

Deliverable

Project Acronym: FERTIMANURE

Project full name: Innovative nutrient recovery from secondary sources – Production of high-added value FERTIlisers from animal MANURE

Grant Agreement No. 862849

D7.4. EIP Practice Abstracts

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Duration in months	48
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Work package concerned	7
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Contributor(s)	ELO

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Document History

Date	Author	Action	Status
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June 18 th 2021	Rodrigo Arandi - Klee (GWIN)	2 nd draft revision	Draft
June 18 th 2021	Yael Brusca (UVIC)	3 rd draft revision	Draft
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June 24 th 2021	Marie-Christine Berger (ELO) and Jocelyn Pringle (ELO)	5 th draft revision	Draft
June 29 th 2021	Laia Llenas	Approved by UVIC	Approved by PC



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Preface

The FERTIMANURE project's main objective is to develop, integrate, test and validate innovative nutrient management strategies to efficiently recover mineral nutrients and other relevant products with agronomic value from animal manure, to finally obtain reliable and safe fertilisers that can compete in the European fertilisers market.

The aim of the EIP practice abstract is to ensure uptake by farmers by outlining the benefits and practical recommendations for the use of the produced BBF and TMF.

The resulting innovative knowledge and easily accessible end-user material from this project will feed into the EIP AGRI (The agricultural European Innovation Partnership) website for broad dissemination. The end-user material to be produced contains a substantial number of summaries for practitioners in the EIP common format ("practice abstracts"), including the characteristics of the project (e.g., contact details of partners, etc.). A full package of practice abstracts will be produced by FERTIMANURE, containing all the outcomes/recommendations which are ready for practice. A total target number of 12 practice abstracts is foreseen for the project, which are expected to be delivered in 3 different sets of 4 practice abstracts each: M18, M36 and M48. Therefore, this first version includes the first set of Practice Abstracts for the FERTIMANURE project.



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Summary

This document contains under WP7 “Dissemination and Communication” the first part of Task 7.4 *EIP Practice abstracts*. The aim of the EIP practice abstract is to ensure uptake by farmers by outlining the benefits and practical recommendations arising from FERTIMANURE project. This Deliverable presents all the information requested in the common Excel template provided by the EIP AGRI (The agricultural European Innovation Partnership) to submit Practice Abstracts.

The first four abstracts are included in this Deliverable, which is due to be submitted in Month 18. The topics selected for this first set are: (i) the objectives of the FERTIMANURE project, (ii) changes to the EU fertiliser regulation and how these will impact bio-based fertilisers, (iii) the activities of the FERTIMANURE on-farm pilots and (iv) the existing nutrient imbalances across Europe. Apart from the different content of the four practice abstracts, the document also presents the general project information to be completed in the EIP AGRI Excel template.



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List of Abbreviations

BBFs	Bio-based fertiliser
TMFs	Tailor-made fertiliser
EU	European Union



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1. Introduction

The FERTIMANURE project's main objective is to develop, integrate, test, and validate innovative nutrient management strategies to efficiently recover mineral nutrients and other relevant products with agronomic value from animal manure, to finally obtain reliable and safe fertilisers that can compete in the European fertilisers market.

This document contains under WP7 “Dissemination and Communication” the first part of Task 7.4 *EIP Practice abstracts*. The first four abstracts are included in this Deliverable, which are due to be submitted in Month 18. The topics selected include: the objectives of the FERTIMANURE project, changes to the EU fertiliser regulation and how these will impact bio-based fertilisers, the activities of the on-farm pilots and the existing nutrient imbalances across Europe.

This is the first version of the Practice Abstracts, so we have produced them in English because they still need to be approved by the European Commission. As soon as the Practice Abstracts are approved by the EU, they will be sent to the EIP-AGRI, as stated in the Excel file, and also, they will be translated to all consortium languages. It is important to mention that the information of the common format for interactive innovation projects, in Excel format, is presented in this deliverable by taking into account the mandatory and recommended fields.



2. EIP-AGRI Common format

Project Identification

Please indicate whether the information refers to a multi-actor project or a thematic network

Multi-actor project

Project Information

Project identifier (see INSTRUCTIONS)

2020H2020_862849_FERTIMANURE

Title of the project in native language
(*can be the language of the coordinator / one of the partners - otherwise repeat the title in English*)

Innovative nutrient recovery from secondary sources –
Production of high-added value FERTIlisers from animal
MANURE

Title of the project in English (*provide the project ACRONYM + short title within the characters limit*)

FERTIMANURE - Innovative nutrient recovery from
secondary sources – Production of high-added value
FERTIlisers from animal MANURE

Geographical location

Country (*of the coordinator*)

ES

Main geographical location (NUTS3)
(*of coordinator - for geolocalisation on map*)

ES511 - Barcelona

Editor of the text: person/organisation
responsible for delivering the text

European Landowners Organization

Project coordinator (lead-partner) according to the cooperation/consortium agreement:

Name	Fundacio Universitaria Balmes (UVic-UCC)
Address	Carrer Perot Rocaguinarda 17, VIC Barcelona 08500
E-mail	laia.llenas@uvic.cat
Telephone	0034 93 881 61 68

Project period:

start year (YYYY) 2020

end year (YYYY) 2023

Project status: ongoing (after selection of the project) or completed (after final payment)

Ongoing



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Main **funding source** (Rural development programme, H2020, or other EU, national/regional or private funds)

H2020

Total budget of the project (total costs - in euros)

8.394.170,75

Objective of the project in English: what problems/opportunities does the project address that are relevant for the practitioner/end-user, and how will they be solved? - (300-600 characters, word count – no spaces)

Develop, integrate, test and validate innovative Nutrient Management Strategies to efficiently recover mineral nutrients and other relevant products with agronomic value (organic amendments and biostimulants) from animal manure, to finally obtain reliable and safe fertilisers that can compete in the European fertilizers market.

Description of project activities in English: (max 600 characters, word count – no spaces): short summary highlighting main project activities.

The main project activities include setting up 5 on-farm experimental pilots, which have been designed to offer replicable, viable and sustainable solutions for valorising the main types of livestock wastes. These pilots will produce bio-based fertilisers which will further be used to create tailor-made fertilisers to compete with current synthetic fertilisers on the market.

Project Partners

	Name	Address	E-mail	Telephone	Type of partner
Project coordinator (lead partner) from <i>PROJECT INFORMATION</i>	Fundacio Universitaria Balmes (UVic-UCC)	Carrer Perot Rocaguinarda 17, VIC Barcelona 08500	laia.llenas@uvic.cat	+34938816168	Research institute
Project partner	Universiteit Gent (UGent)	SINT PIETERSNIEUWST RAAT 25, GENT9000, Belgium	erik.meers@ugent.be aurore.assaker@ugent.be	+3292645950	Research institute
Project partner	STICHTING WAGENINGEN RESEARCH (WENR)	DROEVENDAALSE STEEG 4, WAGENINGEN 6708 PB, Netherlands	oscar.schoumans@wur.nl	+31317486446	Research institute
Project partner	UNIVERSITA DEGLI STUDI DI MILANO (UMIL)	Via Festa Del Perdono 7, MILANO 20122	fabrizio.adani@unimi.it	+390250316545	Research institute



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	Name	Address	E-mail	Telephone	Type of partner
Project partner	ACONDICIONAMIENTO TARRASENSE ASSOCIACION (LEITAT)	CARRER DE LA INNOVACIO 2, TERRASSA 08225, Spain	aloveras@leitat.org	+34937882300	Research institute
Project partner	POLE GREENWIN (GWin)	RUE AUGUSTE PICCARD 20, GOSELIES 6041, Belgium	rodrigo.arandi@greenwin.be	+32470945425	SME
Project partner	European Landowners Organization (ELO)	RUE DE TREVES 67, BRUXELLES 1040, Belgium	legal@elo.org	+3222343000	NGO
Project partner	IPS KONZALTING DOO ZA POSLOVNE USLUGE (IPS)	DR. ANESTARCEVICA 66, SISAK GRAD SISAK 44000, Croatia	ams@ips-konzalting.hr	+385989953630	SME
Project partner	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTENFORSCHUNG E.V. (Fraunhofer)	HANSASTRASSE 27C, MUNCHEN 80686, Germany	juan.gutierrez@umsicht.fraunhofer.de	+499661908439	Research institute
Project partner	DORSET GREEN MACHINES BV (DORSET)	WEVERIJ 26, AALTEN 7122MS, Netherlands	e.haaring@dorset.nu	+31543475355	SME
Project partner	MAATSCHAP J.G EN J.A. PRINSEN (APF)	BORCULOSEWEG 42, HAARLO7273 SJ, Netherlands	arjan@groot-zevert.nl	+31651249107	SME
Project partner	ASSEMBLEE PERMANENTE DES CHAMBRES D'AGRICULTURE (APCA)	AVENUE GEORGE V 9, PARIS 8 75008, France	ka-ho.yim@apca.chambagri.fr	+33153571118	Other
Project partner	AGRARIA PLANA DE VIC I SECCIO DE CREDIT SCCL (CPV)	CARRETERA BARCELONA-PUIGCERDA KM 70.4, GURB BARCELONA 08503, Spain	gmuns@planadevic.cat	+34938852213	Other
Project partner	ALGAENERGY SA (ALGE)	AVENIDA DE EUROPA 19, ALCOBENDAS MADRID 28108, Spain	jmg@algaenergy.es	+34914902020	SME
Project partner	FERTINAGRO BIOTECH SL (FERT)	CALLE BERLIN POLIGONO LA PAZ185, TERUEL 44195, Spain	bego.arrufat@tervalis.com	+34978623077	Other
Project partner	RECH INNOV TRANSFERT TECHN MAT FERT ORG (RITMO)	37 RUEDE HERRLISHEIM, COLMAR 68000, France	laure.metzger@rhythmo.com	+33389804700	Research institute
Project partner	AGRIFUTUR SRL (AGRI)	VIA CAMPAGNOLE 8, ALFIANELLO 25020, Italy	roberto.kron-morelli@agrifutur.it	+390309934776	SME





	Name	Address	E-mail	Telephone	Type of partner
Project partner	DEPARTAMENT D'AGRICULTURA, RAMADERIA, PESCA I ALIMENTACIO (DARP)	GRAN VIA DE LES CORTS CATALANES 612-614, BARCELONA 08007, Spain	carlos.ortiz@gencat.cat	+34973220868	Other
Project partner	FERTILIZERS EUROPE (FertilizersEU)	AVENUE DES NERVIENS 9-31, BRUXELLES 1040, Belgium	tiffanie@fertilizerseurope.com	+322663315146	Other
Project partner	INSTITUTO NACIONAL DE TECNOLOGIA AGROPECUARIA (INTA)	Rivadavia 1439, BUENOS AIRES 1033, Argentina	crespo.diana@inta.gob.ar	+5411967932100	Research institute

Audiovisual material

Title/description (in English)	URL	Additional comments
FERTIMANURE project website	https://www.fertimanure.eu/en/	Main communication and dissemination channel of the project
FERTIMANURE explanatory video	https://www.fertimanure.eu/en/publication/consult/12	General video explaining the most important aspects of the FERTIMANURE project
FERTIMANURE leaflet	https://www.fertimanure.eu/en/publication/consult/6	Communication material that explains the what, mission and objectives, circular economy strategy, on-farm pilots, aims of the project, partners involved, contacts, EU funding phrases
FERTIMANURE region cards	https://www.fertimanure.eu/en/publication/consult/17	Compilation of data related to all the manure generation and management costs in Barcelona (Spain), Achterhoek (The Netherlands), Oberpfalz (Germany), Flanders (Belgium), Grand Est and Brittany (France) and Italy.
FERTIMANURE explanatory videos subtitles in all of the consortium languages	https://www.youtube.com/channel/UCQbTLK1UpW6pREsNwH_lv1Q	The videos will be published in the YouTube channel. All of them will be uploaded the 1st week of July at the latest - subtitles in Catalan, Croatian, Dutch, French, German and Italian.

Keywords

Keyword - category 1	Fertilisation and nutrients management
Keyword - category 2	Waste, by-products and residues management
Keyword - category 3	Agricultural production system



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Websites

Title/description	URL	Additional comments
FERTIMANURE official project website	http://fertimanure.eu	-

Links to other website(s) hosting information on the project (results) that are available after the project has ended, by preference using the existing local/regional/national communication channels that practitioners most often use.

Title/description	URL	Additional comments
Repositori Institucional de la UVIC	http://repositori.uvic.cat/handle/10854/6620	-



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3. EIP Practice abstract 1

Short title:

H2020 FERTIMANURE project objectives

Short summary for practitioners (in English):

FERTIMANURE (Innovative nutrient recovery from secondary sources - Production of high-added value FERTIlisers from animal MANURE) aims to develop, integrate, test and validate innovative nutrient management strategies to efficiently recover mineral nutrients and other relevant products with agronomic value from animal manure. This will create reliable and safe fertilisers that can compete in the European fertilisers market.

The main project results are:

- Developing and assessing innovative technological approaches for the production of homogeneous and standardised fertiliser products from organic origin (BBFs and TMFs) in a more sustainable way.
- Implementing 5 different on-farm experimental pilots in key EU countries for the livestock sector: Spain, France, Germany, The Netherlands, and Belgium.
- Develop new business models that are synergic with other economic sectors.

These results will be replicable in different contexts at EU level as well as internationally and therefore are expected to encourage new policies and initiatives in nutrient and manure management and have a direct impact on the EU Circular Economy Strategy.

PROJECT WEBSITE:

<https://www.fertimanure.eu>



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4. EIP Practice abstract 2

Short title:

Changes to the EU fertiliser regulation will allow for harmonization of criteria for BBFs across Member States

Short summary for practitioners (in English):

In the EU the 2003/2003 regulation will be repealed by the 2019/1009 regulation to allow harmonisation between Member States by having compliance criterion that sets out the safety and quality specifications required for a product to be on the free market. The new regulation will additionally cover products such as organic and organo-mineral fertilisers, soil improvers, inhibitors, plant biostimulants, growing media or blends which are not covered under the 2003/2003 regulation and allow them to be on the open market. The 2019/1009 regulation introduces limits for toxic contaminants such as cadmium. It is the first of its type developed within the Circular Economy Package of the European Commission and will allow for a high level of soil protection and reduce environmental and health related risks. The new regulation will provide manufacturers with the opportunity to modify their products to requirements to bear the CE mark and enter the open market. The alternative is that the products comply with only the national legislation and are restricted in terms of EU countries they can distribute the product to.

National legislations within the Member States cover fertiliser products which were not covered under the 2003/2003 regulation. The 2019/1009 regulation is intended to bridge the gaps between EU and national legislation. Whilst many Member States will continue to enforce their existing national legislation, the 2019/1009 regulation could reduce the need for additional national legislation and an increased harmonisation across the EU.

PROJECT WEBSITE:

<https://www.fertimanure.eu>



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5. EIP Practice abstract 3

Short title:

Innovative on-farm pilots to recover nutrients from manure

Short summary for practitioners (in English):

Livestock farms are mostly intense producers and therefore large amounts of manure by-products are created in these localised areas. Thus, this means that the available agricultural land for manure application is limited, leading to an excess of manure that cannot be used for local agriculture. Knowledge about the amounts of manure and nutrients generated through manure is crucial for evaluating valorisation strategies towards improved management. However, information on actual management practices of all flows is not easily accessible or tracked in some countries.

This is why FERTIMANURE has built and implemented five on-farm pilots using innovative technological approaches for valorisation of manure in Spain, France, Germany, The Netherlands and Belgium, which will be complemented by creating potential business models and exploitation plans. The analysis of nutrient flows between different components of the agro-ecosystem is a necessary first step in characterising each region and understanding the particular opportunities and challenges faced.

The on-farm pilots' activities have been specifically designed to offer replicable, viable and sustainable solutions for valorising the main types of livestock wastes: pig slurry, cattle manure, cattle slurry, and poultry manure. Starting in 2021, bio-based fertilisers will be efficiently produced at the five sites and these fertilisers will be directly used on-field or will be used to produce tailor-made fertilisers that could be more valuable to be exported in those regions where the nutrients are needed. The project therefore aims to recover nutrients and marketable bio-based and tailor-made fertilisers which can compete on the market with current synthetic fertilisers.

PROJECT WEBSITE:

<https://www.fertimanure.eu>



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6. EIP Practice abstract 4

Short title

Existing nutrient imbalances in European regions

Short summary for practitioners (in English):

The intensive animal husbandry industry creates regionalised nutrient hotspots, whereas local nutrient generation in animal manures exceeds local demand for organic fertilisers. Knowledge about the current nutrient imbalances in EU regions is essential to predict where the nutrients recovered in FERTIMANURE can contribute best to the long-term sustainability of agriculture through innovations in improved fertiliser products which can be competitive on the EU market and thus nutrients may be distributed more homogeneously, while also promoting the bioeconomy and reducing reliance on chemical fertilisers.

Nations such as the Netherlands and Spain have recently had an intensification of animal production, which has led to a high production of manure. This surplus of manure can cause environmental issues due to the emissions of nutrients. In Germany and France, there are considerable differences between regions of nutrient inputs from manure; the Northwest and Southeast regions of Germany have a large input of N and P from manure whereas the other regions have to apply mineral fertiliser to compensate for the lack of nitrogen and phosphorus from manure. The centre and north of France are more devoted to cereal and oil crop production. Agricultural land in northern regions of Belgium are mainly used for livestock production whereas cereal and industrial crop production is mostly found in the South of the country; therefore, the northern regions are characterised by a higher input of nutrients from animal sources.

FERTIMANURE's study on the nutrient imbalances shows that animal manure can sustain N and P requirements in most of the FERTIMANURE countries, whereas Germany is the only country where mineral fertiliser input is needed in all its regions. This indicates the necessity to transform N and P from animal manure sources into bio-based fertilisers that can be distributed more homogeneously across EU regions and countries.

PROJECT WEBSITE:

<https://www.fertimanure.eu>



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7. Conclusions

The deliverable includes the first four EIP Practice abstracts under Task 7.4 for the FERTIMANURE project. Each abstract gives light to project objectives, activities, regulations affecting project activities and knowledge about current nutrient imbalances across Europe. At the same time, they outline the benefits and practical recommendations for the use of bio-based and tailor-made fertilisers to ensure the uptake by farmers. 8 additional practice abstracts will be produced during M36 and M48.



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FERTIMANURE

INNOVATIVE NUTRIENT RECOVERY FROM SECONDARY SOURCES-PRODUCTION OF HIGH-ADDED VALUE FERTILISERS FROM ANIMAL MANURE

PROJECT COORDINATOR

Fundació Universitària Balmes (Spain)

CONSORTIUM

Ghent University (Belgium)
Wageningen Environmental Research (The Netherlands)
University of Milan (Italy)
Leitat (Spain)
GreenWin (Belgium)
European Landowners Organisation (Belgium)
IPS Konzalting (Croatia)
Fraunhofer (Germany)
Dorset Green Machines (The Netherlands)
Prinsen Dairy Company (The Netherlands)
French Chamber of Agriculture (France)
Cooperativa Plana de Vic (Spain)
AlgaEnergy S.A. (Spain)
Fertinagro Biotech (Spain)
RITTMO Agroenvironnement (France)
Agrifutur (Italy)
Departament d'Agricultura, Ramaderia, Pesca i Alimentació (Spain)
Fertilizers Europe (Belgium)
Instituto Nacional de Tecnología Agropecuaria (Argentina)

PROJECT WEBSITE:

<https://www.fertimanure.eu>



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