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Nationality: Mexico

Date of birth: 07/01/1995

Place of birth: Zacatecas (Zac), Mexico

Education:

- PhD student in Animal and Food Science (2022-)
- Master's Degree in Animal Genetics and Breeding, and Reproductive Biotechnology (2020-2022)
- Veterinary Medicine and Zootechnics Science Degree (2014-2019)

Research areas:

- Animal breeding
- Sustainability of livestock production
- Infrared spectroscopy technology

Brief description of PhD project:

The development and evolution of genetic improvement in recent years, especially since the beginning of the era of animal genomics (2006), branches derived from genomics (omics) have been studied and implemented in production systems. This has also been made possible by the advancement of technology and its cheapening.

One of these emerging research disciplines is 'phenomics', which involves, among other things, the identification of novel and difficult-to-measure traits using cutting-

edge technologies, such as wearable sensors and the infrared spectrometry tools for the assessment of animal health as well as the quality of milk and derived products.

These novel phenotypes can be used for multiple purposes, such as decision making for farmers at the field level and for selective breeding. Furthermore, based on these traits and the use of statistical models such as Bayesian and Markov chain Monte Carlo methods, we can predict critical future events in the productive life of dairy cattle. These predictions can be manipulated and automated with the use of machine learning.

The development and implementation of this research would offer a tool that could be used at all levels of production, from the farm to the selection nucleus. Furthermore, this knowledge could be extrapolated to other production systems, with other traits and objectives but using common methodologies.

Supervisor: Alessio Cecchinato

Publications: Google scholar link

<https://scholar.google.com/citations?user=mjpAKIUAAAAJ&hl=en>