Local circular bioeconomy: organic fertilisation on organic and conventional vines

Summary

The circular bioeconomy is the key to ensuring sustainable development in the agri-food sector, mitigating climate change and adapting production systems. In this regard, organic fertilisation has become an essential agricultural practice as, firstly, provides a use for renewable by-products from livestock farming and the agrifood industry, such as manure, where there is a surplus in certain areas, such as Osona. Use of such local biofertilisers also helps reduce the use of chemically synthesised fertilisers, which are non-renewable in origin, while their production produces a significant environmental footprint. Secondly, it contributes to increasing organic matter in soils, acting as a carbon sink, thus reducing the concentration of greenhouse gases in the atmosphere. It also improves soil characteristics through mechanisms such as increasing water retention capacity, thus creating agricultural systems, such as vineyards, that are more resilient to climate change, which is becoming increasingly present in our daily lives. In this regard, with the aim of increasing the use of organic fertilisers in our region, a number of actions can be implemented, such as publicising the benefits of organic fertilisation to all stakeholders, treating manure to give it suitable characteristics for a high-quality organic fertiliser, promoting new business models, improving the logistics of these products in the region and advising farmers on good organic fertilisation practices.

Objectives

The main objective of the project is to promote the circular bioeconomy in Catalonia by using livestock manure and other organic waste from the agrifood industry to improve the soil and productivity of Catalan vineyards.

The following specific objectives are proposed to achieve the general project objective satisfactorily:

a) Define the ideal parameters in the different treatments for recovering organic waste and by-products, including livestock manure, from the agro-livestock industry in order to obtain high quality organic fertilisers.
b) Characterise organic fertilisers suitable for conventional and organic production obtained from livestock manure and other organic waste and by-products from agro-industry.
c) On-site agronomic assessment of fertilisation with conventional and organic fertilisers vineyards.
d) Technical and economic feasibility analysis of creating a pilot technical advisory service on organic fertilisation to boost the circular bioeconomy of Catalan wine farms.
e) Technical, economic and environmental feasibility study of organic fertilisation in organic and conventional vineyards.

Description of the actions planned in the project

In order to achieve this objective, the proposal consists of seven different but interrelated activities:

- Activity 1: Project and consortium coordination.
- Activity 2: Assessing and monitoring bio-drying treatment of the solid fraction of pig slurry and evaporation treatment to concentrate the liquid fraction of the digestate from a biogas plant.
- Activity 3: Characterising conventional and organic fertilisers obtained from livestock manure and other organic by-products.

- Activity 4: On-site agronomic assessment of organic fertilisation with conventional and ecological products in vineyards.
- Activity 5: Technical and economic analysis of the creation of a pilot technical advisory service on organic fertilisation to boost the circular bioeconomy of Catalan agricultural and livestock farms.
- Activity 6: Technical, economic and environmental feasibility study of the project.
- Activity 7: Transfer and dissemination of the results.

Expected results and practical recommendations

The expected results are as follows:

- Result 1. Launching new organic fertilisers on the market, permitting recovery of organic waste and by-products and converting them into high-quality fertiliser products.
- Result 2. Obtaining and transferring all the new knowledge generated by the project on the contributions of organic fertilisation in crops and agricultural soil in order to promote this practice in the Catalan wine sector.
- Result 3. Effectiveness of conventional and organic fertilisation on organic matter development, nutrient release, soil water retention capacity, nutrient uptake by the plant and the effects on yield and the physical-chemical and sensory quality of the must.
- Result 4. A technical advisory service to increase organic fertilisation of excellence in the Catalan wine sector to make it more sustainable, resilient and competitive.

Leader of the Operational Group

ORGANISATION: JUVÉ Y CAMPS, SA

Coordinator of the Operational Group

ORGANISATION: INNOVI Association of Innovative Companies

Other members of the Operational Group (grant recipients)

ORGANISATION: SELECCIÓ DESEURAS, SL
ORGANISATION: GRANGES TERRAGRISA, SL
ORGANISATION: SANT MARTÍ - PENEDÈS SUPERIOR PLANT DEFENCE GROUP (ADV)

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

ORGANISATION: BALMES UNIVERSITY FOUNDATION (BETA TECHNOLOGICAL CENTRE)
ORGANISATION: CATALAN INSTITUTE OF VINES AND WINES
ORGANISATION: BETARA, SL
ORGANISATION: COOPERATIVA AGRÀRIA DE TORELLÓ, SCCL

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
- ☒ Water management
- ☐ Climate and Climate Change
- ☒ Energy management
- ☒ Waste and by-product management
- ☐ Biodiversity and environmental management
- ☐ Food quality/processing and nutrition
- ☐ Supply chain, marketing and consumption
- ☐ Competitiveness and agricultural and forestry diversification
- ☐ General

Geographical area(s) of application

PROVINCE(S)	REGION(S)
Barcelona	Osona, Alt Penedès

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

News related to the progress of the project will be posted on the INNOVI.cat website and disseminated on the social media of INNOVI and the cluster partners.

Project website

https://www.innovi.cat/bioeconomia-circular/

More information on the project

PROJECT DATES	TOTAL BUDGET
Starting date: July 2021	**Total budget:** €185,871.74
	DACC funding: €85,956.92
Current status: Under way	**EU funding:** €64,844.69
	Own funding: €35,070.13

With funding from:

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Order ARP/113/2021 of 20 May, 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 ACC/1660/2021, of 27 May, announcing the call for the grant.

Generalitat de Catalunya
Departament d'Acció Climàtica, Alimentació i Agenda Rural

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