

6-month internship:
Impact of the historic evolution of breeding goals on trade-offs
between production and robustness

Context

The Animal Breeding Department of the French Livestock Institute (IDELE) is involved in R&D projects aimed at managing genetic resources and at improving genetic abilities of ruminants on traits answering farmer's needs, environmental challenges and societal demands (efficiency, product quality, animal health and welfare, robustness...).

In cattle, these projects are conducted within the Joint Technology Unit eBis (UMT eBis), which associates the G2B INRAE team (Bovine Genetics & Genomics), IDELE and Allice.

One of the challenges of animal breeding is the balance between traits genetically negatively correlated, such as production and fertility or health. Managing trade-offs is one of the topics of RUMIGEN, a European project involving the UMT eBis. This project aims at improving genomic breeding schemes combining knowledge from quantitative genetics, epigenetics and new breeding techniques. Its ambition is to work towards more sustainable and socially acceptable breeding programs, in order to meet public concerns about animal welfare and the environmental impact of livestock, while addressing topics relevant to breeding schemes, such as management of genetic diversity and livestock adaptation to climate change.

Objective

The objective of this M2 internship is to assess the impact of the historic changes in breeding goals and of the implementation of genomic selection on the trade-off between production and robustness (fertility as a first step). More specifically, the main task will be to estimate genetic correlations between the aforementioned traits across generations in order to evaluate their evolution over time. The study will be conducted using the existing pedigrees and phenotypes of dairy cattle breeds.

This work will be carried out under a joint supervision IDELE – INRAE.

Desired profile :

- Master 2 / MSc Engineering student
- Interest in genetics and statistics
- Good level in English

General information

- Starting date : From January – March 2022
- Location : Domaine de Vilvert, Jouy-en-Josas (78)

Contact

- Beatriz Cuyabano : beatriz.castro-dias-cuyabano@inrae.fr
- Sophie Aguerre : sophie.aguerre@idele.fr
- Sophie Mattalia : sophie.mattalia@idele.fr