RÉPUBLIQUE FRANÇAISE
Liberté
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INRAE VetAgro Sup


Herbivores Joint Research Unit

Direction
Anne Ferlay, head

Staff
- 113 tenured staff including 74 scientists
- 80 non-tenured staff per year including 19 PhD students and postdoctoral fellows

Productions
- 136 scientific papers / year
- Decision support tools: INR@tion, Prev@alim, JB-Box®, WAFA...
- 2 journals: *animal*, Inrae Productions Animales
- 5 patents filed

Keywords
- Herbivores – Nutrition – Efficiency
- Welfare – Adaptation – Robustness
- Meat and dairy products quality
- GHG – Farming systems
- Agroecology

INRAE scientific divisions
- Animal Physiology and livestock Systems
- Social Sciences, Agriculture and Food, Rural Development and Environment

A unit rich in diversity

Set up in 2012, the UMR Herbivores is a joint research unit between:
- The French National Research Institute for Agriculture, Food and Environment (INRAE)
- The Institute of Higher Education and Research in Food, Animal Health, Agroscience and the Environment (VetAgro Sup).

We conduct research on cattle and sheep, and their production systems in the context of climatic hazards and global warming. We mobilise our strong expertise on feeds value, quality of meat and dairy products, animal welfare and metane emissions to address:
- Efficiency of animals and systems, with studies aiming at characterising the determinants of efficiency at the animal, farm and (agro ecological) system levels,
- Construction, evaluation and prediction of sensory and nutritional qualities of meat, milk and cheese, with studies on extrinsic and intrinsic determinants as well as biomarkers of qualities,
- Adaptive capacities and robustness, with studies on the determinants of robustness, the trade-offs between functions, and the levers for improving welfare,
- Environmental impacts and services due to livestock, with studies to characterise and evaluate the ecosystem services used and provided by livestock systems and their environmental impacts (greenhouse gases and nitrogen wastes).

Various approaches and frameworks are used. We combine experiments on animals, use of databases (especially for integrative biology or for meta-analyses), modelling (of a function, a farming system, or an evaluation), system experiments, or follow-up of commercial farms (organic farms as well conventional ones).
To design innovative sustainable agroecosystems, we explore:
- Agroecology, to integrate natural processes in the design of productive and balanced systems,
- Precision livestock farming to closely manage farms and avoid wastes,
- Private-public partnerships to foster innovation.

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Up-to-date equipment at our disposal

- Equipment to measure methane emissions (SF6 method, respiration chambers, GreenFeed©), to analyse nutrients and metabolites (fatty acids, vitamins, metabolites…); *in vitro* equipment (cell cultures, rumen fermentors),
- Workshops for the preparation of biological samples, the determination of nutritive value of feedstuffs, Near Infra-Red Spectrophotometry (NIRS), and analyses of animal behaviour,
- Access to the platform for the Exploration of Metabolism: from genes to metabolites-metabolomics, proteomics, transcriptomics,
- Access to the INRAE Herbipole (Low montain ruminant experimental facility.

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DIRECTION

A. Ferlay
Head

G. Cantalapiedra
Deputy head scientific

Yannick Faulconnier
Deputy head operational

C. Ginane
Deputy head human resources

C. Chassaing
Deputy head
Relationship with VetAgro Sup

ORGANISATION

M. Bonnet

Genome

BIOMARKERS
Biomarkers of performances, Adaptation and product quality
Functioning and plasticity of tissues

Tissues

Aliment

P. Nozière

DINAMIC
Feed, digestion, microbes, metabolism and nutrition
Digestive processes and impacts

Animal

R. Lardy

CARAIBE
Behaviour, health, and welfare
Integrative management of herbivores welfare and health

Herd

C. Mosnier

STARQ
Farming systems
Agroecological transition, Resilience and product Quality

Farming system

C. Dézandre

PIGALE
Administration and IT Team

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