

Improving feeding autonomy in organic dairy farms by increasing the protein content of fodder (FARECOprotein)

Summary

This operational group was created with the aim of improving organic dairy farms through strategies to optimise the quality of the fodder obtained on the farms themselves, thus improving their autonomy and sustainability. The results from this operational group should enable livestock farmers to realign fodder production in their organic dairy farms to obtain products with a higher protein content. The group is headed by NUTREX PINSOS SL, a company that manufactures animal feed with a growing client portfolio of organic livestock farmers, which understands and considers the nutritional needs of each species for their correct development and well-being on livestock farms. The Institute of Agrifood Research and Technology (IRTA) aims to contribute to modernising, improving and promoting competitiveness and sustainable development in the agricultural, food, agroforestry, aquaculture and fisheries sectors. It therefore has considerable experience in technological research and development in the agrifood sector. MAS LA COROMINA is a farm in the Bas Valley, in La Garrotxa region, whose land covers approximately 90 hectares and whose activity includes arable and livestock farming, as well as the purchase, sale, marketing and distribution of its products. CAN TÀPIES is in Sant Antoni de Vilamajor, in El Vallès Oriental. It is a dairy cattle farm of approximately 45 hectares. Finally, GEDPRO has more than 30 years' experience in project management and will bring its expertise to the project.

Objectives

The main objective of the project is to improve the autonomy and sustainability of organic dairy farms by integrating strategies to increase the quality of the fodder obtained on these farms.

The following secondary objectives are proposed in order to achieve this goal:

- Obtain accurate environmental quantification to help in decision making to improve sustainability on farms.
- Determine the optimum harvesting time for different species, in terms of the agronomic optimum that guarantees a balance between quality and quantity of fodder.
- Promote farm protein autonomy by combining cereals and legumes.
- Improve the preservation of alfalfa silage by using commercial additives.
- Transfer the results for application in the relevant sector.

Description of the actions planned in the project

Five actions will be carried out to achieve the objectives of the project:

- **Activity 1:** Assessing the impact of protein availability on carbon and water footprints in organic dairy farms. The activity will run at Mas la Coromina and Can Tàpies. To execute this activity, questionnaires will be prepared to collect information from the farms. Information will then be collected from Mas la Coromina and Can Tàpies. Finally, the water and carbon footprints will be calculated and new scenarios simulated to determine variations in these parameters in relation to the amount of protein produced in fodder.
- **Activity 2:** Improving the protein content of winter forage by associating grasses and legumes. Firstly, variations in the fodder mixture quality in relation to time of use will be determined. Secondly, the production and quality of grass and leguminous forage crops will be assessed. Finally, demonstration plots will be planted with mixtures of the grass and legume species that have provided the best results at Mas la Coromina and Can Tàpies.

- **Activity 3:** Increasing the protein content of corn forage through association with legumes. The production and quality of corn and summer forage legume mixtures will be assessed. After the assessment, demonstration plots of corn and summer legume mixtures will be planted at Mas la Coromina and Can Tàpies.
- **Activity 4:** Improving alfalfa silage preservation. The characteristics will be assessed with the incorporation of additives to determine what provides the best results.
- **Activity 5:** Transferring results to the sector, based on two field trips and a workshop.

Expected results and practical recommendations

Activity 1. Obtaining data on each livestock farm to ascertain the water and carbon footprints.

Activity 2. Obtaining winter forage with a high protein content.

Activity 3. Obtaining forage with a higher protein content by combining corn and summer legumes.

Activity 4. Some of the additives tested provide better preservation results than the control treatment.

Activity 5. High number of attendees and representatives of the sector at the dissemination and transfer events.

Leader of the Operational Group

ORGANISATION: NUTREX PINSOS, SL

Coordinator of the Operational Group

ORGANISATION: GESTIÓ DE PROJECTES VALLBONA

Other members of the Operational Group (grant recipients)

ORGANISATION: MAS LA COROMINA, SL

ORGANISATION: CAN TAPIES, SL

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

ORGANISATION: IRTA - Institute of Agrifood Research and Technology

Subject area(s) of application

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Agricultural production system |
| <input checked="" type="checkbox"/> | Agricultural practice |
| <input type="checkbox"/> | Agricultural equipment and machinery |
| <input checked="" type="checkbox"/> | Livestock farming and animal welfare |
| <input checked="" type="checkbox"/> | Vegetable production and horticulture |
| <input type="checkbox"/> | Landscape / Territorial management |
| <input type="checkbox"/> | Pest and disease control |
| <input checked="" type="checkbox"/> | Fertilisation and nutrient management |
| <input checked="" type="checkbox"/> | Soil management |
| <input type="checkbox"/> | Genetic resources |
| <input type="checkbox"/> | 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 type="checkbox"/> | Biodiversity and environmental management |

<input checked="" 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)
Girona	Garrotxa
Barcelona	Vallès Oriental
Barcelona	Osona
Girona	Selva
Girona	Ripollès
Lleida	Alta Ribagorça
Lleida	Alt Urgell
Lleida	Pallars Sobirà
Lleida	Vall d'Aran
Girona/Lleida	Cerdanya
Lleida	Segrià
Lleida	Pla d'Urgell

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

The dissemination plan will be based on new developments and innovations from the project, for both the agricultural and livestock sector and scientific bodies. It will be supported by the publications and patents it generates. The target groups for dissemination will be:

Industrial sectors

The planned operational group is in the organic agrifood industry. In terms of dissemination, there is significant potential for knowledge transfer and application among crop and livestock farmers, so it is hoped the results can be applied to both the participating companies and other companies in the sector. Successfully meeting the project objectives will add value to farms and, indirectly, to the end product (organic cow milk), achieving a local quality cycle. Presentations of new developments and results from the project is planned for sector trade fairs, conventions and seminars, as well as on the media available to each participating companies (websites, conventions, personal mailings to clients, catalogues and commercial documentation, newsletters, etc.) in order to increase and multiply the scope of communication.

Technology and research centres in the scientific sector

Knowledge generated by the project will be shared with the scientific community through the publication of the project results in specialised journals. As a subcontracted research centre, the IRTA will actively participate in disseminating the results through the centre and the scientific-technological platforms in which it participates. Presentations at national and international conferences and congresses are also envisaged. The results will also be disseminated through the European Innovation Partnership and the public will be informed of the support obtained by the European Agricultural Fund for Rural Development (EAFRD) during the project implementation, by publishing it on the website of the companies and the research centre, giving a brief description of the operation, the project objectives and results, and highlighting the financial support of the European Union. In addition, if total public funding exceeds 10,000 euros, a minimum A3 size information panel on the operation, highlighting the financial support received from the European Union, will be put up at a point clearly visible to the public.

The following transfer actions are proposed:

Field trips

- Workshop on winter fodder crops in April 2023. Demonstrations of actions with winter cereal-legume combinations and the incidence of certain cultural practices to increase protein content, such as timing the mowing. The results from the assessment of carbon and water footprint on organic cow farms will also be disseminated.
- Summer fodder crops workshop in August 2022. The first results of corn with summer legumes mixtures will be presented.

Workshops

- Conference on feed autonomy in organic dairy farms. October - December 2023.

Project website

More information on the project

PROJECT DATES	TOTAL BUDGET
Starting date: July 2021	Total budget: €114,314.00
	DACC funding: €52,864.83
Current status: Under way	EU funding: €39,880.49
	Own funding: €21,568.68

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.

