

Diversification of edible wild mushroom cultivation with new native species

Summary

The project is led by Bolet Ben Fet (TEB Verd SCCL), and the members of the operational group are: Bolets de Soca (Tresseras Multimèdia SL), the Catalan Mycology Society, the Wood and Furniture Guild and the Institute of Agrifood Research and Technology (IRTA). The IRTA will act as a technological and research centre, and its team of Mycology researchers will be joined by two lecturers from the Department of Botany at the University of Barcelona (UB).

Wild mushroom cultivation is an excellent solution to meet the growing demand for their consumption, while at the same time preventing excessive pressure on the natural populations in our forests. However, most forest wild mushroom cultivation currently focuses on a few species that are primarily of Asian origin.

The main objective of the pilot project is to incorporate new species of lignicolous fungi, native to Catalonia, to diversify the cultivation and commercial production of edible wild mushrooms.

Various phases are planned to achieve this goal:

- Field prospecting and collection of specimens of various species of forest wild mushrooms.
- Isolation in pure culture and maintenance of a collection of strains of the fungal species collected.
- Adapt the production conditions of inoculum (seed) to each species of fungus.
- Adapt the most favourable cultivation conditions to each fungal species in order to obtain good wild mushroom production levels.
- Evaluate the organoleptic and nutritional characteristics of newly cultivated wild mushrooms.
- Transfer and disseminate the results to improve the productivity and competitiveness of the sector.

Objectives

Catalonia is a country with a strong mycological presence and tradition, but the cultivation of forest wild mushrooms focuses on a few species that are mostly of Asian origin. The incorporation of new species of lignicolous mushrooms, which are not currently cultivated, and are more closely linked to local traditions, would enhance the diversity and current supply of edible wild mushrooms. These new products would give local producers a competitive advantage and open up new opportunities for export.

The main objective of the project is to incorporate new species of lignicolous fungi, native to Catalonia, to diversify the cultivation and commercial production of edible wild mushrooms.

Description of the measures planned in the project

Task 1.- Gathering of wild mushrooms.

Task 2.- Isolation in pure culture.

Task 3.- Characterisation of the isolates obtained and identification of species of fungi.

Task 4.- Maintenance of a culture collection or bank.

Task 5.- Development of seed production methods.

Task 6.- Determination of the optimal cultivation conditions for each fungus.

Task 7.- Pilot production tests under industrial conditions.

Task 8.- Assessment of organoleptic characteristics and recovery of new products.

Expected results and practical recommendations

The anticipated contributions to be made by this project are aimed directly at creating new products. The objectives involve incorporating new species of lignicolous fungi, which are not currently cultivated, to diversify the cultivation and production of edible wild mushrooms. Achieving the goals proposed would yield new commercial products which would improve the competitiveness of wild mushroom growers.

This project will contribute to including new fungal species native to Catalonia in the range of cultivated edible wild mushrooms. This goal is aimed at increasing and diversifying the current range in the market, and orienting it towards new products with more local roots. In addition, the substrates used for the growth of these lignicolous fungi come from non-food forest and agricultural waste.

As a result, the project expects to modernise the current range, and improve the competitiveness and economic results of all those involved in the sector: in forestry (as the suppliers of cultivation substrates), and wild mushroom growers.

Finally, the incorporation of these species of fungi into an agronomic production system could reduce the pressure on natural populations due to collection, and reduce the environmental impact of this collection and its effects on biodiversity, thereby helping to preserve the role that these fungi play in the biogeochemical cycles in their ecosystems.

Incorporating new species in the cultivation of wild mushrooms, thereby diversifying the range of products, would boost Catalonia's edible wild mushroom growing sector by improving its productivity and competitiveness. However, it would not only affect this sector, but would also have effects on the forestry and timber sectors by providing a use for waste and by-products, and the restaurant sector, by providing new varieties of edible wild mushrooms with sufficient regularity and quality levels for inclusion on their menus.

Leader of the Operational Group

ORGANISATION: TEB VERD, SCCL

CONTACT E-MAIL: tebverd@teb.prg

Other members of the Operational Group (not recipients of the grant)

ORGANISATION: TRESSERAS MULTIMEDIA SL / BOLETS DE SOCA

CONTACT E-MAIL: info@boletsdesoca.com

ORGANISATION: CATALAN MYCOLOGY SOCIETY

CONTACT E-MAIL: josep.girbal@uab.cat

ORGANISATION: WOOD AND FURNITURE GUILD

CONTACT E-MAIL: salvador@gremifustaimoble.cat

ORGANISATION: IRTA

CONTACT E-MAIL: joan.pera@irta.cat

Subject area(s) of application

- Agricultural production system
- Agricultural practice
- Agricultural equipment and machinery
- Livestock farming and animal welfare
- Vegetable production and horticulture
- Landscape / Territorial management
- Pest and disease control
- Fertilisation and nutrient management
- Soil management
- Genetic resources
- Forestry

<input type="checkbox"/>	Water management
<input type="checkbox"/>	Climate and Climate Change
<input type="checkbox"/>	Energy management
<input type="checkbox"/>	Waste and by-product management
<input checked="" type="checkbox"/>	Biodiversity and environmental management
<input type="checkbox"/>	Food quality/processing and nutrition
<input type="checkbox"/>	Supply chain, marketing and consumption
<input checked="" type="checkbox"/>	Competitiveness and agricultural and forestry diversification
<input type="checkbox"/>	General

Geographical area(s) of application

PROVINCE(S)	REGION(S)
Barcelona, Tarragona, Lleida and Girona	

Dissemination of the project (publications, seminars, multimedia, etc.)

The Operational Group establishes a Communication and Dissemination Plan with the participation of all its members, which will focus on:

- Seminars organised within the annual technology transfer plan (PATT) of the Catalan Ministry of Agriculture, Livestock, Fisheries and Food.
- Information sheets for the sector through the dissemination channels of the Catalan Mycology Society, and the Wood and Furniture Guild.
- Publications in technical journals. Some members of the operational group have their own dissemination magazines for informing their partners, the sector and society in general.
- A project website will be launched.

Project website

<https://www.bolets.net>

More information on the project

PROJECT DATES	TOTAL BUDGET
Start date (month-year): July 2019	Total budget: €199,850.00
Completion date (month-year):	DARP funding: €79,740.15
Current status: Underway	EU funding: €60,154.85
	Own funding: €59,955.00

With funding from:

Project funded through Operation 16.01.01 (Cooperation for Innovation) through the Catalan Rural Development Programme 2014–2020. Order ARP/133/2017 of 21 June, approving the regulatory bases for grants for cooperation for innovation by promoting the creation of European Association for Innovation operational groups in the areas of agricultural productivity and sustainability and the execution of innovative pilot projects by those groups, and Resolution ARP/1282/2018, of 8 June, announcing the call for the grant.