

# **Keynote Presentation**

Thursday September 6<sup>rd</sup>

## **“ Without Good Fish Health – No Blue Revolution “**

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Marine Harvest is the fourth biggest seafood company in the world and the world's largest salmon producer. Marine Harvest operates in 24 countries and farm salmon I Chile, Canada, Scotland, Ireland, Faroe Island and Norway. Salmon from Marine Harvest can be bought in more than 80 countries in the world. The salmon farming industry and Marine Harvest has over the years grown significantly, the CAGR is 7 % over the past 20 years, but with reduced growth in the past few years. Salmon farming is in most areas where it is done a highly regulated industry, but the reason for the reduced growth is more linked to a more challenging environment regarding fish health.

Food from the ocean is a limited source of nutrition's, in 2017 the ocean supplied only 5 % of the proteins consumed by the world's population. Fish farming is an old form of producing food and in China it started more than 2000 years ago. Farming the oceans is a newer industry and started in Norway in the mid 1960's. Marine Harvest is a pioneer in this industry and has its roots back to 1964 in Norway. Today farmed salmon is still a minor supplier of food with a share of 4,2% all seafood, but the most industrialized of any specie being farmed. The potential in the industry is much larger and market for the product has been steadily growing worldwide.

The biggest challenges to increase output from salmon farms are fish health related. In most countries the single biggest challenge is linked to a parasite called in general called “salmon louse”. The salmon louse is natural to wild salmon, but has an excellent environment in farms with access to plenty fuel number of hosts. The parasite in small numbers will not kill the host, but in large numbers it has the potential to create major damages to the salmon and invite other diseases in, because the immune system can be badly damaged. Many treatments against salmon lice have been developed, but the common denominator is that the parasite is able to build resistance to almost all of them. Marine Harvest has a broad approach in the war against this parasite, including everything from cleaner fish, to very sophisticated ways of cleaning, and thus removing the lice. Freshwater and other means are also developed, and a well thought through lice strategy developed over the past few years. Still this is the industry single biggest issue and the one that is limiting our goal of producing more healthy food from farming of salmon. The solution is maybe not developed yet, but new genetic tools show significant potentials, and even more can be done through good cooperation between farmers and a well thought through production plan involving size of smolt and a coordinated pest management treatment regime.

If we are to be successful with our blue revolution and supply more energy efficient and healthy food from the ocean, it is essential to find solutions for the salmon louse. In the same time, we should continue good R&D in terms of further improving fish health in general. Good examples from the past with excellent development of vaccines against bacterial diseases and newer solutions towards virus diseases like IPN or IHN give me good hope that solutions will be found towards today's and future challenges regarding fish health, securing the population more food from the oceans, produced in the best possible way. Combining traditional fish health work with nutritional requirements and with help from DNA based solutions will be essential.



**8<sup>th</sup> International Symposium on Aquatic Animal Health**

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

