This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000494.

Issue 4
October 2025

DECIDE

Newsletter #4

Welcome to the fourth issue of the newsletter of the DECIDE project. The newsletter serves as a resource to share recent updates and developments of the DECIDE project, exciting results, milestones and insights into the work within the consortium. DECIDE is a five-year Horizon 2020 project, developing data-driven decision support tools for endemic contagious diseases in pigs, poultry, calves and salmon.

- Project coordinator Prof. Dr. Gerdien van Schaik

Foreword.

We are now in the last year of the DECIDE project which will finish in June 2026. This newsletter features work of Yara Slegers and Camille Delavenne on data-driven tools for broiler production. They made an outline of available data in three European countries to rank the burden of diseases. The heterogeneity in the available data is large, which can hamper tool development. However, on the DECIDE website you can find a first prototype of a data-driven tool to support vaccination for infectious bronchitis virus, the IBV Barometer. IBV is a corona-virus that causes substantial losses in broiler production and indirectly increases antimicrobial use.

In the last year of the project several technical workpackages (WP) have reached their final stage. WP1 on data science has created code and implemented the first example of federated access for the cattle barometer. WP2 on modelling has delivered the final model codes that are used in the project for early warning purposes, model disease transmission, determine the burden of disease and rank disease control options.

In contrast, WP3 on decision support tools and WP5 on social science are busy with tool evaluations with the users. WP4 continues its work on ranking diseases and control options for all burdens of disease (economic, welfare, AMU). Furthermore, WP6 on dissemination organised a successful animal health cluster event with six projects in Berlin prior to the SVEPM conference in March 2025. The aims of the event was to share challenges and best practices on 1) Data access and re-use for animal disease surveillance tools and 2) Stakeholder needs when developing and using animal disease surveillance tools.

We are now planning for the **final event** of DECIDE on **June 10th, 2026 in Brussels**. We will draft a programme with a mix of the lessons learned and an introduction to the tools developed in DECIDE. Please, **save the date in your Agenda**! More information will follow in our last Newsletter and on our website (www.decideproject.eu). This is also the place to be for all the project output, including the tools. Feel free to contact me with questions or suggestions for the project.

Issue 4
October 2025

DECIDE

Broiler disease burden assessments – where are the data gaps?

by Yara Slegers (UU) and Camille Delavenne (EpiMundi)

One of the goals of the DECIDE project is to estimate the burden of disease. This knowledge can be used to rank diseases and to inform decisions made at the broiler farm. During the project, we collected broiler production data from three different countries. We compared these datasets to identify data gaps and evaluate their relevance for burden assessments.

Of the datasets available in the project, two originate from an integration (large company). They were either extracted from a company database (Italy) or created specifically for the project (Poland). The third (Netherlands) is a combination of national databases. Table 1 and 2 provide a summary of the data evaluation. The datasets vary in size, level of detail, and included variables. Overall, we see gaps in health data, as well as in information on production systems and chick origin. Data on prices, necessary to calculate the economic costs of diseases and interventions, is not included in any dataset. Regarding welfare, total mortality and footpad lesions are available as general welfare indicators, but footpad lesions are recorded in two different ways.

Why do these gaps exist? In some cases, data sharing is unwanted or prohibited due to mistrust, lack of understanding of potential risks and high competitiveness.[1] In other cases, making data reusable requires too much effort, for example when paper records are used. To resolve this gap, we must continue building trust between stakeholders and researchers and encourage data sharing by showing its benefits to farmers and companies. In the DECIDE project, we do this by involving these groups in the development of decision-support tools and by sharing with them the insights gained by analysing the data that they provide. We also work on developing and promoting techniques for automated data collection and privacy-preserving data sharing. Lastly, we can assist in data documentation and provide guidance through the complex data regulation landscape. Until further advancements in data sharing are made, production data are supplemented with data from literature and expert opinion to enable disease burden assessment.

Table 1: description of the three poultry datasets available in DECIDE

	IT	PL	NL
Data unit	Flock per farm	Flock per house	Flock per house
Time unit	Week	Day	Day
Data size	1,181	1, 774 (115 with lab data)	133,973
Future data collection	Yes	No	Yes

Table 2: comparison of variables in the datasets. Abbreviations: EPEF - European broiler efficiency factor. FCR - feed conversion rate.

	IT	PL	NL
Broiler flock characteristics			
Placement number	+	+	+
Thinning	-	+-[5]	+
Final age	+	+	+
Final flock size	+	+	+
Performance measures			
First-week mortality	+	-	-
Total mortality	+	+	+
Daily gain	+-[1]	-	+
FCR	+-[1]	+	-
EPEF	-	+	-
Slaughter data			
Slaughter weight	+-[1]	+	+
Weight paid out	-	+	-
Dead on arrival	-	+	-
Condemnation	-[2]	+	-
Footpad lesions	+	+	+
Other health-related measures			
Vaccinations	+[3]	+[6]	-
Antibiotics	-[2]	+[6]	+
Flock health issues	-	+-[4]	-
Diagnostic lab data	-	+[6]	+-[4]
Production system and management			
Location	-	+	+
Litter type	+[3]	-	-
Ventilation type	+[3]	-	-
Construction year	-	-	-
Available surface	+	-	-[2]
Stocking density	+-	+-[5]	+-[5]
Other chain phases			
Breeder flock	-	+-	-[2]
Hatchery	-	-	-
Feed supplier	+[3]	-	-[2]

[1] *Average of thinned and final batches.*
[2] *Recorded, but not available in the data extract.*
[3] *Same for all flocks.*
[4] *Available for a small fraction of the flocks, but without a reason for submission, and missing information does not indicate an absence of issues.*
[5] *(can be) estimated.*
[6] *Available for a subpopulation of the flocks as part of the screening process.*

[1] *Beyene, T. J., C. W. Lee, G. Lossie, M. M. El-Gazzar, and A. G. Arruda. 2020. Poultry Professionals' Perception of Participation in Voluntary Disease Mapping and Monitoring Programs in the United States: A Cluster Analysis. avdi 65:67–76.*

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Recent Publications.

The use of data for health and welfare management of farmed salmons in Norway, Scotland, and Ireland

Preventive Veterinary Medicine, 2025

Xiao Zhou, Annette S. Boerlage, Britt Bang Jensen, Kristine Gismervik, Victor H. S. Oliveira, Ian Hutchinson, Alison Burrell, David A. Graham, Charlotte Doidge, Jasmeet Kaler, Gerdien van Schaik, Michael Siegrist, Angela Bearth

Data-driven solutions can support stakeholders' decision-making when managing health and welfare in Atlantic salmon production. While many different types of data are being collected, knowledge about stakeholders' use and needs regarding this data and data tools in their day-to-day work is limited. The current study explores the status quo of using data and data tools in salmon health management and needs of the stakeholders. Fourteen focus group discussions and three in-depth interviews were completed and analysed in Norway, Scotland and Ireland with salmon production managers, health experts and health inspectors from government and certification bodies (N = 44). Results showed that the participants valued the role that reliable data can play in salmon health management. Factors that influence data utilisation for decision-making were identified using the data lifecycle concept (i.e., the flow from collection to analysis and sharing). Generally, stakeholders preferred timely, ideally automatically recorded, standardised and high-quality data and wished for a tool that offers convenient access to data and facilitates data search and compilation. Furthermore, the comfort with which stakeholders use data tools varied, ranging from some stakeholders welcoming support from decision support tools to others preferring to rely mostly on their personal experience when analysing data. While some data sharing is mandatory (e.g., reporting of mortality from industry to authorities), the participants reported other forms of data sharing (e.g., informal exchange of information, not data, across companies). Lack of contextual factors contributes to a hesitancy to share data (e.g., lack of perceived benefits and fear over potential misuse). In Norway, stakeholders were more open to share data between the salmon industry and authorities. Being used to reporting more data, combined with operating in a larger industry where individual farms are not easy to single out from aggregated statistics, may have contributed to gaining trust among participants in Norway. However, in all three countries, some participants were reluctant to share data with the public or tied it to preconditions (e.g., ensuring it was presented in the right context, with explanations on the background for mortality), while others highlighted positive effects of sharing data, such as benchmarking and increased focus on preventive measures. Addressing barriers to data and data tool utilisation provides valuable insights that could benefit salmon health management and sustainability of the sector.

Reusability challenges of livestock production data to improve animal health

Scientific Data, 2025

Camille Delavenne, Gerdien van Schaik, Jenny Frössling, Angus Cameron, Céline Faverjon

In veterinary epidemiology, using data routinely generated by stakeholders of the livestock production chains offers an opportunity for researchers to access a large amount of information that could be used to improve animal health. However, (re)using these non-scholarly data doesn't come without challenges. This study assesses the reusability for research purposes of 30 European datasets generated by the livestock sector to meet legislative or operational needs. Information about each dataset was collected through a questionnaire survey filled by the data owner or the data user (researchers). Datasets were described, and their compliance with the FAIR principles, a data-sharing standard, and the principle of accountability defined in the General Data Protection Regulation were assessed. The study highlighted major gaps in terms of compliance with data regulations and implementation of good data management practices, specifically considering the rare use of metadata and standard vocabularies. Filling these gaps is essential to reap the full benefits offered by the rapidly growing volume of heterogeneous data available in livestock production systems.

Issue 4
October 2025

DE CIDE

Industry Stakeholders Attitudes and Beliefs about Tail Biting and Docking in Pigs – A Case Study in Switzerland and Spain

Preventive Veterinary Medicine, 2025

Andrea Knörr, Xiao Zhou, Angela Bearth, Beatriz Garcia-Morante, Carla Correia-Gomes, Joaquim Segalés, Thomas Echtermann, Michael Siegrist

Background: Tail docking is still widely used in major European pig-producing countries despite efforts to ban it. The present study aimed to understand the attitudes and beliefs of pig farming professionals in Spain and Switzerland regarding tail biting and tail docking. For this, n = 275 Swiss, and n = 87 Spanish participants completed an online questionnaire regarding the issue of tail biting and docking in pigs and their attitudes and beliefs.
Results: Spanish participants predominantly kept docked pigs (n = 70, 80 %), whereas Swiss participants kept undocked pigs (n = 271, 99 %). While tail biting occurrences in the last two years were reported by most participants (n = 301, 83 %), the attitudes towards them differed: Spanish participants found the management of tail biting more challenging than Swiss participants. In addition, Spanish participants considered welfare to be better for docked pigs than for undocked pigs, whereas Swiss participants perceived the welfare of undocked pigs to be better. Similarly, Spanish participants showed a strong perception of lower production risks for docked pigs than for undocked pigs, a perception that could not be found in Swiss participants. Overall, Swiss participants saw more advantages in keeping long-tailed pigs and more possibilities to prevent tail biting than Spanish participants.
Conclusions:The results suggest that Spanish pig-farming professionals' attitudes towards tail docking are dominated by the conviction that docking is a necessity that lowers production risks and ensures animal welfare. Future efforts attempting to enforce the prohibition on tail docking should not only attempt to overcome structural barriers, but also focus on communicating with and changing the perceptions of pig farming professionals. By tackling the reluctance to try non-docking, producers can gain more experience and confidence with raising long-tailed pigs. To create sustainable changes in tail-docking practices, in addition to optimising the environment for pigs, communication should focus on changing attitudes and reducing risk perceptions.

Predicting footpad lesion scores of Dutch broiler flocks using routinely collected data

Smart Agricultural Technology, 2025

Yara Slegers, Miel Hostens, Sjaak de Wit, Arjan Stegeman, Dan B Jensen

Footpad lesions (FPL) are a prevalent welfare concern in broilers, influenced by various factors such as farm management practices and season. In the Netherlands, FPL scores are monitored at slaughter and linked to corrective measures. Early prediction of FPL scores could enable timely interventions. This study investigated the potential of routinely collected data to predict FPL scores at slaughter. Data from 592 broiler houses, each with at least 30 consecutive flocks, across 190 farms were included. The ability of various models to predict FPL scores above or below the threshold of 80 was compared. These models included univariate dynamic linear models (DLMs); multivariate DLMs using weather data of the first week of the production cycle; and random forest models using previous flock scores or DLM output, first-week weather variables, and current and previous flock and farm characteristics. Incorporation of DLM output in the random forest model provided the numerically highest performance, although this was not significantly better than the random forest model with raw previous flock scores. This model achieved an ROC AUC of 0.70, with the best threshold yielding a sensitivity of 74.4% and specificity of 60.2%. Previous flock FPL was the most important predictor, followed by the fraction of birds thinned, flock size difference between previous and current flock, and outside humidity. These findings highlight the value of weather variables in predicting FPL scores. Future research should explore additional factors which could explain within-house variation, such as indoor climate and feed changes, to improve predictive accuracy.

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Applied research note: exploring the relationship between first-week mortality and performance after the first week in broiler chickens

Journal of Applied Poultry Research, 2025

Yara Slegers, Mieke Matthijs, Arjan Stegeman, Miel Hostens, Sjaak de Wit

First-week mortality (FWM) is considered an important indicator of chick quality in broiler production, but its association with later performance is understudied. Data from 1,142 production cycles across 175 farms belonging to an Italian integrator were analyzed to identify links between management factors at the broiler farm and FWM, and explore the association between FWM and mortality after week 1, daily gain, and FCR. Median FWM was 0.95 % and median total mortality was 3.42 %. Factors associated with FWM were year and sex. For each 1 % increase in FWM, mortality after the first week increased by a factor 1.08 (95 % CI: 1.03 – 1.13, p = 0.002), adjusted for year and sex. However, FWM was not associated with daily gain or FCR. These results suggest that early mortality reflects vulnerabilities that persist throughout the production cycle, increasing later mortality without compromising growth performance. Variance in FWM was largely attributable to within-farm variance. Future research could explore how day-old chick quality contributes to both early and late mortality in broilers.

Combining dynamic generalized linear models and mechanistic modelling to optimize treatment strategies against bovine respiratory disease

Veterinary Research, 2025

Carolina Merca, Baptiste Sorin-Dupont, Anders Ringgaard Kristensen, Sébastien Picault, Sébastien Assié, Pauline Ezanno

Bovine respiratory disease (BRD) is a major health challenge for young bulls. To minimize economic losses, collective treatments have been widely adopted. Nevertheless, performing collective treatments involves a trade-off between BRD cumulative incidence and severity, and antimicrobial usage (AMU). Therefore, we propose a proof-of-concept of a decision support tool aimed at helping farmers and veterinarians make informed decisions about the appropriate timing for performing collective treatment for BRD. The proposed framework integrates a mechanistic stochastic simulation engine for modelling the spread of a BRD pathogen (Mannheimia haemolytica) and a hierarchical multivariate binomial dynamic generalized linear model (DGLM), which provides early warnings based on infection risk estimates. Using synthetic data, we studied 48 scenarios, involving two batch sizes (small and large), four farm risk levels for developing BRD (low, medium, balanced, and high), two batch allocation systems (sorted by risk level or randomly allocated), and three treatment interventions (individual, conventional collective, and DGLM-based collective). In high- and medium-risk scenarios, collective treatments triggered by the DGLM were associated with a reduction in BRD cumulative incidence and disease severity, especially in large populations. Compared with conventional treatments, DGLM-based collective treatments typically result in either lower or equivalent AMU, with the largest reductions being observed in medium-, balanced-, and high-risk scenarios. Additionally, the DGLM estimates of infection risk aligned well with the empirical risk estimates during the first time steps of the simulation. These findings highlight the potential of the proposed decision support tool in providing valuable guidance for improving animal welfare and AMU. Further validation through real-world data collected from on-farm situations is necessary.

Issue 4
October 2025

News and updates.

GBADs & DECIDE webinars

DECIDE and GBADs continue hosting joint seminars. Two more editions have been organised in 2025: Webinar #8 – Quantifying the impact of animal disease and Webinar #9 – Tools for decision-making: turning data into actionable information. You can now find all recordings on our website.

Watch all

DECIDE at international conferences

Over the past months, the DECIDE partners have presented their research at several international conferences across Europe. Numerous DECIDE contributions were showcased at events such as SVEPM, ESPHM and ISESSAH. Read about their experiences and explore the photo gallery in the articles below.

SVEPM ESPHM ISESSAH

More news

Animal Disease Surveillance Cluster Event.

On 25 March 2025, DECIDE partners organised a successful cluster event in Berlin, Germany. This networking event brought together representatives from several key EU-funded projects focused on animal disease surveillance and farm data sharing, aiming to foster deeper collaboration, exchange knowledge and address shared challenges.

Organised by Innovation for Agriculture with support from Utrecht University and accelopment, the event convened researchers from both EU and non-EU funded initiatives working in the field of animal health. Participating projects included EU-FarmBook, BIOSECURE, aWISH, TechCare, Digi4Live, Doorcas Africa, Complexity Science Club, each contributing valuable insights from their unique approaches to disease monitoring and data-driven innovation.

The event focused on two core themes:

- Data access and re-use for animal disease surveillance tools
- Data-driven tools and stakeholder needs

Find all details about the event including the format, programme and key outcomes on our website.

Read more

Issue 4
October 2025

DECIDE

Save the Date: DECIDE Final Event

10 June 2026 | Brussels, Belgium

As the DECIDE project nears its conclusion in June 2026, we are pleased to invite you to the DECIDE Final Event, which will take place on 10 June 2025 in Brussels, Belgium. The event will feature presentations of the DECIDE tools and results, as well as discussions and reflections on lessons learned. The detailed programme and further information will be announced soon.

Join us as we celebrate the achievements of the DECIDE project together!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000494. This document reflects views of author and the European Commission is not responsible for any use that may be made of the information it contains.