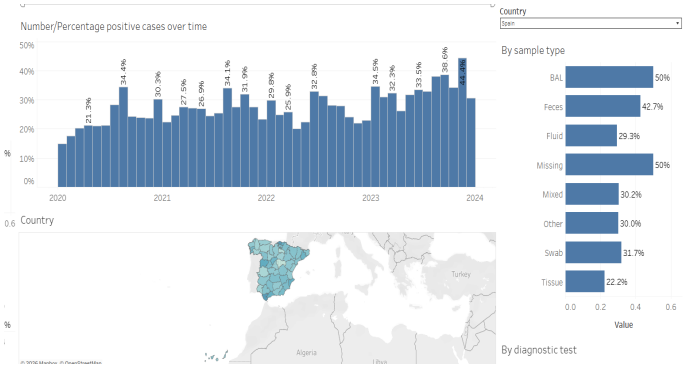
DE CIDE

Data-driven control and prioritisation of endemic contagious animal diseases

Final project results.

DECIDE brings together 20 European partners to develop data-driven decision support tools for endemic contagious animal diseases in pigs, poultry, cattle and salmon, aiming to integrate them into existing farm management systems. The project concludes in June 2026, and this flyer presents its main results.

Barometer



The Barometers are interactive dashboards that visualise pathogen-specific diagnostic results to support disease surveillance and evidence-based decision-making in livestock production. They show historical trends, dynamics and current pathogen presence by region, enabling early warning such as antimicrobial use, vaccination and animal purchasing. Intended for veterinarians, farmers, farm managers, as well as industry and public authorities. Current implementations cover cattle, pigs and poultry.

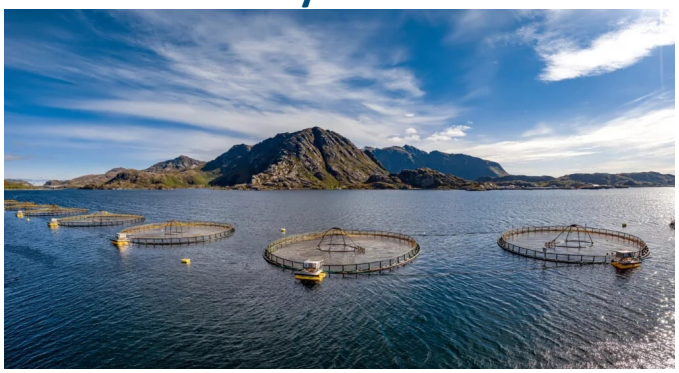
Abattoir Inspect

AbattoirInspect is an interactive data visualisation and reporting tool that turns pig abattoir meat inspection data into actionable insights for animal health, welfare and public health monitoring. It helps track carcass rejection trends, identify common causes and benchmark farm or abattoir performance over time and against peers. The app includes Basic, Advanced and TimeSeries tabs, offering different views. It is intended for pig farmers, veterinarians and industry primary in Scotland, and beyond.

BRD Tools

Connect'BRD was developed by INRAE to mitigate the impact of Bovine Respiratory Disease (BRD) in fattening farms. It combines early detection using real-time sensor data analysed through artificial intelligence algorithms with the prioritisation of appropriate interventions. This is achieved by simulating contrasting scenarios within an epidemiological model, resulting in real-time, actionable recommendations delivered directly to farmers.

Salmon Mortality Monitor



The Salmon Mortality Monitor, collaboratively developed in Scotland, Ireland and Norway, provides an overview of salmon mortality in terms of numbers and biomass. It covers overall mortality estimates and can also break results down by contextual data, such as causes including seal predation or bacterial infections. Designed for salmonids, it can be used by any fish farming operation with the appropriate data format. Users include fish producers, but also authorities, certification bodies and producers organisations.

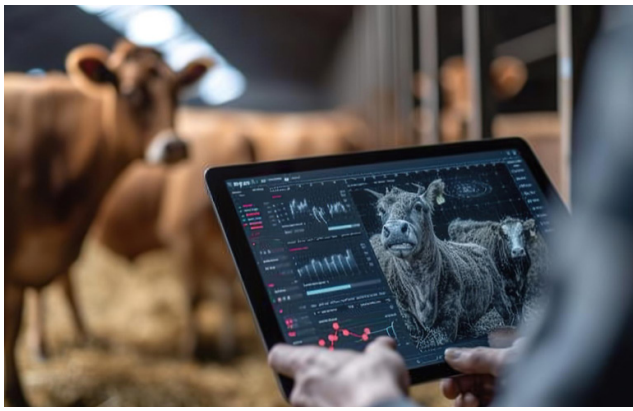
Data identification, characterisation and acquisition

- Reusability challenges of livestock and animal health data were analysed, leading to recommendations.
- Metadata standard guidelines and training materials on data stewardship in veterinary epidemiology were developed to support harmonised data collection and reuse.
- The Livestock Health Ontology (LHO) was developed for cattle, pig, poultry and salmon, enabling standardised data integration across European laboratories.
- Federated Learning was implemented to support privacy-preserving predictive analytics across laboratories.

Methods for data analysis and modelling

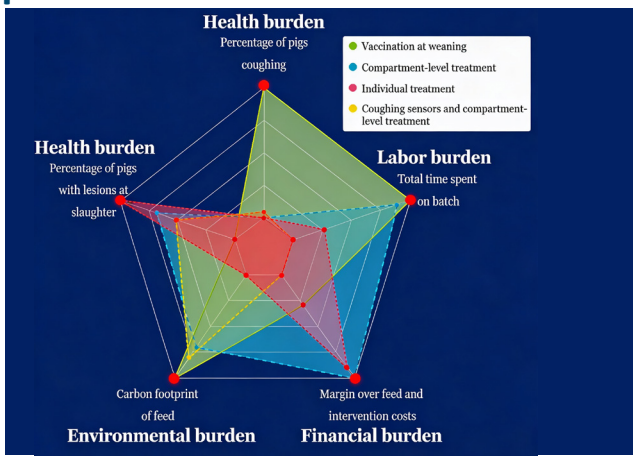
- Annual summer schools taught project partners to build dynamic (generalised) linear models to monitor case data and trigger alarms when observations deviated significantly from expectations.

- Mechanistic models for respiratory diseases were developed for young fattening cattle, veal calves, pigs and poultry to clarify key drivers of pathogen spread and evaluate control strategies, while considering economic impacts and animal welfare.



Multidimensional burden of disease metric and prioritisation of interventions

- A multidimensional burden of Mycoplasma hyopneumoniae in fattening pigs is quantified, and included financial, labour, health and environmental burden (see figure)
- Mechanistic modelling enables quantitative economic insights for intervention strategies for pigs, poultry, and calves.
- For salmonids the costs and benefits of Pancreas disease interventions are determined.
- Quantifying animal welfare burden is hardly possible based on data, but using expert elicitation methods seems promising.



Implementation and behavioural strategies for animal disease management

- Stakeholders expressed needs of data-driven tools such as autonomy over their data, timely and contextualised information, and positive user experience (e.g. intuitiveness).
- Barriers to using tools were limited trust in data quality, lack of transparency on how data were used, and poor user experience.
- Understanding user needs by engaging with stakeholders throughout the tool development process is key to sustained tool adoption on farms.

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More information at
www.decideproject.eu