

SmartCow

an integrated infrastructure for increased research capability and innovation in the European cattle sector

Transnational Access to Research Infrastructures (WP2)

Richard Dewhurst, Ren Baumont and Peter Lund

SRUC, INRAE and Aarhus University

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n°730924

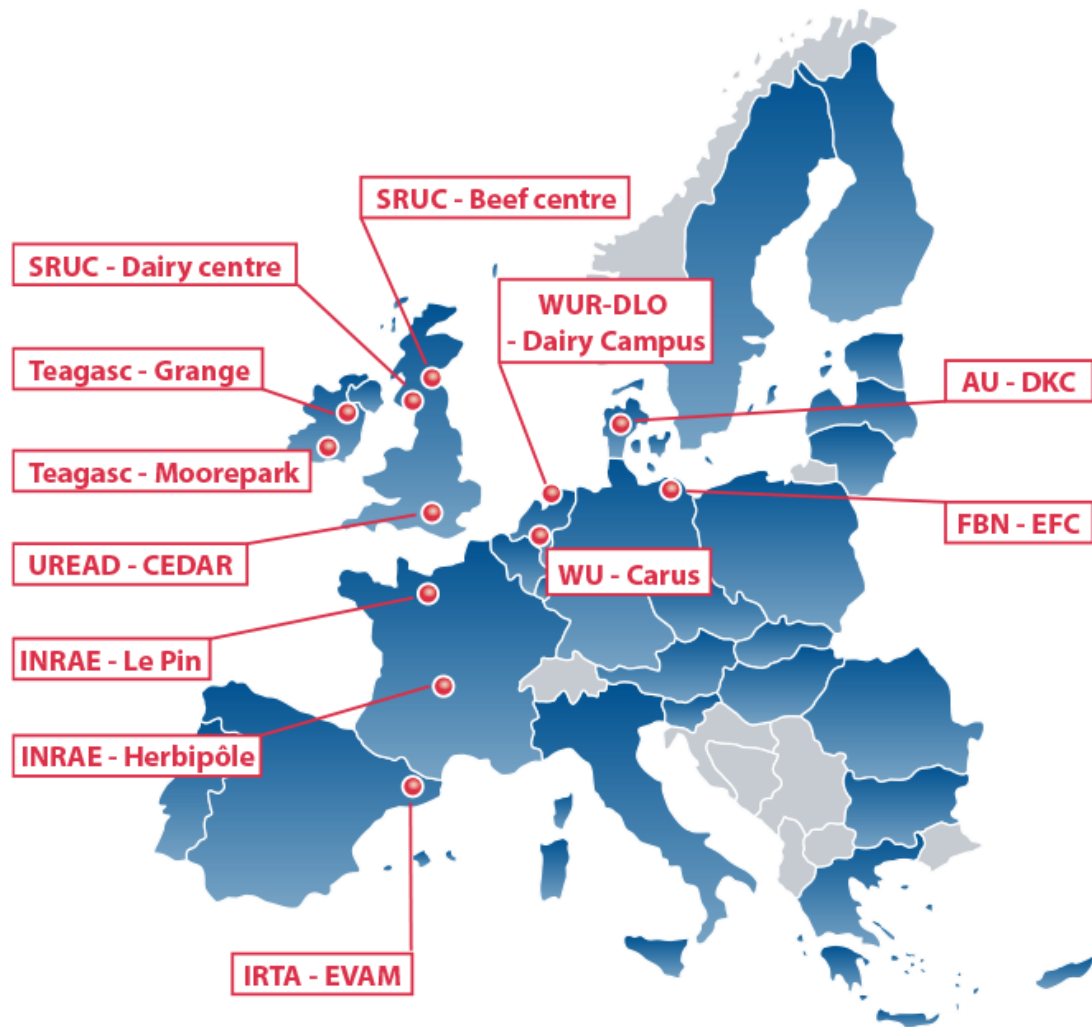
Copyright © 2018, SmartCow Consortium

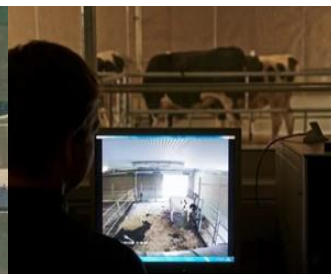


What is Transnational access?

- Funding for other industry/academics to run studies in facilities of SmartCow partners
- Transnational = in a different state (generally member/associated state of the EU)
- Access = Providing access to 20 leading cattle research facilities in Europe
- These facilities have around 2,500 dairy and 1,000 beef cattle; diversity of breeds and environmental conditions; high quality measurements (feed efficiency, emissions, digestion, metabolism,.....)
- Budget roughly 1.5 M€ : supporting ~30 experiments







Priorities

- New users (expanding the user community)
- Early-career scientists
- Users who don't have access to such facilities in their own country

- Efficient use of feed resources
- Mitigation options to reduce GHG and other emissions
- Efficient and robust animals
- Animal health and welfare (husbandry and feed management)
- Product quality
- Precision cattle management
- Basic science - behavioural, digestive and metabolic physiology



Project statistics

Call	Number of applications	Number supported (withdrawn)	Number of cow-weeks	Academic / Private lead	Gender F/M lead
First	13	11 (2)	3666	4 / 5	3 / 6
Second	16	7 (1)	2064	2 / 4	5 / 1
Third	9	5	1414	1 / 4	2 / 3
Fourth	10	5	2240	2 / 3	2 / 3
Total	48	28 (3)	9384	9 / 16	12 / 13

Countries : France (7); UK (3); Germany (2); Austria (2); Switzerland (2); Spain (2); Ireland (2); Norway; Denmark; Netherlands; Bulgaria; Macedonia



TNA Project topics

Topics	Number
Efficient use of feed resources	
Production and feed efficiency	5
N efficiency	5
CH4 emissions	6
Behaviour, welfare, heat stress	4
Mineral nutrition	3
Milk and cheese quality	2
Total	25

Overall observations

- Overall, supported 25 projects (~9400 cow-weeks); slightly more than planned 1.5 M€ – projects slightly larger than anticipated
- Main causes of rejection: lack of scientific novelty and/or weak experimental design
- Main causes of project withdrawal: lack of co-funding for analysis
- In some cases, industry partners added to the SmartCow funding to strengthen the project
- In some cases, TNA process allowed multi-site studies to strengthen the project
- In most cases TNA projects developed new collaborations
- Several examples of data/samples used in other WP

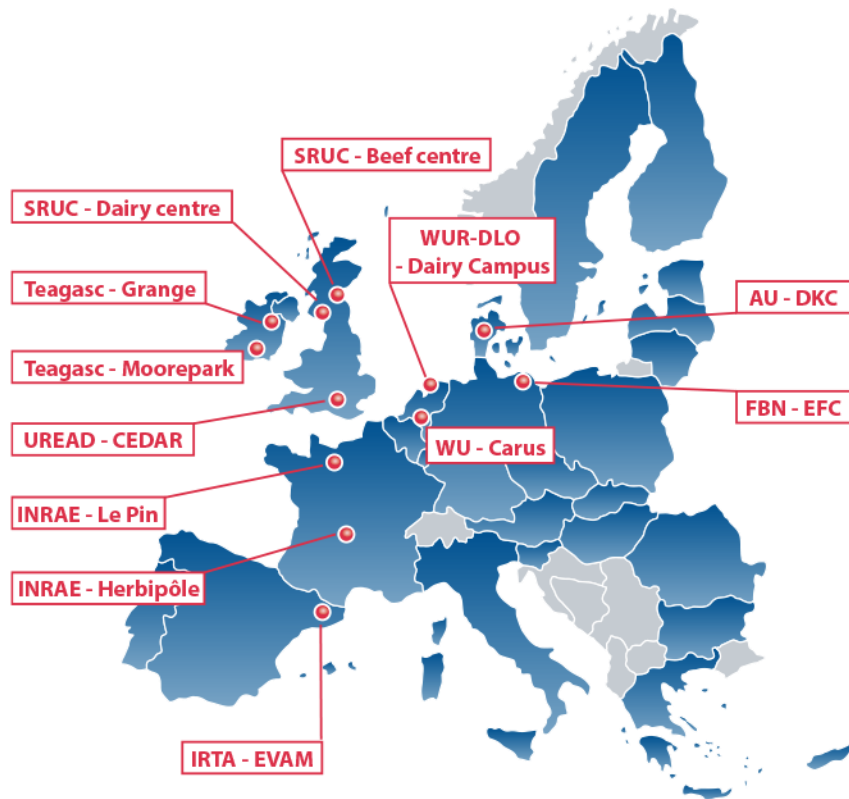


Feedback from TNA users

- Angela Schwarm (Norwegian University of Life Science, Norway): TNA at FBN-Dummerstorf (Germany)
 - Sustainable ruminant production: Methane emission, microbiome and immune function in dairy cattle
- Raphaël Boré (Idele, France): TNA at IRTA (Spain)
 - Strengthen Laser Methane m-g (LMm-g) device measurement protocol to estimate methane emission of dairy cow ruminants directly in any commercial farm.
- Joan Edwards (Palital Feed Additives; The Netherlands): TNA at Aarhus University (Denmark)
 - Magnesium butyrate in periparturient dairy cows: effect on rumen redevelopment and potential impact on ruminal nutrient absorption



Thank you for your attention



First-class Cattle Research Infrastructures (RIs) across Europe:

- 11 major RIs distributed in 7 EU countries
- 12 locations, which include 18 installations
- 2500 dairy and 1000 beef cows

- **Networking of RIs** to inventorize resources, harmonize procedures, and share data
- **Joint research activities** to improve experimental methods and phenotyping capability
- **Interaction with stakeholders** to stay in line with industry needs and improve dissemination

<http://www.smartcow.eu/stakeholders/>

TRAINING PROGRAM

For Scientists, Technicians, Stakeholders, PhD students

- Face-to-face training courses
- Free web-conferences
- One-day study tours in 4 different countries

<http://www.smartcow.eu/resources/training/>

TRANSNATIONAL ACCESS CALLS

Offers external users (academic and industry) free access to SmartCow RIs

- 30 projects during the 4 years of SmartCow
- Access to around 10,000 cow-weeks

<http://www.smartcow.eu/calls/>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n°730924.

