

Introduction and Objectives

The Interior+ - Rural and Mountain Communities of the Interior” project aims to test solutions for the valorisation of endogenous resources, promoting sustainable production and innovation in the agri-food sector, with a particular focus on the involvement of young people and women farmers. The project also includes capacity building activities for SMEs, knowledge transfer, and the creation of a Virtual Research Environment (VRE) to serve as a forum for discussion and exchange between local stakeholders. The VRE collects monitoring data, promotes the identification of innovation opportunities and supports the transition to more sustainable territorial systems. Two experimental studies were conducted. The first focussed on the production of Arbutus unedo honey, including the selection of sites and producers, the installation of hive monitoring systems and the chemical assessment of honey quality. The second project focused on the production of mead from Arbutus unedo honey, starting with pilot formulations, followed by labelling and packaging tests, traceability and design validation, and concluding with the sensory evaluation of different target groups. This pilot combines scientific knowledge, technological innovation, and the involvement of local producers. Expected outcomes include new sustainable products, increased agri-food competitiveness, and a replicable territorial development model for rural and mountain areas, generating new products, strengthening the competitiveness of the agri-food, and enabling policies for sustainable transitions in low-population density areas. SDG 2 – Zero Hunger, SDG 8 – Decent Work and Economic Growth, SDG 9 – Industry, Innovation and Infrastructure, SDG 12 – Responsible Consumption and Production.

Keywords: Pilot project; Innovative solutions in the valorisation of endogenous resources; Medronho honey; Hydromel with medronho honey; Interior+

Methodology

The Interior+ pilot project, part of Action Line 7.5 of the “Interior+ – Rural and Mountain Communities of the Interior” initiative, aims to implement a territorial valorisation model based on sustainable production and agri-food innovation in rural mountain areas. The intervention focuses on two value chains associated with strategic endogenous resources: the strawberry tree (medronho) and honey.

The pilot is organised into two interconnected experimental studies:

Study 1 – Sustainable Production of Strawberry Tree Honey

This study aims to assess the technical, ecological, and economic feasibility of producing strawberry tree honey by combining traditional practices with advanced technology. It is structured in three phases:

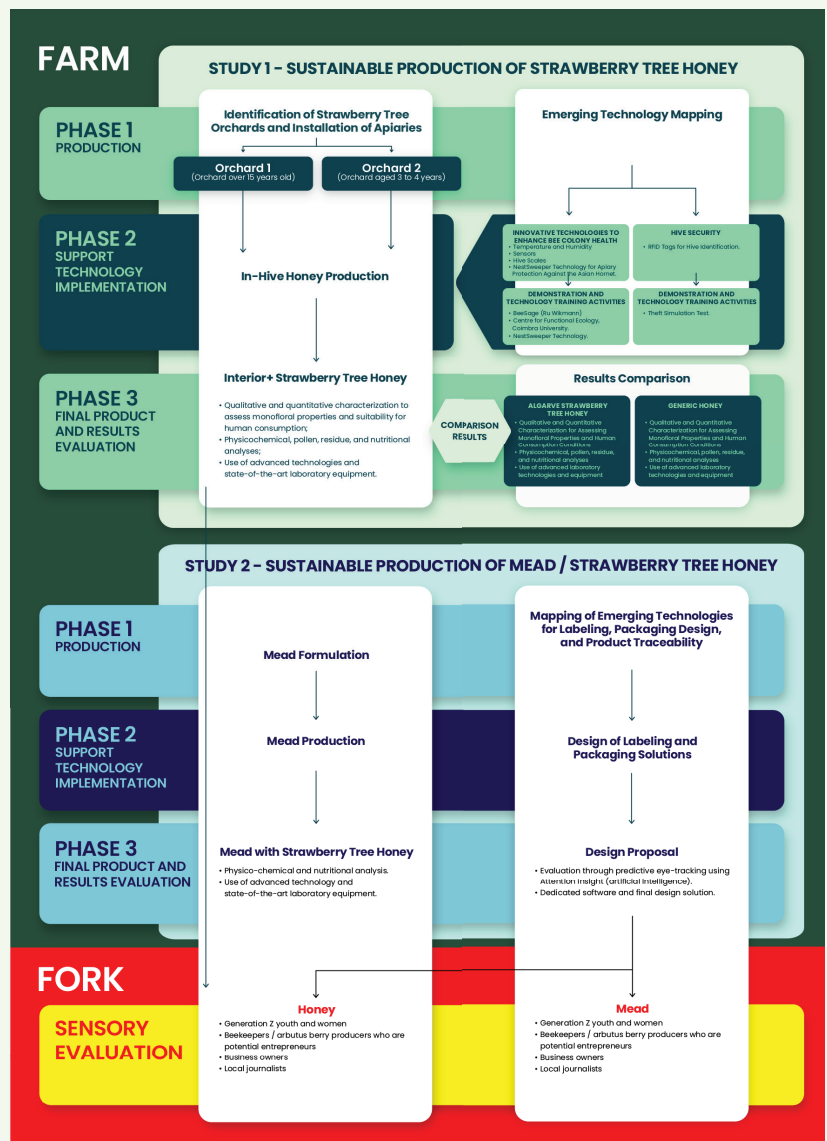
- Phase 1 – Selection and Planning: identification of resources (strawberry tree orchards and beekeepers), flora surveys, and definition of intervention sites.
- Phase 2 – Technological Monitoring: installation of equipment (hive scales, environmental sensors, RFID, Nest Sweeper system) for real-time data collection.
- Phase 3 – Validation and Quality: collection and laboratory analysis of honey samples (physico-chemical, pollen, and residue analyses), process validation, and definition of replicability criteria.

Study 2 – Sustainable Production of Mead from Strawberry Tree Honey

This study examines the transformation of strawberry tree honey into mead, thereby promoting product diversification and enhancing added value. It also unfolds in three phases:

- Phase 1 – Experimental Production: development of pilot-scale mead formulations using production technologies adapted to small-scale operations.
- Phase 2 – Innovation and Traceability: implementation of technologies for labelling, packaging, traceability, and design validation through eye-tracking tests and sensory analysis.
- Phase 3 – Consumer Validation: sensory testing with different target groups (young people, women farmers, beekeepers, consumers), gathering data on perceived quality, originality, and market potential.

This pilot contributes to the development of sustainable local food systems, with a focus on producer training, the application of emerging technologies, and the valorisation of endogenous products. The results are intended to be replicable in other low-density areas with similar conditions.



Conclusions

The Pilot Project developed under the Interior+ initiative has demonstrated that the valorisation of endogenous resources, combined with technological innovation, user-centred design, and the active involvement of local communities, offers an effective pathway for promoting sustainable development in mountain regions. The integration of technologies such as environmental sensors, artificial intelligence, and digital traceability systems proved both viable and functional in the production of strawberry tree honey and mead, contributing to improvements in efficiency, quality, and transparency across the value chain.

The project’s integrated innovation approach also included the development and testing of product design solutions—namely labelling, packaging, and visual identity—validated through tools such as eye tracking and sensory testing with different consumer profiles. This dimension stood out not only for its aesthetic value but, more importantly, for its ability to communicate product value, differentiate offerings in the market, and strengthen the connection between producers and consumers. The creation of the Virtual Research Environment (VRE) consolidated coordination among local stakeholders, fostering a collaborative network for territorial innovation.

In summary, the project confirms that it is possible to combine tradition, technology, and design to generate new economic and cultural dynamics in low-density areas. The model tested within Interior+ shows strong potential for replication in other regions with similar characteristics, serving as a reference for public policies aimed at sustainable transition, agri-food competitiveness, and the revitalisation of rural mountain territories.

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