAPPI

T264

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(GC-MS)

D F E D C B A

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GC-MS

GC-MS			
1,2 Benzendicarboxylic acid, diethyl ester			
1,2 benzendicarboxylic acid (2-methyl propyl)ester		A	
1,2 benzendicarboxylic acid 2-ethyl hexyll			
9-Octadecenoic acid			
15-Tetracosenic acid, Methyl ester		B	
11,14- Eicosadienioc acid, Methyl ester			
Eicosanol (Arachidic alconol)			
Tetracosanol (lignoceric alcohol)		C	
1.Dibenzo furan, Carboxylic acid		D	
α .Terpineol		E	
Farensol		F	
Cyclopropunetetradecanoic acid, 2-octyl-Methly ester		G	

pH =

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pH

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(GC-MS)

A

B (MW=222, C₁₂H₁₄O₄)
(MW=222, C₂₀H₃₄O₂)

C (C₂₄H₄₇O₂)
(C₂₀H₄₁OH)

D (C₂₄H₄₉OH)
(MW=212, C₁₃H₈O₃)

F α E

G (MW=220, C₁₅H₂₄O)

(MW=394, C₂₉H₅₀O₂)

(/)

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A

B

C

D

E

F

G

(/ / /)

(/)

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/ /

/ D /

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$$Y=0.075+0.8X$$

X

IR UV NMR HPLC

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Bark Extractives Analysis of Five Iranian Hardwood Species

J. Torkman¹ A. Mirshokrayi² H. Resalati³

Abstract

To analyse the bark extractives, samples from five Iranian hardwoods trees such as black walnut, oak, alder, hornbeam and beech were prepared. Experiments showed that the total extractive content of these species were 29.8, 23.2, 17.9, 16.8 and 16.7 percent, respectively. The total ash content were 19.2, 11.5, 9.5, 12.8 and 13.8 percent, respectively. Also, it was shown that the total phenolic materials were 26.3, 21.2, 13.6, 12.9 and 14.0 percent, respectively. By sequential precipitation, flobatanins, flobaphens and flavonoids were separated and measured quantitatively. Also, the percentage of tannins were found to be 40-50% which is less than those of softwoods (50-60%); this means that the non-tannin extractives of hardwoods are more than those of softwoods. The lipophilic compounds of barks were determined quantitatively using gas chromatography. Also, the chemical structure of a number of these compounds were suggested using GC-MS techniques.

Keywords: Extractives, Hydrophilic compounds, lipophilic compounds, Tannins, Flavonoids, Gas chromatography, Mass spectrometry.

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