

NEWSLETTER#2 November 2023



« Identification of Medicinal/Aromatic Plants (MAP) properties and improving quality, nutritive value, and storability of fresh and dry products to support SME competitiveness »

Opti-AromaQ



Opti-AromaQ – Project Overview

Opti-AromaQ aims at developing an innovation approach on nutritive value and increased postharvest storage of MAP in Cyprus by employing high tech (hydroponics, biofortification) and safe (natural sanitizers) and quality (added value products, drying conditions) approaches. The main objectives of the Opti-AromaQ project include: 1) the introduction into cultivation of new MAP and reduced the uncontrolled wild harvest, 2) the definition of optimum cultivation management (for example mineral levels) in order to produce high nutritive value produce for selected MAP species, 3) determination of the postharvest conditions (fresh and dry material) for the Cypriot MAP, in order to increase the storage time and maintaining the fresh produce quality, 4) the outline application strategies of essential oils for food safety and food shelf-life extension, 5) the establishment of Biofortification strategies on MAP in Cyprus, for high added- value products, 6) the establishment for the first time a methodology of EOs use for fresh produce preservation in Cyprus, 7) the demonstration and training/mobility for early stage researchers and professionals but also Packinghouse owners and herbal/cosmetics owners in MAP sector and essential oil usages, 8) engagement of relevant stakeholders/public to stimulate the development of a voluntary policy for MAP, 9) the transfer of knowledge (gained from laboratories and packing houses) to the sector and food-chain operators through training activities.

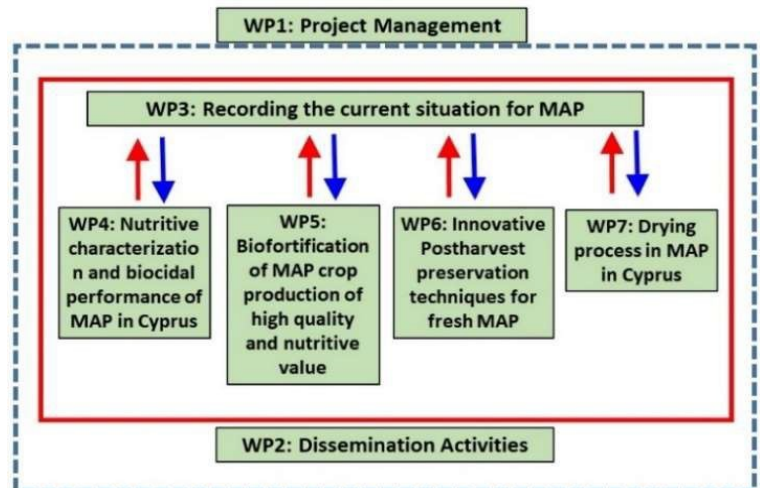


Figure 1. Opti-AromaQ Work Packages

Work description and key results

WP1 – The project management team led by the project coordinator (Dr. Nikos Tzortzakis) monitors the progress and facilitates the completion of the project actions, despite any problems that arise. **Scientific and stakeholders' committees** have been formed and functioning for the benefit of the project and according to project objectives.

WP2 – Dissemination activities and Networking

- ✓ Kick off meeting (28/6/2022) "Nutritive and medicinal value of MAP, marketing and opportunities" with 53 participants.
- ✓ Website/ <http://opti-aromaq.cut.ac.cy/>
- ✓ FB (Opti-AromaQ | Facebook) and Instagram (Opti-AromaQ (@optiaromaq) • Instagram photos and videos).
- ✓ First newsletter / Project Leaflet in GR and EN / Article for the public
- ✓ Banner / poster
- ✓ Dissemination at the VI International Symposium on Postharvest Pathology on 29 May-2 June, 2022, in Limassol, Cyprus.

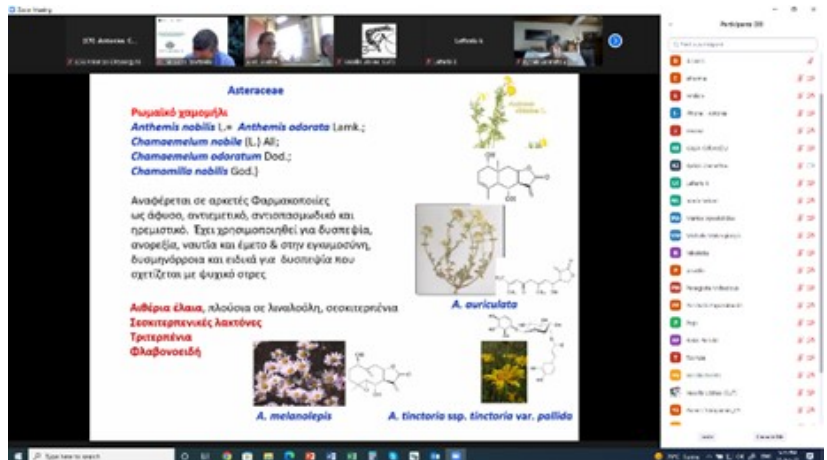


Figure 2. Screenshot from the kickoff meeting

Scientific publications: One scientific article has been published in a peer review journal (Open access, Biology IF:5.168), by Xylia et al. (2022) with the title "*Origanum dubium* (Cypriot Oregano) as a Promising Sanitizing Agent against *Salmonella enterica* and *Listeria monocytogenes* on Tomato and Cucumber Fruits", while 2 poster presentations have been illustrated during the VI International Symposium on Postharvest Pathology 29 May-2 June 2022, Limassol, Cyprus. (1) "Unexplored endemic species of medicinal and aromatic plants as a potential source of natural sanitisers and antioxidants: the case of *Sideritis cypria* Post." (by Chrysargyris et al.) and (2) "The effects of oregano, ironwort and sage herbs on the growth of common foodborne pathogens" (by Xylia et al.).

WP3 – Recording the current situation for the MAP sector.

- ✓ Both CUT and ANELEM collected relevant info (through literature reviews and surveys) and contributed to the deliverable regarding the definition of the MAP sector in Cyprus (cultivation areas, species, yield, etc.).
- ✓ The 3 specific questionnaires have been produced (farmer's cultivation practices, packagers/processors of MAPs, for the public sector) by ANELEM, have been distributed and data have been collected, analyzed and have been reported. The questionnaires were filled in by MAP farmers, processors/packers and public and municipal authorities.

WP4 – Nutritive characterization and biocidal performance of MAP in Cyprus

- ✓ Nutritive value characterization (N, P, K, Ca etc.)
- ✓ Antioxidant and biocidal properties (collaboration with FROs and partners – antimicrobial & anticancer activity)



Figure 3. The plantations of *S. cypria*, *O. dubium* and *T. capitatus* of the Department of Agriculture (Cyprus).



Figure 4. Plant parts of the material used for the analysis of WP4 (from left to right: *O. dubium*, *S. cypria*, *M. piperita*, *S. fruticosa*, *M. officinalis*, *T. capitatus*).

WP5 – Biofortification (hydroponics and field)

- ✓ The species that were selected for their characterization of appropriate nutrient levels in nutrient solution in hydroponics, after the evaluation of the first results of WP4.
- ✓ Field experiments are under progress in MCH GARDENS LTD.



Figure 5. Monitoring (partners) visit on the hydroponic experiments for WP5, during the second project management meeting.

WP6 and WP7. Innovative Postharvest preservation techniques (WP6) for fresh MAP and drying processes (WP7).

- ✓ Optimize storage conditions - the Task started with the evaluation of Melissa plants. Melissa (*Melissa officinalis*) plants were harvested and transferred to the laboratory in small bundles. Work under progress.
- ✓ The WP7 aims to establish the drying processes and effects on quality for MAP in Cyprus, which is undetermined with severe produce losses during storage and/or transportation. Designing of the work has been completed and experiments are under progress.





Opti-Aroma Q Participants:

- Cyprus University of Technology (CUT), Cyprus
- E.U.C. Research Centre Ltd (EUC), Cyprus
- M.CH.GARDENS LTD (GARDENS), Cyprus
- Development Agency of Limassol LTD (ANELEM LTD), Cyprus

Foreign Research Organization:

- University of Athens (UA), Greece
- University of Belgrade (UB), Serbia
- NCSR «DEMOKRITOS» (NCSR), Greece

Contact details:

Assoc. Prof. Nikolaos Tzortzakis
Department of Agricultural Sciences, Biotechnology and
Food Science, Cyprus University of Technology,
Arch. Kyprianos 30, 3036, Lemesos, Cyprus.
Tel: +357 25002280; E-mail:
nikolaos.tzortzakis@cut.ac.cy

You can follow us on the project website and social
media:

 <http://opti-aromaq.cut.ac.cy/>  [Opti-AromaQ](#)