Advanced Health Management in Salmon Farming: Data, tools and economic impact

GBADs and DECIDE seminar series
10/07/2024

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Salmon aquaculture
Many types of data

“After careful consideration of all 437 charts, graphs, and metrics, I’ve decided to throw up my hands, hit the liquor store, and get snockered. Who’s with me?!”
Using data to support day-to-day health management of farmed Atlantic salmon.

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https://decideproject.eu/
Main themes

- Multifaceted challenges in salmon health management
- The essential role of data in health management
- Data supporting/partially driving decision-making

Salmon health: co-morbidity, environmental challenges
Management: lack of time, lack of treatment options, staff turn-over, standardization protocols, challenge balancing health-welfare-economics-interest

Other factors: historical experience, clinical picture, economic and ethical considerations, legislation & regulation

Support: clinical presentation supported by effective and efficient data use
Resources: many different digital products
Data life cycle

- Sharing data to monitor salmon health
  - Sharing for co-benefits
  - Legislation and regulations
  - Misuse and misinterpretation of publicly available data

- Timely data update
  - Context-based data
  - Standardised data
  - Data quality

Data Lifecycle

Data sharing

Data generation, collection, recording, and uploading

Data analysis

Data management

Data access

- Intuitive data visualisation, analysis and interpretation

- Convenient data access

- User-friendly data management
Data quality is key
Data tools need to be:

- Stakeholder specific
  - Health managers
  - Production managers
  - Inspectors (government, certification)
- Simple
- Integrated into existing software
- Timesaving
- Provide visual dashboards
- Include a selection of only relevant information
Understanding sample size

https://epidemiology.sruc.ac.uk/shiny/apps/gillhealth/
Using AI

Sandy Carmichael
2-day in-person CPD course

- 2024 Epi concepts and data visualisation for fish technicians
- Session 1: Basic epidemiology terminology
- Session 2: Diagnostic tests: understanding test characteristics, and interpreting test results
- Session 3: Data and data visualisation
- Session 4: Evaluating and utilising statistical evidence to inform clinical judgment and practice
Take home

- Data is important in aquaculture
- Data tools can help with health management
- Communication about tools is important
This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 101000494.