

Capacity development within the Greek Node of METROFOOD-RI regarding food processing. Challenges and opportunities for fermented food product reformulation



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The Greek Node of METROFOOD-RI provides the expertise and the services related to both the “Metro” and the “Food” side of the physical infrastructure. Particularly, considering the “Food” side, the facilities are related to primary production up to food and beverage processing and waste treatment. As a case study, this work is focused on capacity development within the Greek Node of METROFOOD-RI regarding food processing. The topic chosen is ‘food reformulation’, the sub-topic is ‘reformulation of fermented food products’ and the food for which capacity development is foreseen is ‘table olives’.

Food reformulation may be defined as the action of “reformulating existing foods to remove (e.g. *trans* fatty acids) or reduce (e.g. sugars, saturated fat, salt) certain food components while maintaining characteristics, such as flavour, texture and shelf life”.¹

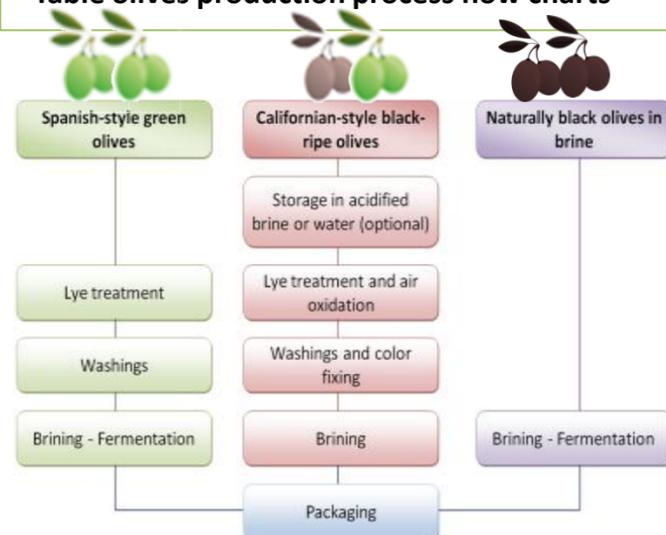
Food reformulation is not an easy task and needs to be developed product by product.

Reformulation of fermented foods, which account for approximately the 1/3 of all foods and beverages consumed, is not a straightforward process. The reason is that their manufacturing is strongly depended on **salt or sugar content**, which cannot be easily reduced. **Food microbiota** is the driving force in food fermentations. In any food microbial ecosystem, the surveillance and control of the balance, in favor of the technological and functional microbial members over the spoilage and pathogenic ones, guarantee **the quality, nutritional value and safety of the final product.**

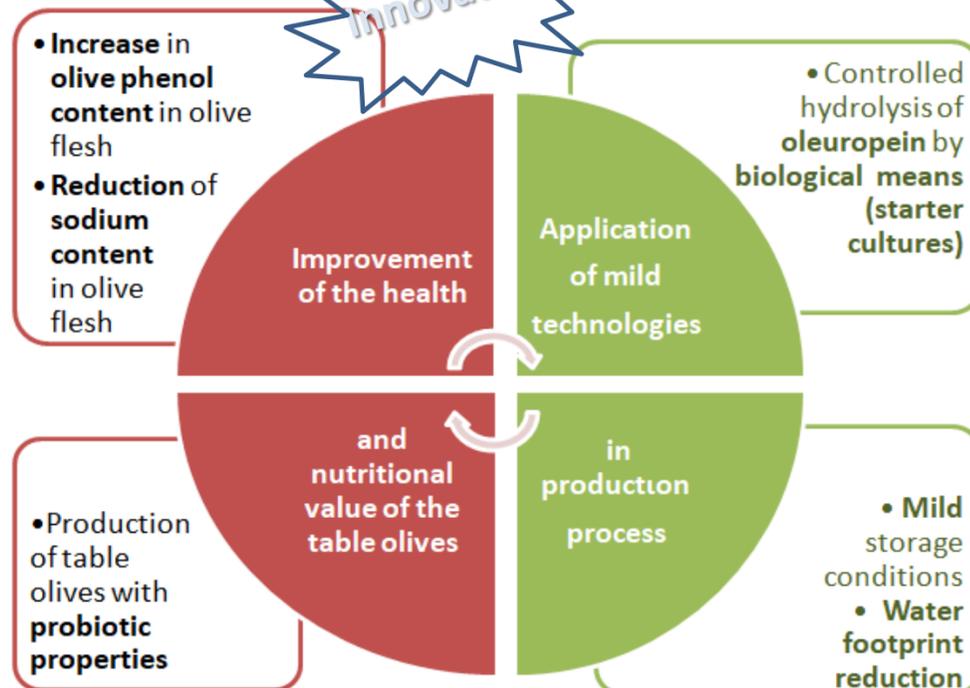
Challenges and Opportunities for Reformulation of Table Olives

“Table olives” is the product: (α) prepared from the sound fruits of varieties of the cultivated olive tree (*Olea europaea* L.) having reached appropriate degree of development for processing that are chosen for their production of olives whose volume, shape, flesh-to-stone ratio, fine flesh, taste, firmness and ease of detachment from the stone make them particularly suitable for processing; (b) treated to remove its bitterness and preserved by natural fermentation, and/or by heat treatment, and/or by other means so as to prevent spoilage and to ensure product stability in appropriate storage conditions with or without the addition of preservatives; (c) packed with or without a suitable liquid packing medium (CODEX STAN 66-1981).

Table olives production process flow charts



Duplication of table olive world production since 2000 (3.8 million tonnes). The EU member states cover the 31%. Of this, Spain, Italy, and Greece are the major producing ones (97% of the EU production).²



Achievement & Capacity Development within the Greek Node of METROFOOD-RI

AUTH

- Monitoring of safety, physical, chemical and nutritional parameters in the production line of Prasines Elies Chalkidikis P.D.O.³
- Sodium content reduction (50%) of Prasines Elies Chalkidikis P.D.O.⁴
- Third price for the reduced-salt table olive product “HALKIDLEAR” in the 6th ECOTROPHELIA Greek competition.

AUA

- Microbial community diversity elucidation of cv. Kalamata olives through 16S and ITS metataxonomic analysis
- “Microbial fingerprints” for geographical origin identification.⁵

HHF

- Food Consumption Data referring to the dietary habits of more than 4000 individuals from all 13 regions of Greece
- Database: “Composition Tables of Foods and Greek Dishes”

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- ✓ Integration of expertise for further research activities toward reformulation of specific commercial types of table olives and other products, too.
- ✓ Updating the existing Greek Food Composition Tables (GrFCT) with data for newly launched reformulated foods.
- ✓ Enhancement of links with the Greek table olive industry.
- ✓ Strengthening international links within METROFOOD RI on this topic.
- ✓ Communication with the International Olive Council about the need for new standards for the reformulated products.
- ✓ Consumer education activities about the nutritional properties of reformulated products.