

Family name: Bisello

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Nationality: Italian

Date of birth: 27/10/1997

Place of birth: Padova (PD)



Education:

- PhD student in Animal and Food Science UNIPD (2023 -)
- Master degree in Animal Science and Teconology (STAN) UNIPD (2021-2023)
- Batchelor degree in Animal Science and Technology (STAN) UNIPD (2017-2021)

Research Area:

- Animal feeding and nutrition
- Management of nutrition
- Production performance and efficiency of cattle
- *in vitro* rumen digestibility
- Environmental sustainability of livestock
- NIR analysis

Brief description of Ph.D project:

The project aims to develop NIR calibrations for estimating the degradability of fiber (NDFd) and starch in fibrous foods, including alfalfa hay, corn silage, grass silage, and winter cereal silage. The study involves the analysis of 200 samples for each class, following appropriate treatments such as drying and grinding, using various NIRS instruments owned by UNIPD and Cortal Extrasoy S.p.A.

Simultaneously, a portion of the samples undergoes anaerobic *in vitro* incubation using the Goering and Van Soest (1970) and Raffrenato et al. (2018) methods to assess the kinetics of fiber and starch degradation at different time intervals (12, 30, 120, 240 hours) according to Raffrenato et al. (2019). The obtained data, including spectra and degradation data, are adjusted for various variables to obtain precise analytical characteristics.

Subsequently, calibration curves are developed through Partial Least Squares Regression (PLSR), which will be tested with R2CAL and R2VAL. The accuracy of the predictions is then tested by UNIPD and Cortal Extrasoy S.p.A

Supervisor:

Dott. Emiliano Raffrenato

Co-Supervisor:

Prof. Lucia Bailoni

Pubblication:

<https://www.researchgate.net/profile/Jacopo-Bisello>