Re-Livestock

RESILIENT FARMING SYSTEMS

Introduction & overview

Birgit Gredler-Grandl

WAGENINGEN UNIVERSITY & RESEARCH

INIA CSIC

Zaragoza, February 26th, 2025

WP3 Re-Breeding livestock for resilience

Demonstrate the **potential** of **animal breeding** in climate change **mitigation** and **adaptation**

To improve **accuracy** and **predictive ability** of **EBV** for **mitigation** and **adaptation** traits

To design **breeding strategies** that **reduce** GHG emission and **contribute** to adaptation to climate change

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Role of animal breeding in climate change mitigation

Re-Livestock
RESILIENT FARMING SYSTEMS

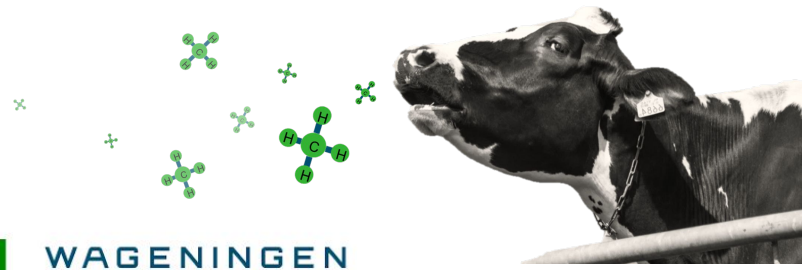
Across country analysis

Phenotypes for CH4

Host genomic data

Rumen microbiome

Rumen metagenomic data



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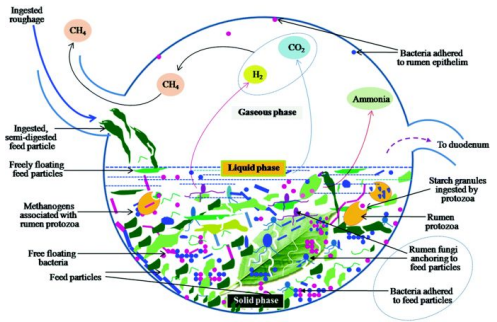
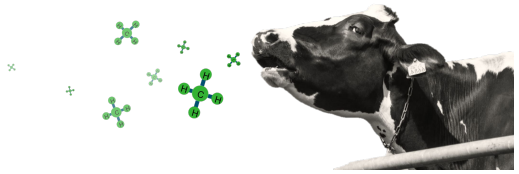
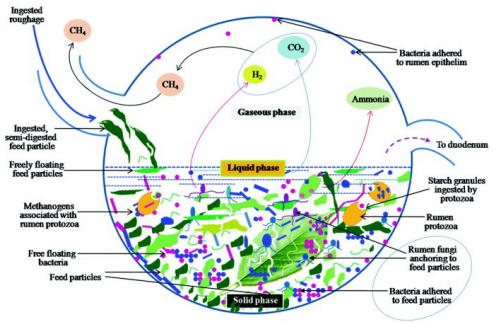


Singh et al. 2019

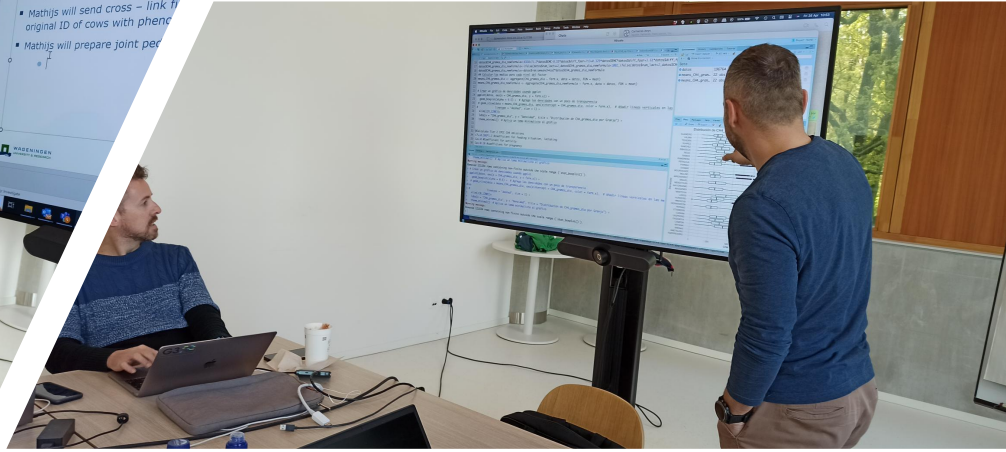
Data





- **Australia**
  400 Brahman and composite cattle (4,250 cattle by 2026)
  Microbiome information available on part of the animals
- **Poland**:
  483 Holstein cows
- **Spain**:
  >3,000 Holstein cows
  Microbiome: 439 cows
- **The Netherlands**:
  7,000 Holstein cows (100 herds: 15,000 cows)
  Microbiome: 1,000 cows

Pictures: Anouk van Breukelen, AGRI




Workshop T3.1
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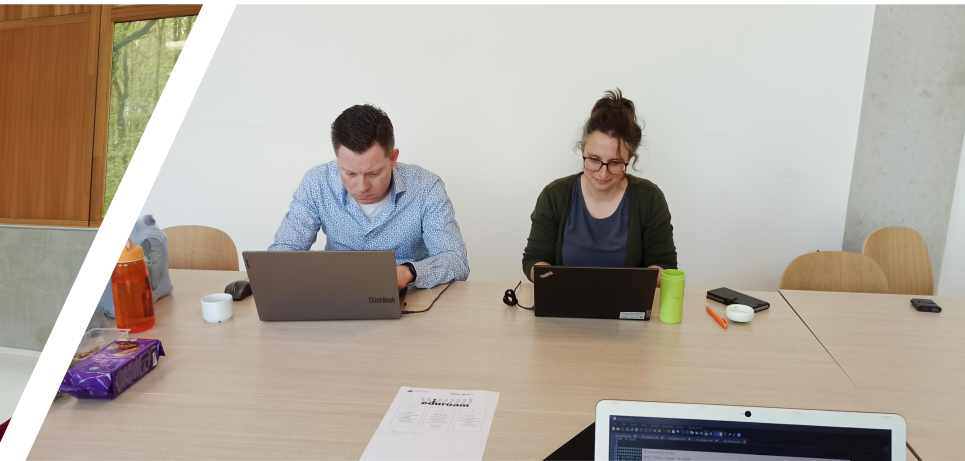
tries
25-26, 2024


CSIC
Materiales y métodos
Definición de fenotipos



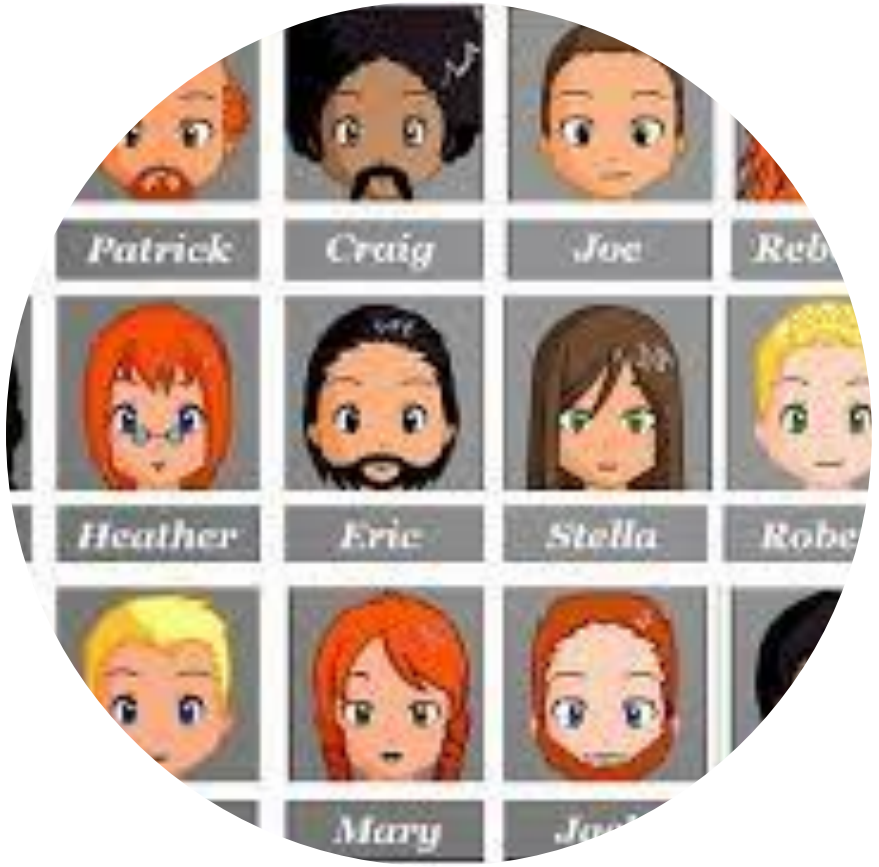
Course Program

Monday	Tuesday	Wednesday	Thursday	Friday
Introduction	GreenFeed practical tipps	Genetic analysis of methane emission	Breeding program introduction	Demonstration at Neiker and commercial farm
Global developments	Methane definitions	MIR to predict methane	Industry reports implementation	
Measurement techniques	Practical: Editing raw sniffer data – run pipelines	Microbiome as direct and proxy trait	Australia, Canada, Netherlands, New Zealand, Spain	
Discussion session	Introduction to genetic models		Travel to Vitoria	

WHO

IS

WHO?



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Lecturers

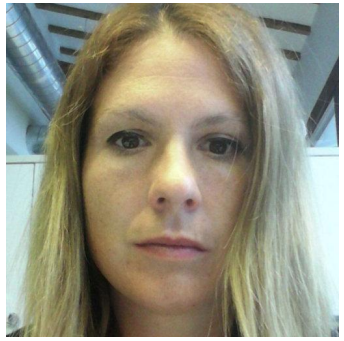
Aser Garcia

Oscar Gonzalez-Recio

Ester Teran

Lisanne Koning

Amelie Vanlierde



Idoia Goiri

Coralia Manzanilla-Pech

Birgit Gredler-Grandl

Chantal van Gemert

Suzanne Rowe

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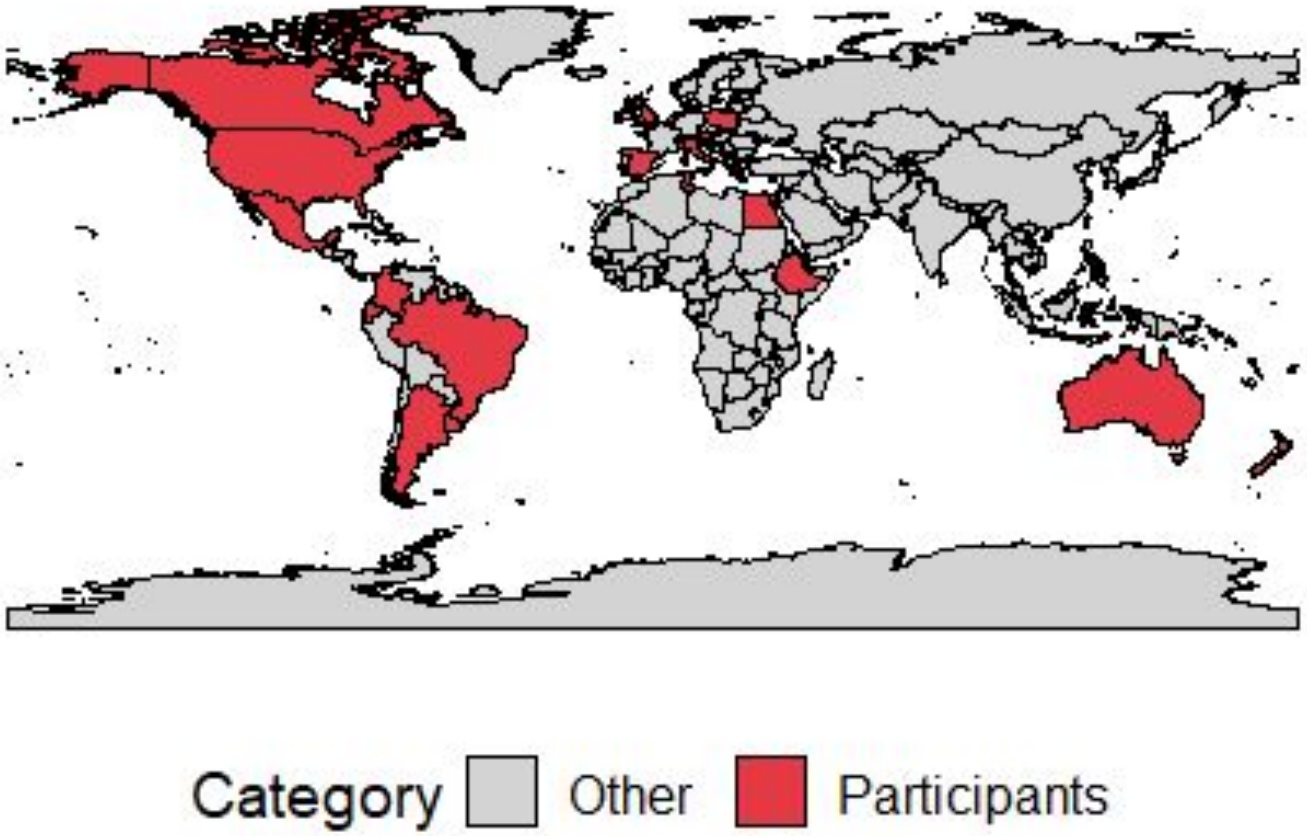
Participants from all over the world



Australia
Austria
Belgium
Brazil
Ecuador
Egypt
Ethiopia
Canada
Colombia
Italy
Mexico
New Zealand
Poland
Switzerland
The Netherlands
Tunisia
United Kingdom
United States
Uruguay

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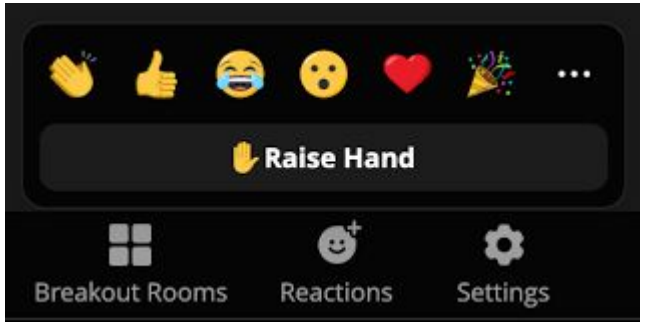
Let’s work together interactively!

- Questions – make yourself heard! Raise hand!

- Online – raise hand!



Before we start ….

- How many of you have a genetic background?
- Have all received login details for the WUR server?
- Please try to login!

Github pages

- Oscar's: https://ogrecio.github.io/RelivestockMethaneCourse/
- Coralia's:https://github.com/cmanzanillap
- Ester's: https://github.com/estermt/sniffer_Data_management
- Continuous update during the course
- Available for 1 month