

**Thursday Afternoon, September 6th – MacDonald
QASH 3**

Moderators – Karin Pittman, Mark Powell, Robin Shields & Linda Andersen

1:10 PM	Welcome Back !
Available Tool Boxes Session - Robin Shields & Linda Andersen (Moderators)	
1:15 PM	<u>Nylund</u> - The Do's And Don'ts Of Real Time RT-PCR As A Tool In Fish Diagnostics: Evaluating Important Parameters, Pitfalls and Results Bias
1:30 PM	<u>Berg</u> - HealthPortal: Putting Production, Health And Environmental Data To Use For The Aquaculture Industry
1:45 PM	<u>Workshop 2</u> - Tool boxes available - Ease of use, global applicability, time usage? Integrated pest management and threshold values to elicit a response?
2:15 PM	Overview Of Results, Comments, Volunteers For Core International QASH Proposal Work
2:45 PM	The Knowledge Gaps And Missing Tools In The Toolbox; Core QASH Objectives For 2019
3:15 PM	Concluding Remarks



8th International Symposium on Aquatic Animal Health

September 2-6, 2018 - Charlottetown, Prince Edward Island, Canada



The Do'S and Don`Ts of Realtime RT-PCR as a Tool in Fish Diagnostics: Evaluating Important Parameters, Pitfalls and Result Bias

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Molecular methods for use in fish diagnostics have been around for quite some time, both as tools for detection of pathogens and for use in quantitative analyses of gene expression. It has to a large degree replaced tried and true diagnostic methods in veterinary medicine, both in universities and veterinary colleges, and is supplied as commercially available products by several private laboratories linked to the aquaculture industry.

In Norway, realtime RT-PCR has become the staple method for monitoring and detecting pathogens during production of Atlantic salmon, due to its advantages in high sensitivity of detection, high specificity and the possibility to perform high- throughput analyses on a population scale. As a result, many different laboratories strive to design the highest performing assay for detection, identifying the best method for fish tissue processing, and how to interpret the outcoming results for use in setting a diagnosis. This increase in method development and optimization of performance, while positive, also have some negative impacts. Since different laboratories can employ different methodology, results are often not directly comparable between laboratories, and the interpretation of the results and their relevance in setting the correct disease diagnosis, will not always be straightforward.

The topic of this talk is to highlight some of the key parameters that will affect results of a realtime RT-PCR run. This includes choice of tissue for sampling, method for nucleic acid extraction and relevant factors that have to be taken into account when designing an assay for use in fish diagnostics. How to interpret the results, and how they are used in decision making, alongside complementing methodology will also be discussed.

Conference Session Designation:
Presentation Format:

(QASH)
(Oral)



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Healthportal: Putting Production, Health And Environmental Data To Use For The Aquaculture Industry

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Benchmark Holdings have developed “HealthPortal” with input from leading Norwegian health care providers, including Marin Helse. HealthPortal is a tailor-made cloud-based data portal enabling aquaculture producers to keep track of, share and make use of production, health and environmental data. It is designed for producers and health providers to seamlessly collaborate, analyse and view critical information to improve the management of fish health and welfare and the environment. HealthPortal allows for the collection and integration of key health and welfare indicators such as mortality and sea lice burden within a user-friendly dashboard. These data are represented graphically and used to observe trends over time, allowing producers to monitor the health and welfare of their fish and communicate easily with health care providers.

Health care providers can use HealthPortal for everyday report writing, documentation storage, prescription provision and ordering analyses from laboratories. Producers can use HealthPortal to collate and streamline inputs from several health care providers, and to examine in-depth data such as causes of mortality e.g. disturbances, transport and sea lice by individual life-cycle stages. Through alert functions, producers can be warned if key indicators change – such as oxygen levels, feeding levels and mortality - enabling fast corrective action. Furthermore, health care providers can use HealthPortal to schedule visits with producers and generate post-visit veterinary reports which appear directly in producers’ portals. From the dashboard, producers can order prescriptions and send samples for analyses such as qPCR; the results of which are uploaded by the laboratory and easily accessed by producers. Producers can share data with scientists, enabling scientists to make use of previously unavailable production, health and environmental data

HealthPortal is currently being used by health care providers, producers and scientists in Norway and Scotland. This new technology is highly valuable for both small-scale producers and for companies operating sites in multiple locations, as it allows for worldwide management and benchmarking of all sites. By integrating numerous indicators of health, welfare and the environment, HealthPortal represents a powerful tool to monitor and ensure long-term health and high productivity in farmed fish. HealthPortal has the potential to help the salmon industry lead the worldwide trend towards more sustainable aquaculture, incorporating high animal welfare standards, improved production and a low environmental footprint.

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