

# BovINE: a source of solutions for animal welfare challenges



***9<sup>th</sup> International Beef Forum***

***Warsaw, Poland***

***27<sup>th</sup> January 2023***

***Prof. Maeve Henchion, Teagasc***

What is  
BovINE?

Should we  
continue to  
improve it?



What does animal  
health & welfare  
mean to European  
farmers?

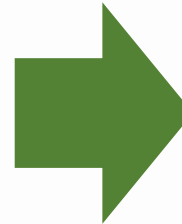
How can it be  
improved?

## FARM SUSTAINABILITY



**Innovative &  
Practical solutions  
At farm scale**

**Holistic view of  
farming systems &  
socio-economic  
environment**



## MULTI-ACTOR APPROACH



**What are your needs?**

**GRASS ROOT NEEDS**

# Collecting Grass Root Needs



**FARMERS' NEEDS**



# AHW Priority Topics



- Health & welfare of new born calves on suckler farms
- On-farm health check of youngstock prior to sale/purchase including vaccination status
- Determining causes of lameness in beef cattle
- Management, housing, and environmental factors which affect animal welfare in rearing and finishing units
- Simple labour-saving tools to measure and communicate high animal welfare standards on beef farms
- Training in animal welfare for operators/farmers (handlers, transporters and slaughterhouses)

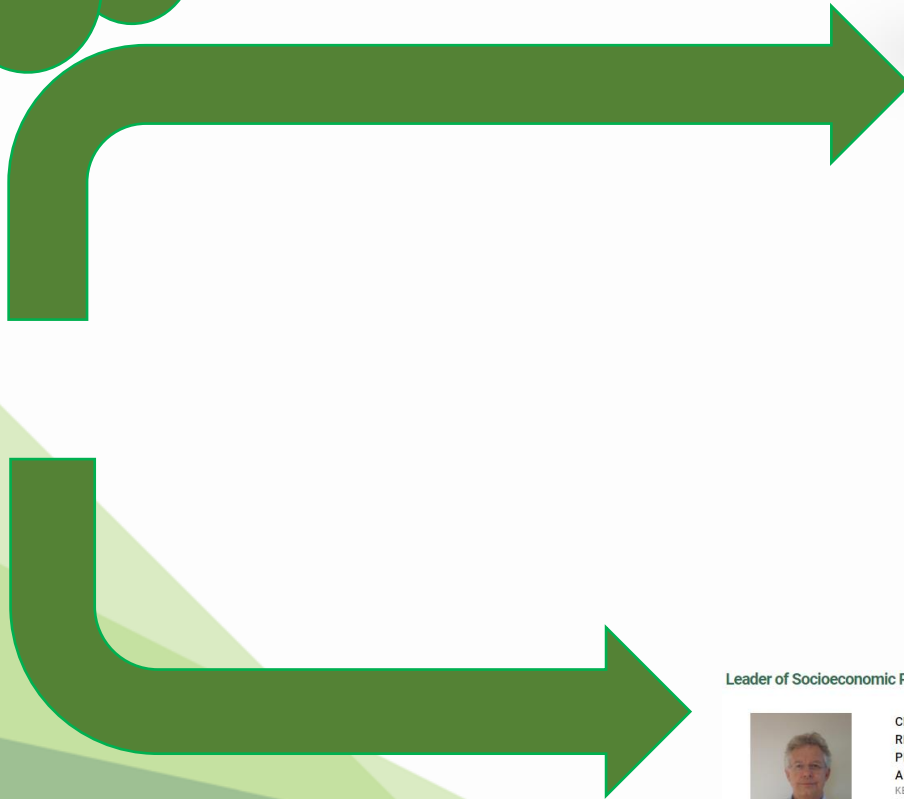
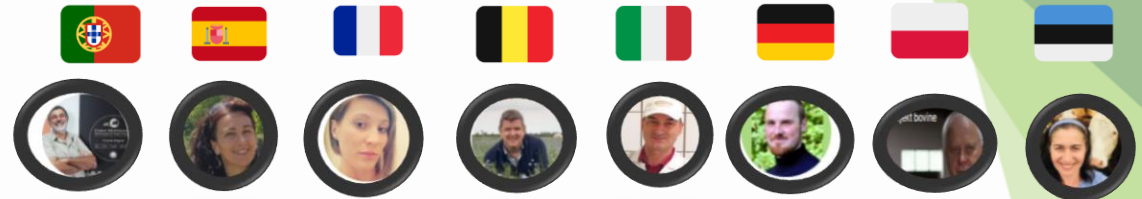




# Finding Solutions



I have a problem with.....



Leader of Socioeconomic Resilience Theme



CENTRO  
RICERCHE  
PRODUZIONE  
ANIMALI (CRPA)  
KEES DE ROEST

Leader of Animal Health & Welfare Theme



FRIEDRICH-  
LOEFFLER-  
INSTITUT (FLI)  
DR. FRANK ZERBE

Leader of Production Efficiency & Meat Quality



UNIVERSIDAD DE  
ZARAGOZA  
VIRGINIA C.  
RESCONI

Leader of Environmental Sustainability



ILVO  
KAREN GOOSSENS  
& RIET DESMET

27<sup>th</sup> January 2023

This project has received funding from the European Union's Horizon 2020 rural renaissance programme | Project No: 862590 under call H2020-RUR-2019-1



# Solutions to improve Animal Health and Welfare



Determining causes of lameness in beef cattle

## Infrared Thermography for Diagnosis of Lameness

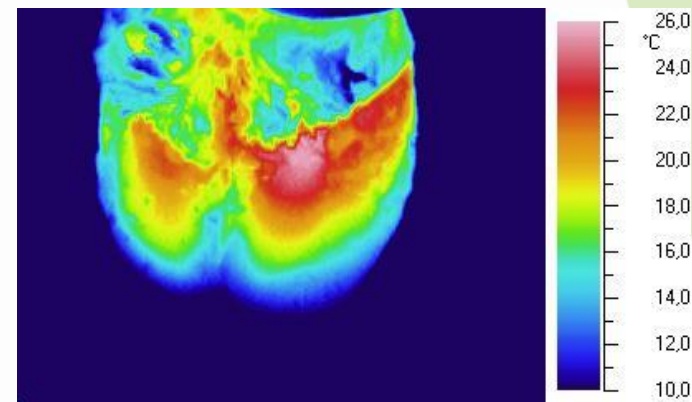




# Infrared Thermography for Diagnosis of Lameness



- Lameness is a significant problem that affects the overall productivity and profitability of cattle operations.
- Several studies have suggested that increased foot temperature, detected using infrared thermography, is a potentially useful technique for identifying lameness
  - It is a non invasive indicator / a non-contact detecting technology obtaining reliable data without avoiding undue stress reactions
  - It may even be used to detect subclinical pathological signs and inflammation before the disease becomes evident



DTW 2008 (15)

So far mainly used in dairy cattle but also useful for fattening cattle



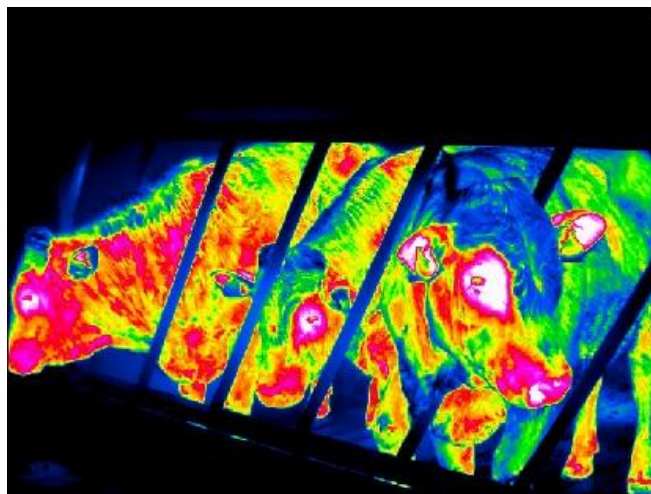




# Infrared Thermography for Diagnosis of Lameness



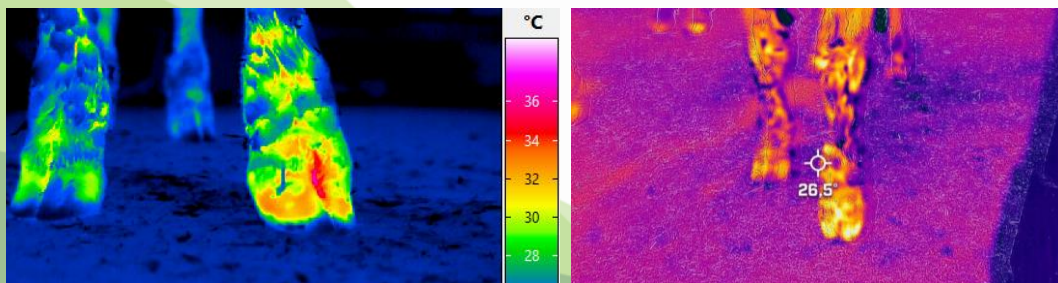
Taking IR images of lame bulls (separated)



Taking IR images of  
3 bulls in the stable



Comparing different camera systems



Filming  
young bulls  
during driving

<https://youtu.be/oQ6j7xJg47E>

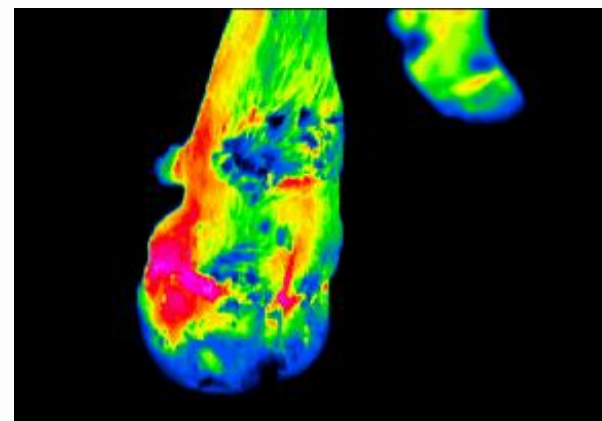
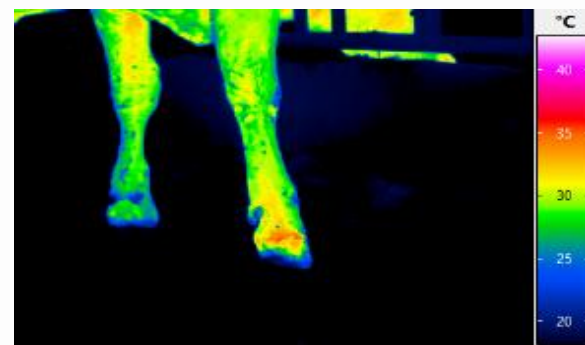




# Infrared Thermography for Diagnosis of Lameness



- With infrared thermography it is possible
  - to diagnose lameness early
  - to clarify suspicions
- Problem
  - short distance to the animal
- Best conditions
  - Animal on flat floor (not on straw)
  - max. 2 m distance to the animal
  - free field of view
  - Fixation of the animal might be necessary
  - Use second leg as comparison





# Infrared Thermography for Diagnosis of Lameness



## BovINE Material:

- BovINE article (including EIP AGRI Practice abstract + links to literature)

<https://hub.bovine-eu.net/recognising-causes-of-lameness/infrared-thermography-for-the-diagnosis-of-lameness>

- Demonstration in Germany (including videos and pictures)

<https://hub.bovine-eu.net/recognising-causes-of-lameness/demonstration-infrared-thermography-for-diagnosis-of-lameness>

- Demonstration in Belgium (including videos and pictures)

<https://hub.bovine-eu.net/recognising-causes-of-lameness/demonstration-infrared-thermography-for-diagnosis-of-lameness-belgium>



# Solutions to improve Animal Health and Welfare



Simple labour-saving tools to measure and communicate  
high animal welfare standards on beef farms

**On-farm-scoring for bovine respiratory disease (BRD)**





# On-farm-scoring for BRD



- Bovine respiratory disease (BRD) is the most common cause of morbidity and mortality in feedlot cattle
- Various studies point to the negative effects of BRD on daily gain and carcass weight
- A combination of a new scoring system and an app developed for this purpose helps reduce BRD prevalence and improve weaned calf health
- The tool is designed to be herd-specific to help producers identify the risk of their calves and the management changes needed to control BRD on their farm













# On-farm-scoring for BRD



- This new BRD scoring system was developed at UC Davis
- The scoring system is based on the presence or absence of **six clinical signs**, each of which is assigned a model-based score
- BRD scoring system is suitable for use on farms because of its simple design
- It can help to provide sensible medical intervention in BRD cases and reduce unnecessary treatment of animals with antimicrobials.

## BRD scoring system for pre-weaned dairy calves



Clinical sign	Score if normal	Score if abnormal (any severity)
Eye discharge	0 	2 
Nasal discharge	0 	4 
Ear droop or head tilt	0 	5 
Cough	0 No cough	2 Spontaneous cough
Breathing	0 Normal	2 Rapid or difficult breathing
Temperature	0 <39.2°C	2 ≥39.2°C

**Add scores for all clinical signs, if total score is ≥ 5, calf may be positive for BRD**

Scoring system adapted from the University of California, Davis.





# On-farm-scoring for BRD



App developed is easy to use and shows results immediately

Menu

Prevalence

Reports

Options

Bound (0 to 1)

Prevalence Assumed (0 to 1)

Pre-weaned calves

Scoring

Calves to Score: 19

Next Hutch Number: None

Calf Present? ☒ YES ☐ NO

Number Scored: 0

Number Remaining: 0

View Report

BRD Calf Scoring Done

User Details 0

Calf Details 0

Eye Discharge



Nasal Discharge

Ear Droop or Head Tilt

Cough

Breathing

Temperature



Normal

BRD Calf Scoring Done

User Details 4

Calf Details 4

Eye Discharge


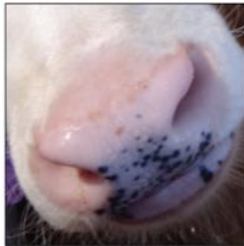
Nasal Discharge

Ear Droop or Head Tilt

Cough

Breathing

Temperature



Normal

BRD Calf Scoring Done

User Details 9

Calf Details 9

Eye Discharge



Nasal Discharge

Ear Droop or Head Tilt

Cough

Breathing

Temperature



Normal

BRD Calf Scoring Done

User Details 0

Calf Details 0

Eye Discharge

Nasal Discharge

Ear Droop or Head Tilt

BRD score negative

OK

temperature





# On-farm-scoring for BRD



## BovINE Material:

- BovINE article (including EIP AGRI Practice abstract + links to literature)  
<https://hub.bovine-eu.net/recent/on-farm-scoring-for-brd-ca-brd-scoring-system>
- Two demonstrations in Germany FLI+BRS (including videos and pictures)
  - <https://hub.bovine-eu.net/simple-labour-saving-tools-to-measure-and-communicate-high-animal-welfare-standards-on-beef-farms/demonstration-on-farm-scoring-for-bovine-respiratory-disease>
  - <https://hub.bovine-eu.net/simple-labour-saving-tools-to-measure-and-communicate-high-animal-welfare-standards-on-beef-farms/demonstration-on-farm-scoring-for-bovine-respiratory-disease-germany>
- Demonstration in Spain (pictures and fact sheets)  
<https://hub.bovine-eu.net/simple-labour-saving-tools-to-measure-and-communicate-high-animal-welfare-standards-on-beef-farms/demonstration-on-farm-scoring-for-bovine-respiratory-disease-ca-brd-scoring-system>



# Hear from the expert



- [BovINE gets its message across on beef farming and sustainability - BovINE \(bovine-eu.net\)](https://bovine-eu.net)
- Youtube, 37.47





# Priority Topics. Where can you see them?



**PRIORITY  
TOPICS**

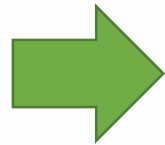
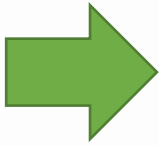


**GOOD  
PRACTICES**



**RESEARCH  
INNOVATIONS**

27<sup>th</sup> January 2023



**BovINE**  
BEEF INNOVATION NETWORK EUROPE

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## BovINE Knowledge Hub

The BovINE Knowledge Hub (BKH) is available to all involved with cattle farming and the strategic and practical challenges faced by the sector. Beef farmers, farming organisations, advisors, researchers, and innovators can access knowledge, practical information, and evidence-based innovations on the co-related themes of socio-economic resilience, animal health & welfare, production efficiency & quality, and environmental sustainability. Additionally, all registered users of the BKH are able to comment on existing information and upload new and additional material on the core themes and thus contribute to developing practical innovations that can be implemented on European beef farms. Register with the BKH to search and contribute.

Submit Content Search: Keyword/Topic Search

### BovINE Themes

The BovINE project is focused on four key themes:

- Socioeconomic Resilience (€)
- Animal Health & Welfare (Heart icon)
- Environmental Sustainability (CO<sub>2</sub>)
- Production Efficiency & Meat Quality (Checkmark)

<https://hub.bovine-eu.net/>



**REGIONAL/NATIONAL  
MEETINGS**

**TRANSNATIONAL  
EVENT**

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# BovINE Knowledge Hub (BKH)

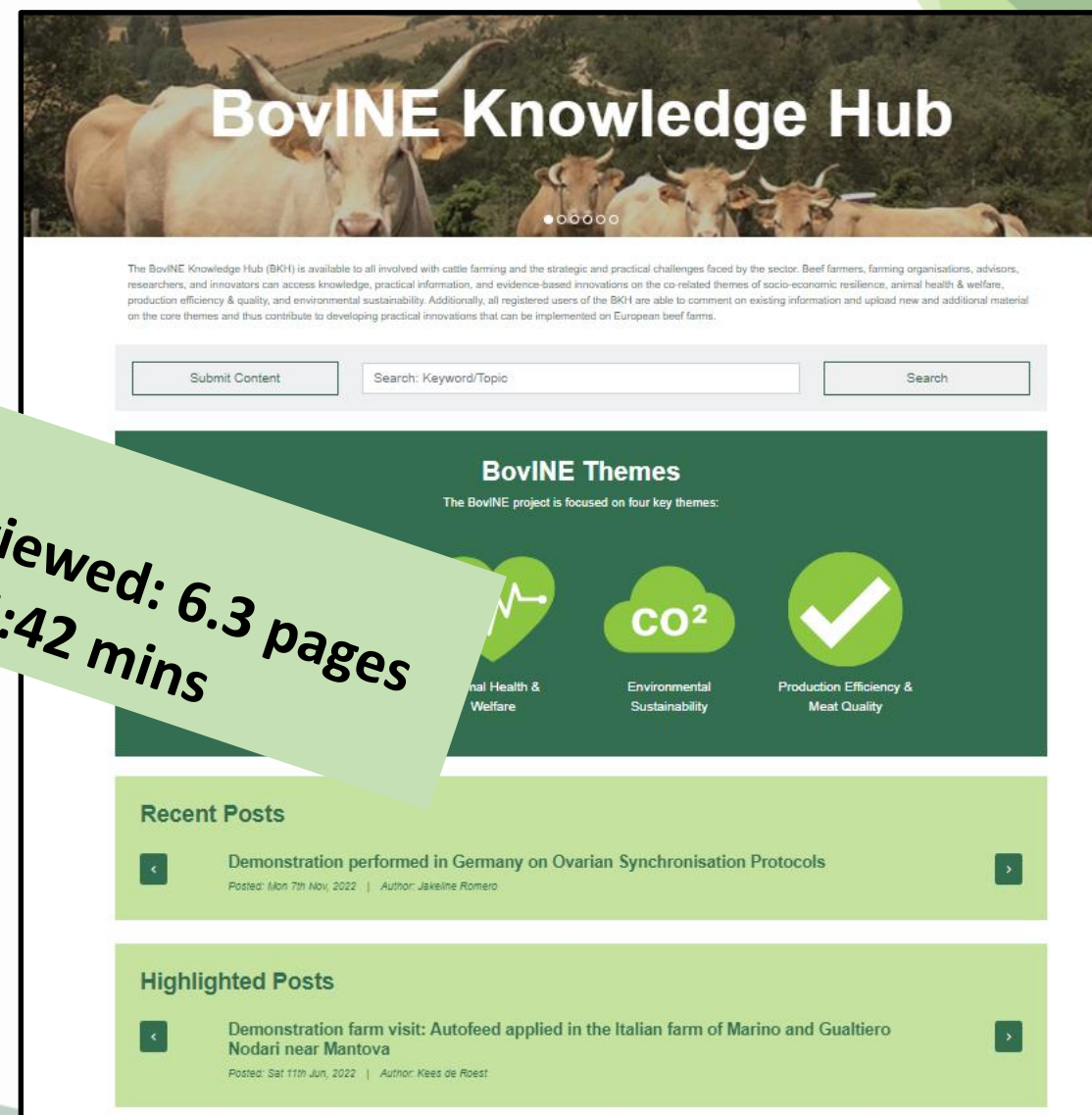
<https://hub.bovine-eu.net/>



- 400+ posts
  - 340 separate practices/solutions
  - 96 submitted to the BKH highlighted

- Access open to all
- Search facility – key words
- Organised by 4 themes
- Some multi-lingual material
- Translate copy via browser

**Users to date: 3,497**  
**Average no. of pages viewed: 6.3 pages**  
**Average time on site: 5:42 mins**



# BovINE Project website <https://www.bovine-eu.net/>



- 9 country pages

## Links to

- 12 webinars
- 8 animations
- BovINE videos (meetings etc) hosted on YouTube

The screenshot shows the BovINE website header with flags for France, Italia, EESTI, Deutschland, IRELAND, BELGIË, PORTUGAL, ESPAÑA, and POLSKA. Below the flags, a text block states: "BovINE brings together a consortium of 18 organisations from 10 European countries. The diverse consortium is comprised of research organisations, farmer and breed associations, Not-for-Profit and SMEs. Each partner has a specific role within the project. Find translated information directly related to each country via the flag icons above". The main content area features a "BovINE Webinars" section with three video thumbnails and a "BovINE Themes" section with four icons: Socioeconomic Resilience (Euro symbol), Animal Health & Welfare (heart with pulse line), Environmental Sustainability (CO2 symbol), and Production Efficiency & Meat Quality (checkmark).

**Nefertiti H2020 Project**  
Nefertiti is a 4-year H2020 funded project comprising a unique network of 22 partners from 17 countries. It is coordinated by ACTA, the head of Network of the French Agricultural Technical Institutes.  
Through peer-to-peer demonstration of techniques on 10 major agricultural challenges in Europe, the Nefertiti project aims to establish an EU-wide highly connected network of demonstration and pilot farms designed to enhance knowledge exchanges, cross fertilization among actors and efficient innovation uptake in the farming sector.  
[Website](#)  
[Get in touch](#)

**Life Carbon Farming**  
Life Carbon Farming is a six-year European project which started in October 2021 and is funded by the LIFE programme.  
Together the 10 partners from across 6 European countries are working on the development and implementation of a result-based funding mechanism for carbon farming in EU mixed crop-livestock systems, with the aim of reducing the carbon footprint of agricultural products by 15% within six years.  
The project brings together actors involved in agriculture and other economic sectors (public bodies, industrial companies and banks) to implement carbon finance mechanisms in six European countries.  
[Website](#)  
[Get in touch](#)

**Automated Weight project in Navarra (M16.2 RDP)**  
An EU funded project which aims to improve the competitiveness of Pyrenean cattle farms, facilitating their modernization through the collection of performance data in situ.  
[Website](#)  
[Get in touch](#)

- Linked projects
- Advisory Board

**Advisory Group Members**

 <b>Claire Donoghue</b> Board Chair of the ERBS <a href="#">Website</a>	 <b>Markus Rombach</b> Deputy Group Leader at AGRIDEA & EUFRAS <a href="#">Website</a>	 <b>Thomas Sanchez</b> Senior Policy Advisor at Copa Cogeca <a href="#">Website</a>
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# BovINE – multi-language materials (website)



- 9 dedicated country pages
- Local language materials
- Accessed via flags on home page

## BovINE Tijdschrift: Duurzaamheid en rundveehouderij in België

BovINE heeft een tijdschrift uitgebracht over de rundveehouderij en duurzaamheid in België. Lees over de toestand van de rundveehouderij en de praktische oplossingen die het BovINE-project gedurende het 3 jaar durende project heeft nagestreefd.

Gebruik de knoppen onderaan het scherm om in te zoomen of het tijdschrift in een volledig scherm te openen.



Just published!  
Dedicated country magazines

## BovINE - Beef Innovation Network Europe

BovINE verenigt een consortium van 18 organisaties uit 10 Europese landen. Het gevarieerde consortium bestaat uit onderzoeksorganisaties,

[Privacy & Cookies Policy](#)





# Increasing welfare standards?



3 arguments:

- Obligatory: Market and/or policy may require it
  - Reward needs to be large enough/ punishment needs to be severe enough
- Normative, farmers value high standards of animal welfare for their animals
- Instrumental – logical thing to do
  - benefits other aspects of sustainability,
  - can be important indicator of farmer health and welfare



Work Package 2: Network formation and multi-actor approach

Deliverable 2.4 - Report on combined impact of good practices and production systems on 4 sub-thematic areas

Document version: 1  
Dissemination level – PU (Public)

Deliverable Authors: Helena Ferreira, Erwin Wauters (EV-ILVO)  
Contact email: [Helena.ferreira@ilvo.vlaanderen.be](mailto:Helena.ferreira@ilvo.vlaanderen.be)

[www.bovine-eu.net](http://www.bovine-eu.net)



# Synergies across other sustainability areas



	Health and welfare of NB calves	Lameness in beef cattle	Simple tools to measure AHW	Mgt & housing effect	On farm health check	Training in animal welfare	Ranges
SER	++; very positive, better mgt	+; prevention in beef cattle but needs investment	+/0; Depends on costs; labour saving, market benefits	0/+ ; if well managed, depends on costs,	+, some costs re vet, savings on use of ABs,	++; market benefits linked to image of sector	0/+, +, ++
PEMQ	++; animal grows more efficiently	+/0; perhaps improved meat quality	++; no bruising; the carcass has better quality (no bruises etc.)	++; labour time; meat quality; production efficiency will be higher with better mgt.	++; no antibiotics; less vet costs; the animal grows more efficiently	++;, for PE, lower stress inked to MQ	0/+, ++
ES	+; less antibiotics; less residues in envt.	0; - re footbaths in some countries	+; less antibiotics	+/++; farmer can invest renewables, not all mgt systems positive for AHW and ES	Maybe +; less antibiotics	0; neutral, or no impact	0, +, ++



# BovINE Staying in Touch



Stay up to date with BovINE  
SIGN UP TO THE E-NEWSLETTER

SUBSCRIBE

- Sign up to e-news (final issue)
- Direct: emails available
- Follow/comment on social media channels

## Social Media

STAY IN TOUCH WITH US ON SOCIAL CHANNELS





# Acknowledgements



- Alexander Riek, FLI, BovINE AHW TWG leader
- Rhonda Smith, Minerva UK, BovINE Comms & Dissemination leader
- Maite Aquilar, INTIA, BovINE WP2 lead partner
- Richard Lynch, BovINE project manager
- All members of BovINE consortium, members of our TWGs and participants in our events

