Oil and fatty profile on the film from the Pistacia Region of Collo

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Abstract
The objective of this study is the determination of the analytical parameters and the fatty acid composition of the film from pistacia lentiscus, the extraction was carried out by soxhlet using an apolar solvent which is hexane, the chemical composition of fatty acids was performed by chromatography alone and coupled to mass spectroscopy (CGC, GC/MS) this study identified 7 constituents representing 86.81% the compounds the major compounds are palmitic acid 28.15%, oleic 26.56% and linoleic 24.57%.

Keyword: Pistacia, Extraction, oil, Fatty acids, CG/MS.

Introduction
The lentiscus pistachio is a shrub ofsize ranging from 2m to 6m which spreads throughout the Algerian land with a high density in the forest areas and also in the fresh countryside and belongs to the family of anacardiaceae.[1] Its fruits have a spherical flattened shape of small dwarf at the beginning its color is green then turns to the black color, this fruit is covered by a soft zest then comes a hard layer containing a pulp of good taste and an embalmed odor (IRN BITAR).

In the literature several works have been done on the oil extracted from the mesocarp and epicarp mixture of the wall fruit proving that it contains saturated and unsaturated fatty acids.[2-3]

Bibliographie investigations hâve shown no study has been done on the determination of the parameters and fatty acids of the epicarp. We were interested in this work which consists of an extraction, isolation and identification by chromatography coupled to mass spectroscopy.

Materials and Methods
The conditions for harvesting the fruit in the following table:

Table 1 : Recapulative of harvest conditions

Botanical name	Date of Harvest	Location	Stage of development	Vegetative
Pistacia	December 2016	Collo	Fruit Walls	Foret

The harvested fruit is separated after peeling for two part mesocarp and epicarp film is the latter which will be the subject of our work in the following part ofthe film then dipped in liquid nitrogen for stabilization from the chemical point ofview. cryogynation and primordial in the conservation ofvegetable matter, it is crushed to obtain a powder which will be put in the freezer at -4 ° C until analysis

Extraction of the oil : The fruit is dried in an oven at 80 ° C for 10H the oil obtained after 16H extraction with hexane in a continuous extractor sohxlet after removal of the solvent by evaporation in vacuo, recovers oil qi is yellow and a very strong scented odor and solidifies at room temperature.

Analysis of analytical parameters: the determination of main chemical characteristics is made according to standardized standard methods.[4]

Statistical Analysis

All the experiments underwent three repetitions using the analysis of the variance (ANOVA) the values were calculated by comparison of the averages.

Preparation of methyl esters of fatty acids: The method we used is the cold transesterification using a methanoidal sodium hydroxide solution, in a 10 ml screw tube are introduced 0.5 g of oil then 10 mldd heptane and The mixture is stirred and then 0.1 ml of 2N sodium methanoic is added, poured and stirred very hard and then decanted to recover the upper layer containing the methyl esters [the reaction was followed by IR to confirm the existence ofaband) at 1750cm-[1]

GC analysis: The COG analyzes were carried out on AGITANTTECHNRLOGIE 6890 equipment equipped with a flame ionization detector FID) of an injecter and a HP5 capillary column (30 x 0.32 mm, film thickness

0,25 μm) the carrier gas is helium, the temperature is 270 ° C., the temperature program of the oven consists of an isothermal 80 °/min followed by a temperature lamp at 50 ° / min up to 310 ° / 2min, the injection is done by SPLILESS mode, the injected volume of 1ml.

Analysis bv GPC-SMRH: The analyzes were carried out on equipment AGITENT type TECHNOLOGY 6890 dote an automatic injector and a capillary column HPS [30Mfois 0.32 mm film thickness 0.25 microns] coupled to a mass spectroscopyAUTOSPEC 610 the ionization mode is the electronic impact at 70W, the detection is done by HRMS analyzer [high resoultion mass spectrometry) of EBE type in the mass range from 50 to 800Da, the carrier gas is helium with a flow rate of 1ml / min, the programming of the temperature is identical to that used previousiy for detection by FID, the injection is done by the Splytiess mode the spectra obtained have been identified by comparison with the spectrum database ofknown NIST compounds [5].

Qualitative and quantitative analysis: For each of the compounds, the retention indices are calculated from the retention times of a standard range ofC8-C30 aïkanes (KOVATS indices) analyzed in the mining conditions chroma graphies cited above the calculation of relative percentages of thèse compounds was performed on the chromatograms obtained by FID.

Results and Discussions

The results of our experiments on the determination of the analytical parameters are shown in Table 2.

Table 2 : Characterization of film and fat

Water content	24,50 ± 0,21
Fat extracted with hexane	68,50 ± 0,05
Cendre	2,70 ± 0,01
Protéine N x 6,25	10,50 ± 0,41

Mineral elements [mg / 100g of dry matter)

K*	Fe	P	Ça	Zn**	Mn	Mg	Na*	Cu
9,07	165	103,7	1,287	22,9	30,50	3,201	86	11,4

* Indicates by emission of the flame

** refers to atomic absorption

Phosphorus was measured by ascorbic acid calorimetric method and 820nm ammonium

Table 3

Melting point	27.5 ± 0.1
Indice de réfraction	1.4 ± 0.2
Density	1,3 ±0,5
Standard Saponification Index (T60206)	191.90 ±0.5
lodine value (wijs)	CT60206)
Acid value (AOCS)	2.7 ±0.21
Unsaponifiable (hexane method)	3.14 ±0.15
Peroxide value (mmol /kg)	3.8 ±0.2
lovibond color	Blue= 0.6
	Red=2.7
	Yellow = 80.7

The high value found for the content in eu lights us on its water richness which is higher compared to that of rapeseed (17,64%) and sunflower (19,77%) concerning the content of ash which is about 2.7% confirms that our sample does not contain toxic elements, the low protein content shows us that the amino acids they contain are very low, for the mineral elements there is no evidence of toxic elements since the ash rate is very low.

The high unsaponifiable content corresponds to an oil rather to be useful as an interesting raw material in cosmetics according to (OLLE 2002).

On an average of three extractions the proportion of the oil present in the film is 68.50%.

The determination of the peroxide index and the acid number gives an image of the state of degradation of the oil. The low values of thèse two indices show that our sample has not undergone any oxidative and hydrolytic deterioration during storage. iodine and saponification indices indicate their preponderance oflong chain C18 fatty acids with a higher rate of initiation. The value observed in the yellow of the color lovibon confirms our yellow color of the extraction, the observed value which is of the order of 80.7 confirme our color of the oil that is yellow of ours ample during our extraction .

Table 4 : composition in% of the fatty acids of the film

Components	Name	IK	RT	%
Palmitic acid	C16	1090	12.241	28.150
Palmitoleic acid	C161A9	1659	13.010	1.376
Oleic acid	C181A9	1290	18.880	26.562
Linoleic acid	C181A9.12	1120	20,860	24,571
linoleic a acid	C183A9.12	1510	23,050	5,991
Stearic acid	C18	1640	17.823	4.089
Cicric acid	C19	1014	5.614	4.089

The table shows the absence of the acidthatis considereed undesirable because of its pathological effect on the cardiac muscle.[7] The value of the high rate of palmitic acid could open a way for use in the industry as an example, manufacture of biscuits indeed this oil is remarkable for its high content ofacid linoleic acid sought for various industrial applications

Conclusion

This botanical plant pistacia presented on the Algerian tell for essentially medicinal purposes constitutes in the light of these results a plant material quite interesting which one must depend the study through the qualitative and quantitative analysis of the important constituents of the unsaponifiable fraction this evaluation to corne soon in our newspaper.

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