

FERTICOOP-GO Innovations to adapt to the best available techniques (BAT) in the Catalan cooperative agricultural sector

Summary

Development of innovative tools for improved management of livestock manure and agricultural fertilisation, with an environmental approach within a collaborative framework, improving the agricultural management of slurry, to enhance the valorisation and the quality of the extensive crops produced.

Objectives

- Reduce GHG and ammonia emissions by optimising fertilisation and adopting measures in livestock manure management on farms.
- Find the BAT for application on farms and in the field other than those stipulated in the official guides.
- Achieve sustainable and precise manure and fertilisation management.
- Provide the cooperatives' technical advisory staff with the tools and knowledge they need to implement recommendations based on sustainability criteria.
- Valorise livestock manure by precise knowledge of its fertiliser content.
- Adapt the technological and digital tools available to the needs of advisory fertilisation specialists and environmental specialists in the livestock farming cooperatives participating.
- Provide comprehensive management and advice on fertilisation from specialist advisers.

Description of the measures planned in the project

Activity 1. Strategies to reduce the phosphorus (P) content of soil where livestock manure is applied.

Task 1.1. Demonstration plots for P reduction strategies in soil.

Task 1.2. Production of recommendations for agricultural measures to reduce phosphorus in the soil in different agricultural systems.

Activity 2. Testing and development of rapid methods to estimate the chemical fertility of agricultural soils in extensive crops.

Task 2.1. Gather information on existing field methodologies.

Task 2.2. Practical assessment of different methodologies.

Task 2.3. Recommend methodologies for application in different agricultural systems.

Activity 3. Digitalisation and integration of databases containing agricultural plots and their management by fertilisation recommendations.

- Task 3.1. Definition of the characteristics of the platform.
Task 3.2. Implementation of the platform.
Task 3.3. Integration with other tools commonly used by specialists.

Activity 4. Evaluation of biogas production in manure storage in flexible pools.

- Task 4.1. Warm period trial (spring-summer).
Task 4.2. Cold period trial (autumn-winter).

Activity 5. Assessment of ammonia and greenhouse gas emissions in the storage of manure and other fractions extracted from it.

- Task 5.1. Selection of emission control techniques and the types of slurry/fractions.
Task 5.2. Sampling and transportation of manure and fractions.
Task 5.3. Cold period trial.
Task 5.4. Warm period trial.

Activity 6. Evaluation of emissions from farms in the pig and poultry sector, and strategies to minimise them.

- Task 6.1. Selection of livestock farms.
Task 6.2. Monitoring of immissions.

Activity 7. Calculation of the final quality of the compost with different substrates and losses due to ammonia emissions.

Activity 8. Project management and coordination

Activity 9. Dissemination and transfer

Expected results and practical recommendations

In livestock farming, the manure will be valorised based on its fertilising capacity, making it a competitive and attractive product for agricultural use; in agriculture, there will be savings on mineral fertilisers due to the calculations of nitrogenous requirements, treatment systems and advisory tasks, and contributions can be optimised in double harvests. At the environmental level, nitrogenous contributions in crops will be rationalised with the consequent minimisation of nitrate losses due to leaching, and precise applications to the soil will minimise not only emissions but also unpleasant odours with the consequent positive social impact.

The project will work on plots with high levels of phosphorus (P) in order to determine the effect of applying different cultivation practices and doses of fertiliser on the soil's nutritional level. Various rapid testing systems will also be evaluated to provide data enabling accurate fertilisation, and work will take place simultaneously with IT platforms to enable the fertilisation advisor to obtain fast and reliable recommendations for fertilisation.

Various methods to reduce ammonia and greenhouse gas (GHG) emissions in farms and slurry pools will also be assessed for the application of best available techniques (BAT) in livestock farming. Finally, composting of

the solid fraction of slurry has been shown to be an effective means of valorisation, and work will be undertaken to assess the effect of different substrates on the end product.

Leader of the Operational Group

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CONTACT E-MAIL:

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, Lleida.	Osona, Pla d'Urgell, Garrigues, Bages.

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

Seminar-Webinar / Twitter: @RDIcoopagroCAT / website: www.fcac.coop

Project website

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More information on the project

PROJECT DATES	TOTAL BUDGET
Start date (month-year): July 2020	Total budget: €178,959.58
Completion date (month-year):	DARP funding: €73,137.06
Current status: underway	EU funding: €55,173.58
	Own funding: €50,648.94

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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/1531/2019, of 28 May, announcing the call for the grant.



Generalitat de Catalunya
**Departament d'Agricultura,
 Ramaderia, Pesca i Alimentació**



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