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

Dal 2013-02-01 al 2017-01-31, progetto concluso

Dettagli del progetto

| Costo totale: | EUR 3 912 649,30 |
| Argomento (i): | KBBE.2012.1.3-04 - Optimised terrestrial farm animal reproduction systems and/or technologies |
| Contributo UE: | EUR 2 999 393 |
| Meccanismo di finanziamento: | CP-TP - Collaborative Project targeted to a special group (such as SMEs) |
| Coordinato in: | Italy |

Obiettivo

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 ooctye 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.

Informazioni correlate

| Results Packs | Exploiting opportunities and addressing the challenges of biotech in the Agri-Food sector |
| Sintesi delle relazioni | Final Report Summary - FECUND (Optimisation of early reproductive success in dairy cattle through the definition of new traits and improved reproductive biotechnology) |
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**Contributo UE:** EUR 746,552,20

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Ultimo aggiornamento 2019-08-02
Recuperato il 2019-09-08

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