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Optimisation of early reproductive success in dairy cattle through the definition of new traits and improved reproductive biotechnology

Fact Sheet

Project Information

FECUND

Grant agreement ID: 312097

Project closed

Start date
1 February 2013

End date
31 January 2017



Funded under
Specific Programme "Cooperation": Food,
Agriculture and Biotechnology

Total cost
€ 3 912 649,30

EU contribution
€ 2 999 393,00

Coordinated by
Fondazione Parco Tecnologico
Padano
 Italy

This project is featured in...



Exploiting opportunities and addressing the challenges of biotech in the Agri-Food sector

Objective

Good fertility is essential for the sustainability of livestock production. Of all livestock sectors, fertility of dairy cattle is raising the greatest cause for concern. Cow fertility has declined, particularly in Holstein cattle, from 80% pregnancy to first service 20 years ago to less than 40% today. Poor fertility is one of the main reasons for early culling, such that modern dairy cows complete fewer than 3 lactations, on average. The FECUND project will address the metabolic and genetic causes of low reproductive success of dairy cows in an interdisciplinary approach that will integrate in vivo and in vitro studies, biology, physiology, -omics technologies and bioinformatics. FECUND will focus on the early phases of reproduction from oocyte development to implantation of the conceptus. Starting from biological materials produced from high and low genetic merit cattle and from cows under energy stress of early lactation vs dry cows and heifers, FECUND will study, independently, the effects of genetics and metabolic stress on reproductive physiology to identify factors and early markers associated with high and low developmental potential, and with positive mother-conceptus interaction during the early stages of reproduction. These data will be mined to reveal physiological pathways and key candidate genes controlling variations of fertility. The biological knowledge created on early reproductive events in vivo will be validated in vitro, and extended to create further knowledge on the effects of the local environment on oocyte and embryo programming at the epigenetic level. Validated information will be used to improve herd management, gene assisted and genomic selection and assisted reproductive technologies, from in vitro oocyte maturation to optimised embryo culture. Information on biomarkers, indicator traits and improvements in assisted reproduction will be translated to applications that can be immediately implemented by SMEs.

Fields of science (EuroSciVoc)

[agricultural sciences](#) > [animal and dairy science](#) > [dairy](#)

[social sciences](#) > [sociology](#) > [demography](#) > **[fertility](#)**

[medical and health sciences](#) > [basic medicine](#) > **[physiology](#)**

[agricultural sciences](#) > [animal and dairy science](#) > [domestic animals](#) > **[animal husbandry](#)**

[medical and health sciences](#) > [clinical medicine](#) > **[embryology](#)**



Programme(s)

[FP7-KBBE - Specific Programme "Cooperation": Food, Agriculture and Biotechnology](#)

Topic(s)

[KBBE.2012.1.3-04 - Optimised terrestrial farm animal reproduction systems and/or technologies](#)

Call for proposal

FP7-KBBE-2012-6-singlestage

[See other projects for this call](#)

Funding Scheme

[CP-TP - Collaborative Project targeted to a special group \(such as SMEs\)](#)

Coordinator



Fondazione Parco Tecnologico Padano

EU contribution

€ 746 552,20

Total cost

No data

Address

Via Einstein - Loc. Cascina Codazza

26900 Lodi

 **Italy** 

Region

Activity type

Research Organisations

Links

- [Contact the organisation](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Participants (12)



LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN

Germany

EU contribution

€ 301 932,50

Address

GESCHWISTER SCHOLL PLATZ 1
80539 MUNCHEN

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE,
L'ALIMENTATION ET L'ENVIRONNEMENT

France

EU contribution

€ 264 750,80

Address

147 RUE DE L'UNIVERSITE
75007 Paris 

Region
Ile-de-France > Ile-de-France > Paris

Activity type
Research Organisations

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN

 Ireland
EU contribution
€ 485 200,00

Address
BELFIELD
4 Dublin 

Region
Ireland > Eastern and Midland > Dublin

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



VETERINAERMEDIZINISCHE UNIVERSITAET WIEN

 Austria
EU contribution

€ 248 280,00

Address

Veterinaerplatz 1
1210 Wien 

Region

Ostösterreich > Wien > Wien

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



INSTYTUT GENETYKI I BIOTECHNOLOGII ZWIERZAT POLSKIEJ AKADEMII NAUK

 Poland

EU contribution

€ 210 000,00

Address

JASTRZEBIEC, UL. POSTEPU 36A
05-552 MAGDALENKA 

Region

Makroregion województwo mazowieckie > Warszawski stołeczny > Warszawski zachodni

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AVANTEA SRL



EU contribution

€ 285 000,00

Address

VIA PORCELLASCO 7 F
26100 CREMONA

Region

Nord-Ovest > Lombardia > Cremona

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



BAYERN GENETIK GMBH



EU contribution

No data

Address

GUT ALTENBACH
84036 LANDSHUT

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



NATIONAL CATTLE BREEDING CENTRE LIMITED

 Ireland

EU contribution

€ 20 040,00

Address

KILCORNEY

Enfield 

Region

Ireland > Eastern and Midland > Mid-East

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



ELIANCE

 France

EU contribution

€ 288 037,50

Address

149 RUE DE BERCY

75595 Paris 

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



OSRODEK HODOWLI ZARODOWEJ OSIECINYSZ ZOO

 Poland

EU contribution

No data

Address

UL WLOCLAWSKA 2

88 220 OSIECIN 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



EUROPEAN FORUM OF FARM ANIMAL BREEDERS

 Netherlands

EU contribution

€ 49 600,00

Address

SILKEBORG 75

2905 AT Capelle Aan Den IJssel 

Activity type

Other

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



UNIVERSITA CATTOLICA DEL SACRO CUORE

 Italy

EU contribution

€ 100 000,00

Address

LARGO GEMELLI 1

20123 Milano 

Region

Nord-Ovest > Lombardia > Milano

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

Last update: 2 August 2019

Permalink: <https://cordis.europa.eu/project/id/312097>

European Union, 2025