

Utilization of the Genetic Resources of Chestnut Trees in the Mountainous Areas of Crete



Brief Description of the Project

The project aims to preserve and utilize chestnut varieties thriving in Crete's mountainous regions through innovative actions that combine genetic research, sustainable cultivation, and the development of new, high-nutritional and high-commercial value products.

Objectives and Mission

- Preserve the genetic diversity of Cretan chestnuts.
- Develop new chestnut-based products such as chestnut purée, chestnut flour and glazed chestnuts, which will be used as raw materials in baking and confectionary (e.g. baked goods, energy bars, and fermented products).
- Strengthen the local economy and support chestnut producers.
- Create a collaborative network between research institutions and businesses.
- Promote the Cretan chestnut as a PDO (Protected Designation of Origin) product.
- Ensure sustainable management of chestnut groves using modern biotechnological methods.

Scientific Team

Project Coordinator: Dr. Panagiotis Kalaitzis

MAICH Working Group:

- Dr. Konstantinos Blazakis – Morphological and Phenotypic Analysis
- Eleftheria Figgou – Genetic Analysis
- Maria Sampathianaki
- Evangelos Paspalas

Working Group of “Palea Roumata Agricultural Cooperative”

- Georgios Motakis
- Dimitrios Vakakis
- Ioannis Loufardakis

Working Group of “Mills of Crete S.A.”

- Dr. Anna Patsioura
- Emmanouil Kandirakis
- Georgios Koutrakis
- Georgios Chabas
- Nikolaos Chrysocherakis

Working Group of “Ennia Choria Company”

- Dr. Apostolos Kyritsakis
- Charalambos Annousakis

Project Activities

Genetic and Morphological Analysis & Highlighting of Local Varieties:

- Mapping and collection of genetic material from chestnut groves in Western Crete
- Genetic and morphological characterization and selection of resistant and productive clones
- Creation of mother plantations for conservation of the genetic material

Pilot Chestnut Planting:

- In Palea Roumata and Elos-Kissamos: site cleaning, planting, and protection with copper and beneficial bacteria

Development of Innovative Products:

- Production of chestnut purée and flour, glazed chestnuts, along with bakery and confectionary products derived from these raw materials.
- Development of bio-functional products

PILOT PROCESSING AND DEVELOPMENT OF PROCESSED CHESTNUT PRODUCTS ON A SMALL/LABORATORY SCALE

1st Round of Preliminary Trials:

- Scoring, boiling, and peeling (shell removal).

2nd Round of Preliminary Trials:

- Cracking, soaking, roasting, steeping, peeling, drying, and a second peeling phase.

CHESTNUT PROCESSING PROCEDURE ON A LARGE/INDUSTRIAL SCALE – PRODUCTION OF CHESTNUT PUREE, CHESTNUT FLOUR, AND GLAZED CHESTNUTS

- Chopping chestnuts in a pulper with the addition of water; at the end of the process, water is removed using a vacuum pump.

Phase A – Peeling:

- Agitation of chopped chestnuts to achieve mechanical shell separation.

Phase B – Peeling:

- Roasting followed by a second peeling stage.

Utilization of Chestnut Kernel:

- Production of glazed chestnuts (whole chestnuts)
- Production of chestnut purée (small/medium chestnut pieces)
- Production of chestnut flour (very small chestnut fragments)

Local Value Chain Development:

- Creation of a local cluster of producers, processors, and businesses
- Product promotion and branding as “Cretan Chestnut”

Networking & Producer Training:

- Training seminars and advisory support

Participating Organizations & Roles

Coordinator: CIHEAM-MAICh, Chania - Administrative coordination, genetic analysis, and dissemination

Palea Roumata Agricultural Cooperative - Provides samples, implements practices, participates in training

Mills of Crete S.A. - Develops processing methods, supplies products, participates in promotion

Ennia Choria Company of Kissamos - Packaging/marketing experience, supports PDO registration

Funding

The operational plan is being implemented within the framework of Measure 16 “Cooperation”, Sub-Measure 16.1-16.2 “Cooperation for environmental projects - Environmental practices and actions for climate change”, Action 2 of the Rural Development Programme of Greece 2014-2020.

Innovation

- Mapping of chestnut genetic resources
- New nutritional chestnut products
- “Cretan Chestnut” branding
- Biotechnology for preservation and disease resistance

Vision

To promote the Cretan chestnut as a unique agricultural product that contributes to the revitalization of mountain areas, biodiversity conservation, and the strengthening of the local economy and employment.

News & Events

Poster presentation at the “2nd RECROP Annual Meeting – COST Action CA22157 Climate-Proof Crop Reproduction: from lab to farm”, Thessaloniki, 13–15 May 2025, KEDEA-AUTH.

Contact

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**ΑΝΑΠΤΥΞΙΑΚΗ ΕΤΑΙΡΕΙΑ ΕΝΝΙΑ
ΧΩΡΙΩΝ ΚΙΣΣΑΜΟΥ Α.Ε.**



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης