Euro Fed Lipid
european federation for the science and technology of lipids

SISSG
SOCIETÀ ITALIANA PER LO STUDIO DELLE SOSTANZE GRASSE

# Lipidic characterisation of a medieval oil from the Occitan Valleys: the 'marmot' oil

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# ROLLOUT


*Prunus Brigantina* Vill.

# ROLLOUT


50% of fat

Oil yield 1 L / 2 Kg of almonds

*Prunus Brigantina* Vill.

# HISTORICAL PRODUCTION

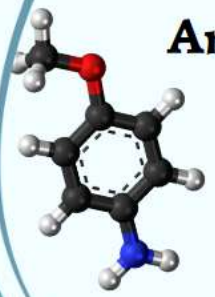

## Marmotte Oil

- ✓ Golden yellow
- ✓ Fluid
- ✓ Crystal-clear
- ✓ Bitter Almond aroma

# PURPOSE

Investigating the composition of "marmotte" oil to find new uses for it

## Total free acidity (AV)
## Peroxides Values (PV)
## Anisidine value (AnV)



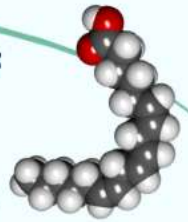
Results obtained by photometric analysis (FOODLab)

505 nm --> PV

630 nm --> AV

366 --> AnV

## Total Fatty Acids



Transesterification (KOH 2N in methanol)

Gas chromatographic analysis (GC-FID) of their methyl esters (FAMEs)

## Sterols

Saponification (KOH 4N in MeOH, 18h)

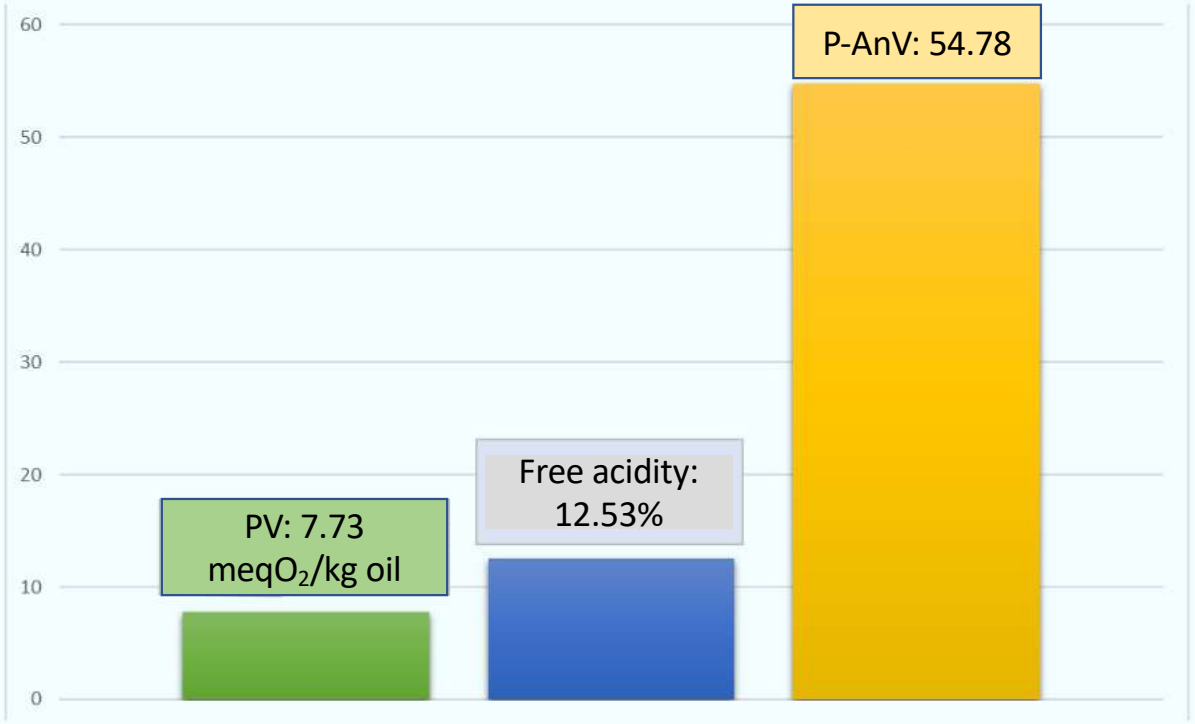
Extraction with Dietyl Ether

Purification SPE-Si

Silylation

Characterization and quantification through GC-MS

# RESULTS: PHOTOMETRIC ANALYSIS



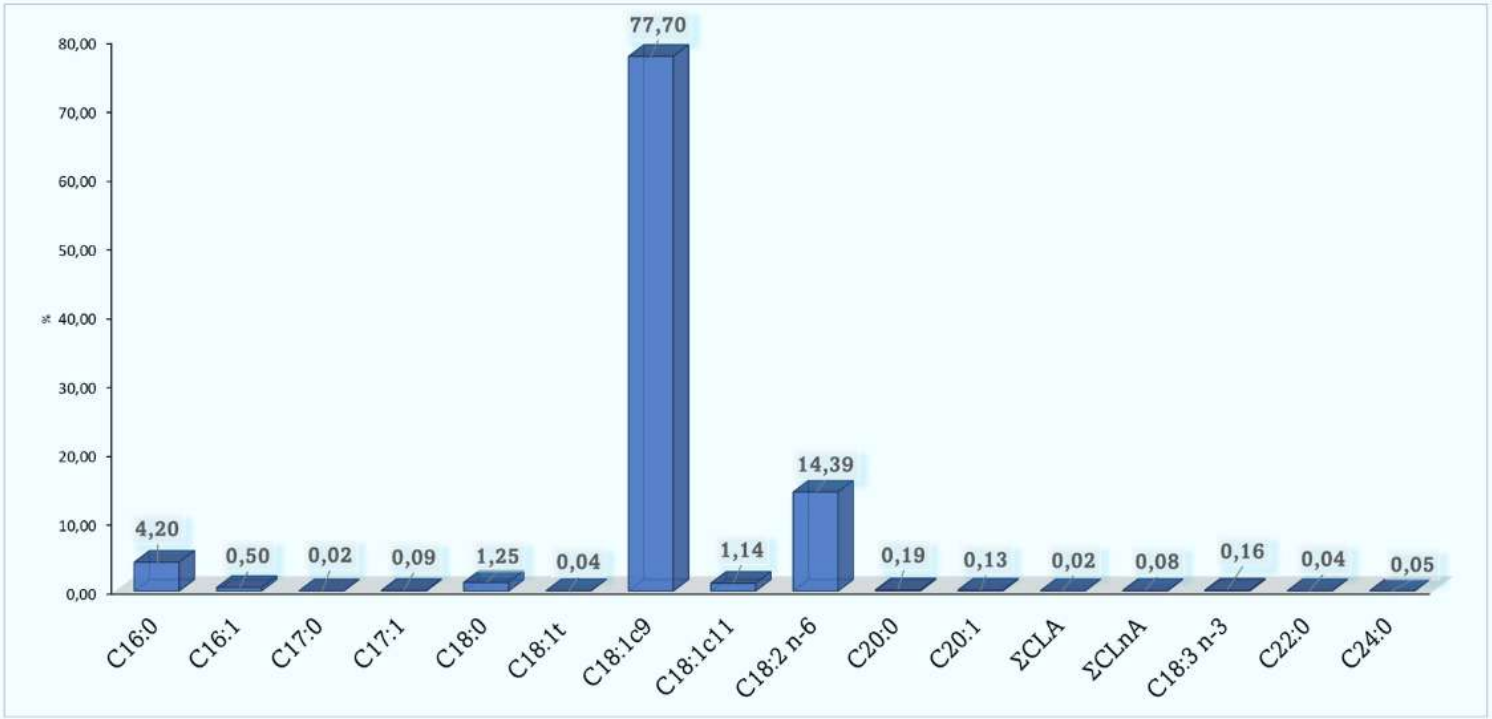

The *marmot* oil displayed high level of free acidity, as well as peroxide and anisidine values

# RESULTS: PHYTOSTEROLS



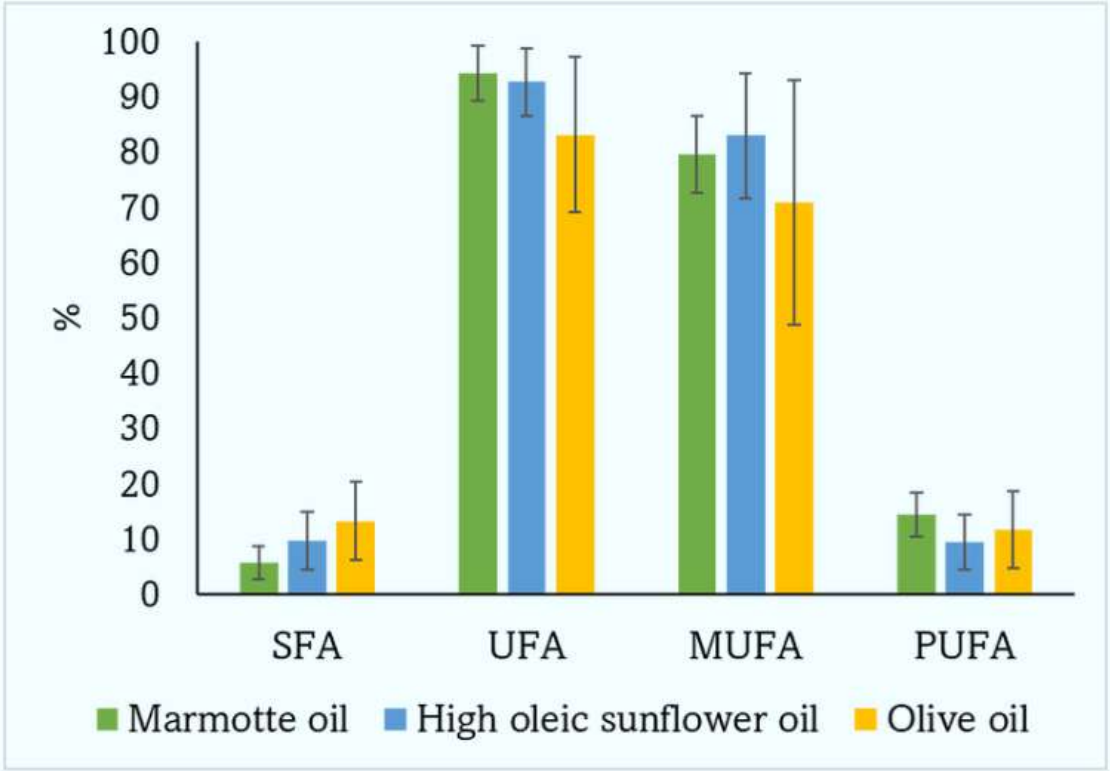

The total content of sterols was ranged from 1875 – 2443 mg/kg of oil

# RESULTS: TOTAL FATTY ACIDS

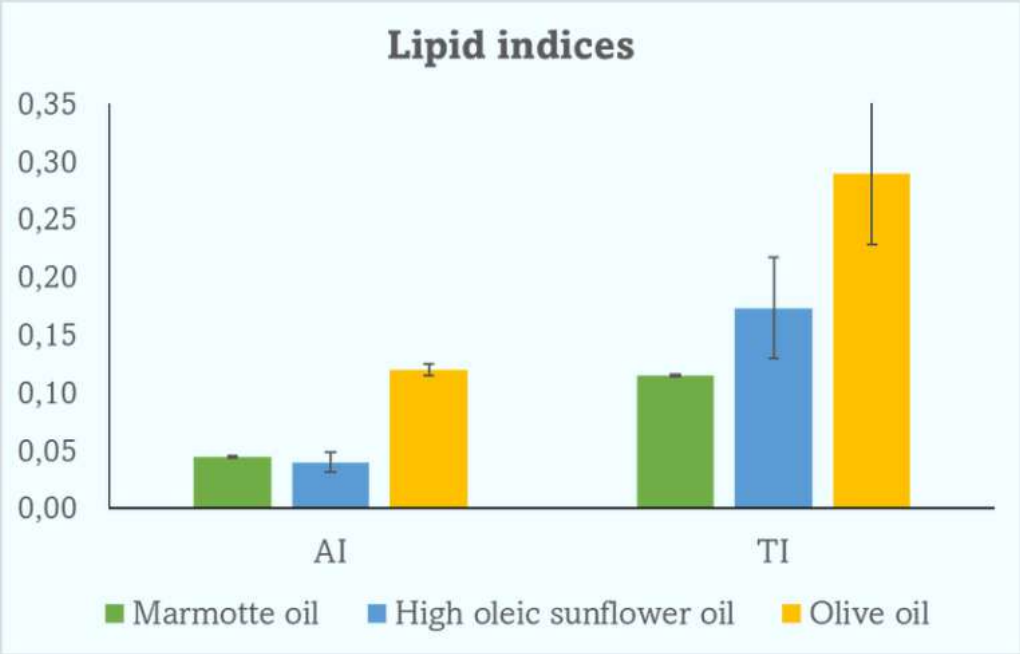


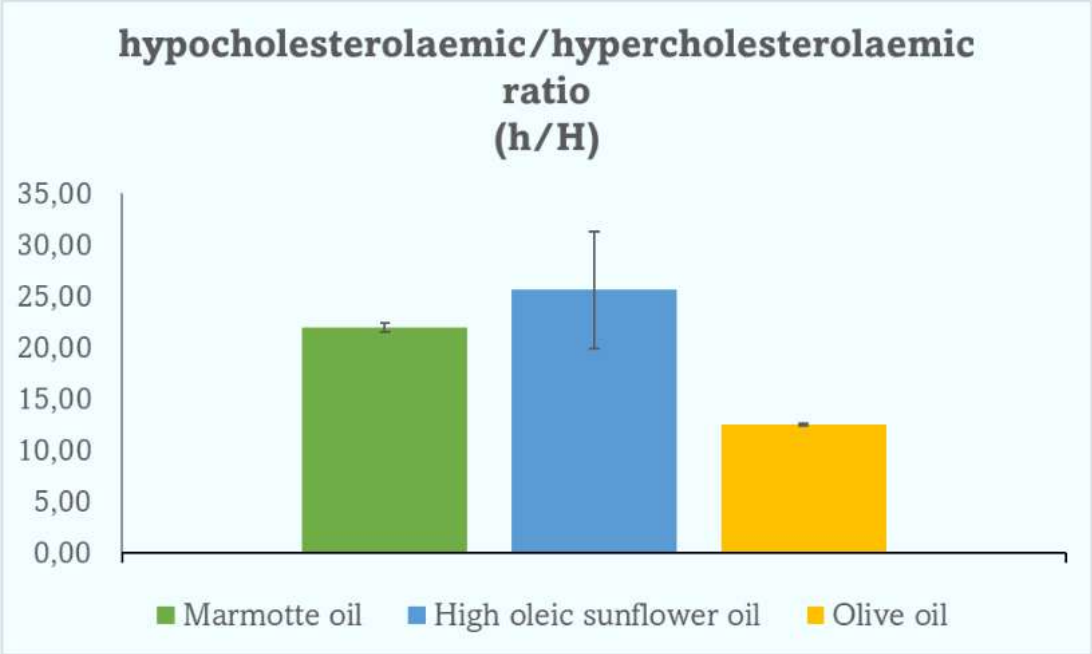

*The main determined fatty acid was oleic acid followed by linoleic and palmitic*

# RESULTS: TOTAL FATTY ACIDS




*The oil was mainly comprised of unsaturated fatty acids, in particular, monounsaturated fatty acids, while a great balance between saturated and polyunsaturated fatty acids was observed*


Lipid indices
0,35
0,30
0,25
0,20
0,15
0,10
0,05
0,00
AI
TI
Marmotte oil
High oleic sunflower oil
Olive oil


hypocholesterolaemic/hypercholesterolaemic ratio
(h/H)
35,00
30,00
25,00
20,00
15,00
10,00
5,00
0,00
Marmotte oil
High oleic sunflower oil
Olive oil

# CONCLUSION

*Based on these results, the "marmot oil" could find application in different sectors (cosmetic, nutraceutical, nutri-cosmetic) going to expand the sources of bioactive lipids.*

*However, further studies are needed to reduce the impact of the hydrolytic and oxidative phenomenon*

*It needs to evaluate the effect of soil and climatic conditions as well as harvesting, extraction and storage techniques as related to oil quality.*

# Thank you

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Foodmolelab

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