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Addressing Amoebic Gill Disease (AGD) in Salmon Farming

CHALLENGES AND OPPORTUNITIES

Per Kristian Sætre
Global Fish Health Manager

We are Health Management Specialists Providing Worldwide Concepts and Technologies for

Fish and Shrimp Disease Prevention & Control

Bath- and Mechanical TREATMENTS for **Sea Lice** and **Amoebic Gill Disease** (AGD)

Diverse **TEAM OF EXPERTS**

Aquatiq® **DOSING SYSTEMS**

SOLVAY Eco-friendly Aquaculture **HEALTH PRODUCTS**

SEATRU™ **TOTAL POND HEALTH** Management Platform (ponds & land-based)

50/50 JV SOLVAY AND AQUATIQ

Combating AGD in Salmon Farming

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Scientific Data Needed

Lack of scientific data and **standardization** for combating Amoebic Gill Disease (AGD) in salmon farming.

Guidance and Collaboration

Guidance from sector on possibility to collaborate on research for introduction of **localized, country-specific management strategies.**

Information shared in this presentation is based on observations from various sources, including a 2023 AGD seminar, field observations, feedback from salmon companies, and insights from veterinary research organizations.

Increased Occurrence Globally

AGD is a persistent challenge in global salmon farming

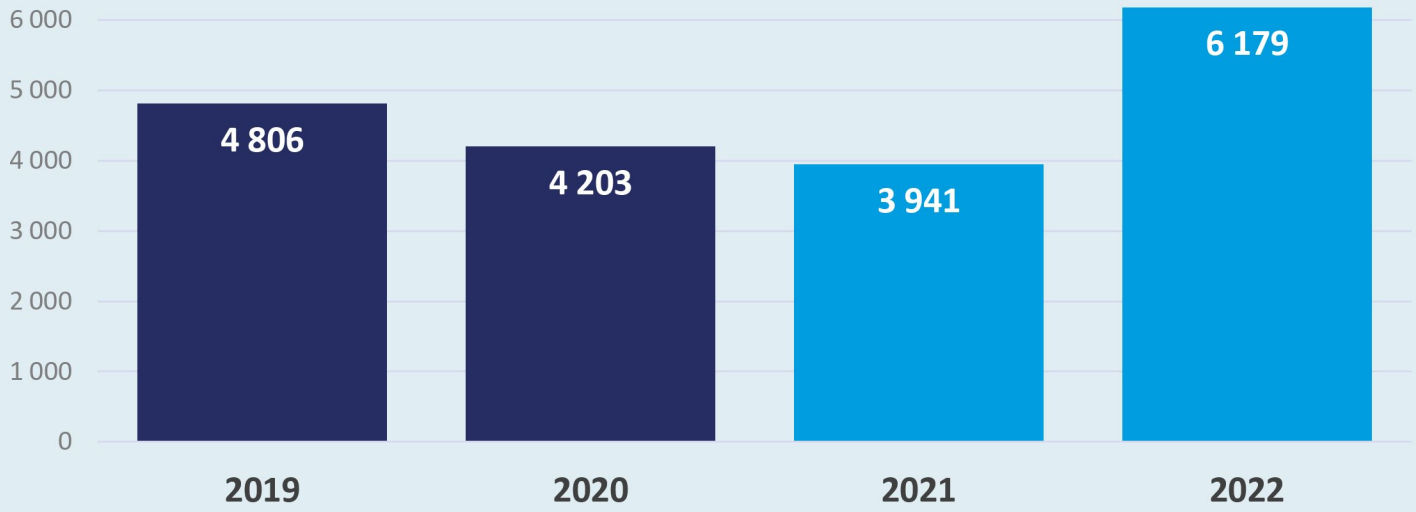
Companies in Scotland, Chile, and Norway report surges in AGD outbreaks, especially during summer and autumn when rainfall is at its lowest and salinity higher. These conditions seem to create a favorable environment for AGD.

AGD has transitioned from a seasonal issue to year-round due to rising sea temperatures and other factors

Source: Aqua Pharma Group

AGD treatments in Scotland - Example from major operator

Increase in treatments over last 4 years, numbers doesn't tell the whole story



Developments in Monitoring and Detection

AGD leads to severe consequences for fish welfare:

- High mortalities
- Reduced growth
- Increased poor-condition fish, susceptibility to diseases, and mortalities during lice treatments

Source: CSIRO, Australia

Encouraging developments:

- Gill scoring
- Histopathology
- PCR testing

Standard Monitoring Practices. Well embedded globally.

Challenges:

Gill scoring subjectivity, leading to **delayed detection.**

Innovative approaches like Ct values are emerging for better quantification of AGD.

Source: 2023, Pharmaq Analytiq AS

Challenges in Surveillance and Control of the Amoeba

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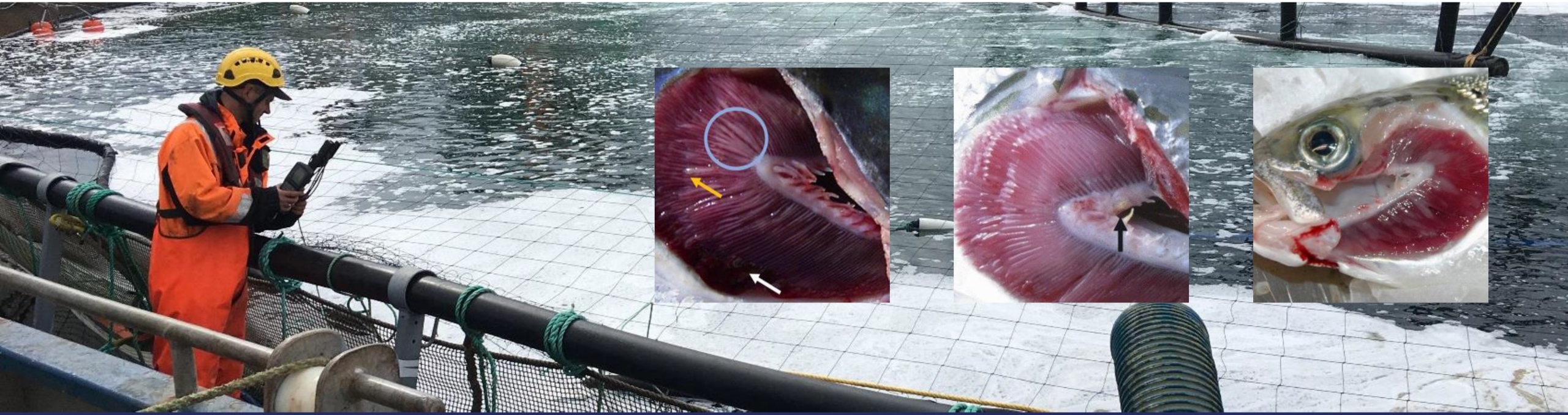
Surveillance and control are complicated
due to subclinical forms, complex gill diseases (CGD), and a lack of effective treatments.

CGD can lead to mortality even without fish handling.

Observations include petechia on gills during spring/summer and chronic changes in the fall.



Only Two Main Treatment Options: Freshwater and Hydrogen Peroxide (H_2O_2)

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Freshwater

favored, but requires well boats

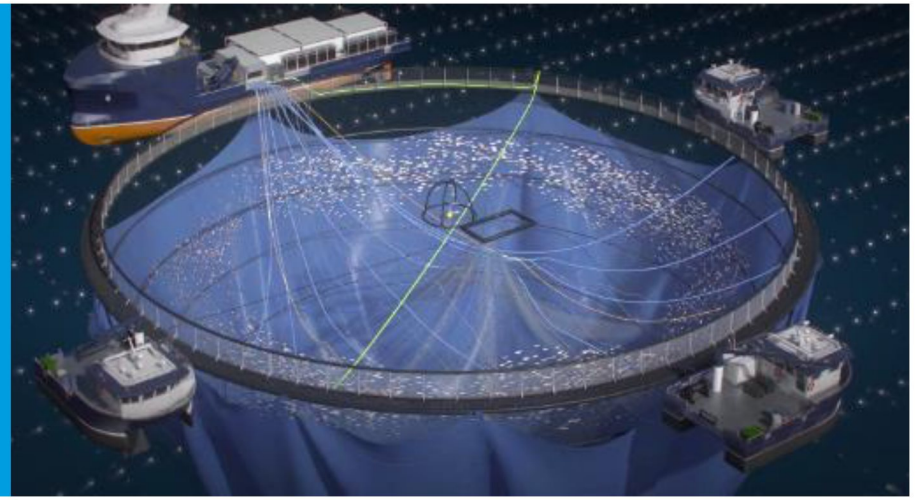
more extensive handling

H_2O_2

alternative

Possibility to treat in cage with tarpaulin setups

reduced fish handling



Source: Aqua Pharma, Scotland observations

How Science can Help

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Salmon farming companies globally seek scientific research to optimize surveillance and AGD prevention

Improved **diagnostic tools**, **treatments**, and **prevention strategies** to reduce economic losses.

Better understanding of **AGD's ecology** for more sustainable practices.

Tailored, localized strategies are essential due to regional variations.

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Call-out for guidance

More collaboration and research towards standardized surveillance,
improved detection,
and optimized treatment strategies

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