

## Il CeRA all'interno di COMPETiTive

biofenoli, aromi, ultrasuoni e qualità dell'olio  
extravergine: i risultati di uno studio su oltre 100  
oli

**Mulinacci Nadia**

**CeRA** (Centro Interdipartimentale di Ricerca e valorizzazione degli Alimenti) University of Florence



Workshop progetto AGER .

COMPETiTive: Claims of Olive oil to iMProvE The market ValuE of the product

Firenze 30 Gennaio 2020



*Firenze 1427....al tempo dei Medici*

**1 Kg di Olio d'oliva = 5 L di vino**

**1 Kg di Olio d'oliva = 4 Kg di grano**



[https://www.regione.toscana.it/piramide-alimentare-toscana/i-livelli-della-piramide/.](https://www.regione.toscana.it/piramide-alimentare-toscana/i-livelli-della-piramide/)





# OLIO EXTRA VERGINE DI OLIVA (EVOO)

*... un nutraceutico naturale*



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# QUANTO OLIO ASSUMIAMO NEGLI ANNI ?

25 g/giorno

per 1 anno = 9,13 Kg

35 g/die

per 1 anno = 12,8 Kg

A 40 anni abbiamo ingerito 365 Kg (511 Kg)

A 60 anni.....548 kg (768 kg)

A 80 anni .....730 kg (1022 kg) !!



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## Oltre 100 oli extra vergine

Apulia 2017	Cultivar	TuscanY 2017	Cultivar	TuscanY 2018
A17-C1	Coratina	T17-F1	Frantoio	T18-F1
A17-C2	Coratina	T17-B1	Blend	T18-L1
A17-P1	Peranzana	T17-B2	Blend	T18-M1
A17-P2	Peranzana	T17-B3	Blend	T18-B1
A17-P3	Peranzana	T17-N1	Nocellara	T18-B2
A17-P4	Peranzana	T17-C1	Coratina	T18-M2
A17-P5	Peranzana	T17-B4	Blend	T18-F2
A17-P6	Peranzana	T17-B5	Blend	T18-L2
A17-P7	Peranzana	T17-B6	Blend	T18-F3
A17-P8	Peranzana	T17-C2	Coratina	T18-L+M
A17-P9	Peranzana	T17-TI1	Tonda Iblea	T18-L+F
A17-P10	Peranzana	T17-L1	Leccino	T18-B3
A17-P11	Peranzana	T17-F2	Frantoio	T18-B4
A17-P12	Peranzana	T17-F3	Frantoio	T18-L3
A17-B1	Blend	T17-M1	Moraiolo	T18-PE
A17-B2	Blend	T17-B7	Blend	T18-L4
A17-B3	Blend	T17-B8	Blend	T18-MdI
A17-C/O1	Coratina/Ogliarola	T17-B9	Blend	T18-M3
A17-C/O2	Coratina/Ogliarola	T17-B10	Blend	T18-F4
A17-Cn1	Cellina di nardò			T18-M4
A17-Cn2	Cellina di nardò			T18-B5
A17-Cn3	Cellina di nardò			T18-MA
A17-Cn4	Cellina di nardò			T18-LdC
A17-C1	Coratina			T18-B6
A17-C2	Coratina			T18-B7
A17-C3	Coratina			T18-B8
A17-P1	Peranzana			T18-B9
A17-P2	Peranzana			T18-B10
A17-B1	Blend			T18-B11
A17-B2	Blend			T18-B12
A17-B3	Blend			T18-B13
A17-P3	Peranzana			T18-B14
A17-P4	Peranzana			T18-B15
A17-C/O1	Coratina/Ogliarola			T18-B16
A17-C4	Coratina			T18-B17
A17-C/O2	Coratina/Ogliarola			T18-B18
A17-C/O3	Coratina/Ogliarola			T18-B19
A17-B4	Blend			T18-B20
A17-C5	Coratina			T18-B21
A17-B5	Blend			T18-B22
A17-C6	Coratina			T18-B23
A17-C7	Coratina			T18-B24
A17-O1	Ogliarola			T18-B25
A17-C8	Coratina			T18-B26
A17-B6	Blend			

## ***LA CHIMICA ...e le sue coniugazioni***

# **MOLECOLE VOLATILI E FENOLI**

**La tavola periodica**

**le lettere dell'alfabeto**

**Le molecole**

**le parole..per dirlo**



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# PERCHE' COMPOSTI FENOLICI E LA FRAZIONE VOLATILE (VOCS)

Sono i principali responsabili delle proprietà organolettiche e delle caratteristiche sensoriali di un olio extra vergine di oliva (EVOO)

I fenoli sono riconosciuti come determinanti per gli effetti protettivi dell'olio  
**EVOO, un Nutraceutico Naturale**



## COMPETiTIVE Project CeRA - sub tasks

IMPROVE METHODS  
FOR DETERMINING  
PHENOLS

*completed*

APPLY NEW  
HS-SPME-GC-MS METHOD  
FOR DETERMINING  
THE VOLATILE COMPONENTS

*completed*

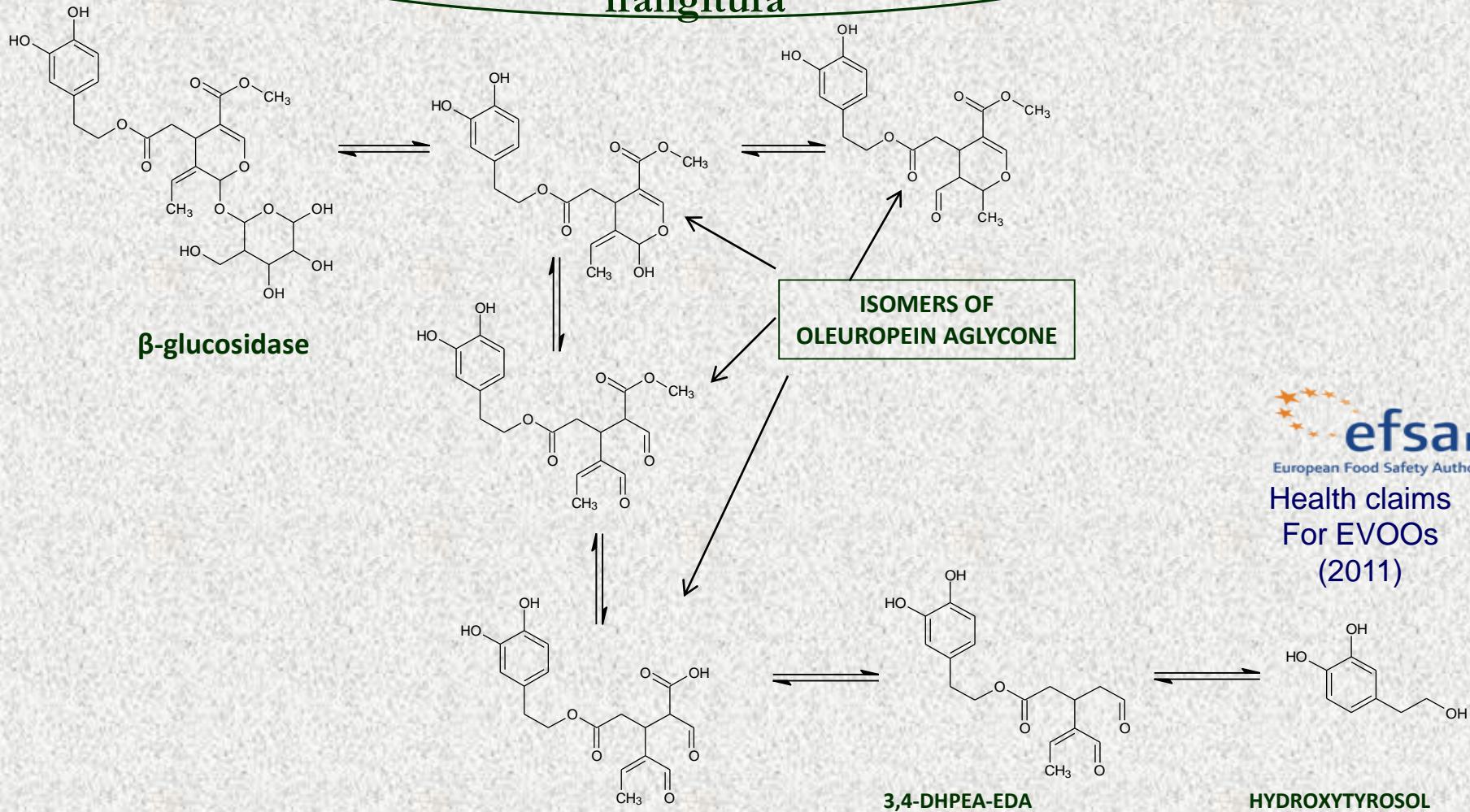
PREPARE CHARACTERIZED  
EXTRACTS FOR THE  
BIOLOGICAL TESTS  
(Caco2 cells and hepatic  
HepG2cells.-  
Prof.ssa A. Arnaldi e Dott.ssa  
Carmen Lammi, Univ. of Milan)

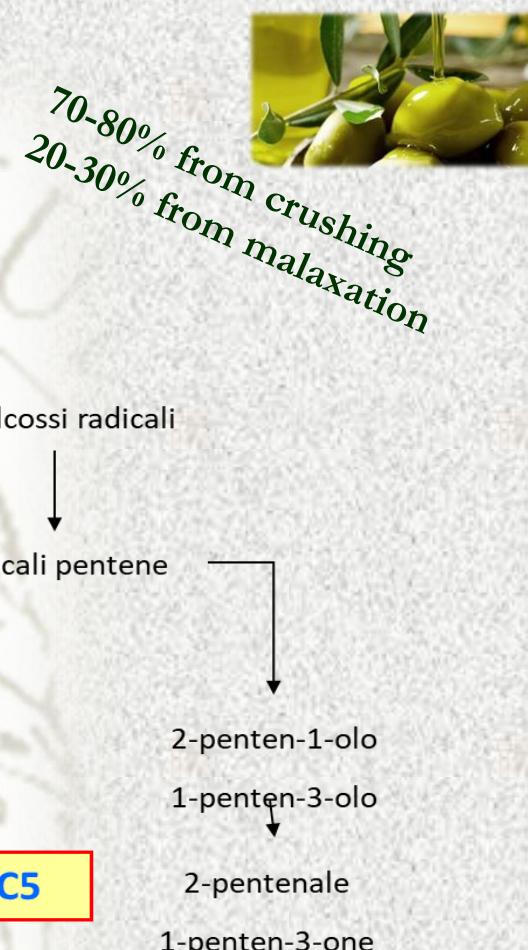
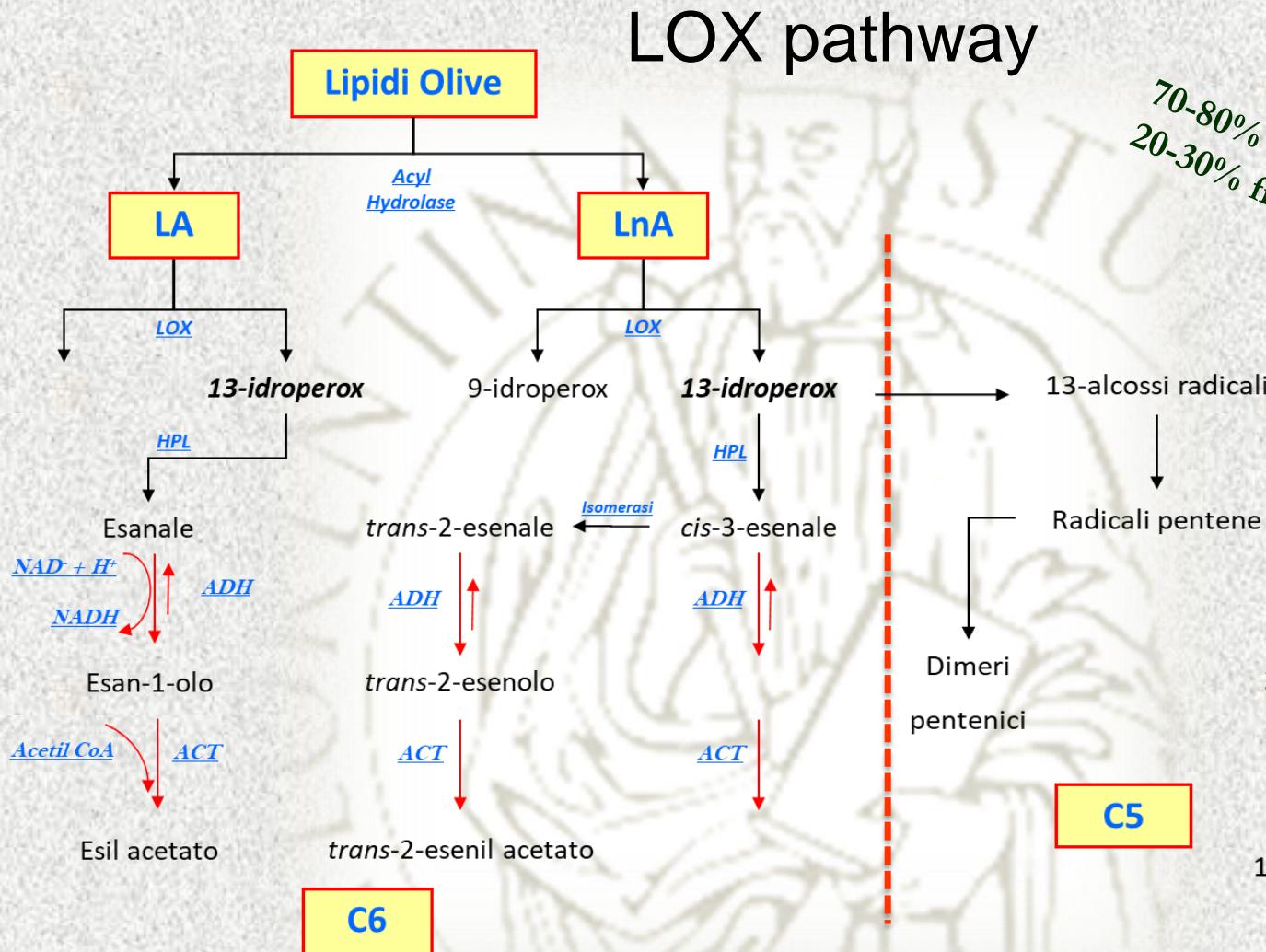
*completed*

TRYING TO IMPROVE THE  
CHROMATOGRAPHIC  
RESOLUTION IN HPLC  
(for secoiridoids and lignans)

*in progress*

## Oleuropeina durante la frangitura





**Fruity**



Set of olfactory sensations characteristic of the oil which depends on the variety and comes from sound, fresh olives, either ripe or unripe. It is perceived directly and/or through the back of the nose.



*molecules*



*Article*

# The EFSA Health Claim on Olive Oil Polyphenols: Acid Hydrolysis Validation and Total Hydroxytyrosol and Tyrosol Determination in Italian Virgin Olive Oils

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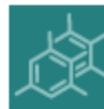
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*molecules*



*Article*

# Implementation of the Sono-Heat-Exchanger in the Extra Virgin Olive Oil Extraction Process: End-User Validation and Analytical Evaluation

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**Un GRAZIE ....**

**ai PRODUTTORI, agli APPASSIONATI agli STUDENTI**

*La didattica non è  
riempire un vaso, ma  
accendere un fuoco.*



Teofrasto Ereso, 371 a.C. – Atene, 287 a.C. filosofo e botanico, direttore del Liceo di Atene.



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