Sea Lice in Faroese Salmon Farming

Peter Østergård
DVM
Sp/F Aquamed.fo
Bergen 10-02-2010
Faroe Islands
Faroe Islands

18 islands
113 km north-south
75 km east-west
1393 km²
Pop: 48,660 (jan 2010)
Farmed fish, Gw: 48,662 tonne (2009)
Production numbers

Av laksi var tikið 51.500 tons og 8.800 tons av sílum - gjørt upp í rundari vekt.
Sealice in the Faroes

- Traditionally most problems with *Caligus elongatus* but in some regions *Lepeophtheirus salmonis* has been troublesome too.
- *Caligus* infestations often seems to be a “come and go” event – even if massive numbers it can suddenly almost disappear without any treatment.

- Lack of historical data
  - Systematically work was done in the early 1990’ties when we last had problems with reduced sensitivity ......
Sealice in the Faroes

- Since 2001 all smolts treated with Slice prior to release in seawater farms
- In many farms one more treatment with Slice around 500 grams
- In a few farms additional treatments later in production with pyrethroids
Faroese situation

- Serious problems in 2009

- Reduced sensitivity to pyrethroids and emamectin-benzoate in region Sundalagið
- Higher numbers of Salmon Lice in other areas than normal
Region Sundalagið
Summer 2009

- Very high number of Leps on several farms in region Sundalagið
  - Several treatments
    - Alphamax
    - Slice
  - Little or no effect of treatment was seen
    - Resulting in more lice in other areas
  - “Old” therapeutics
    - Salmosan treatment – effective
      - but due to heavy infestations rapid need for new treatments
    - *Salmosan treatment = no export to the USA*
“New” compounds

- Hydrogen peroxide
  - Will be used in wellboat-treatment

- Diflubenzuron
  - Being used in one farm now – with salmon lice showing reduced sensitivity against pyrethroids and emamectin
Faroe Island 2010

- New legislation on sea-lice in force.....
- DO 163 21.12.2009 Surveillance and control of lice on farmed fish
Faroe Island 2010

- DO 163 21.12.2009 on Surveillance and control of lice on farmed fish
  - First time all farmers are obliged to count and registrate numbers of sealice on a regular base
    - Levels for mandatory treatment (Leps):
      - 2 adult females
      - 10 moveable lice
  - Closed bath treatment from 01.05.2011......skirts until then
  - Evaluation of all treatments
  - The authorities can demand coordinated treatments
Sea Lice counting and monitoring

- P/F Fiskaaling
  - Contracted to counting sealice in almost all farms
  - Responsible for reporting count results to all involved farms
  - Improve counting and sampling methods

www.fiskaaling.fo
Sensitivity testing

- P/F Fiskaaling
  - Responsible for performing sensitivity tests
  - Reporting all results to all farmers involved in the coordinated countings and sensitivity testings
Sensitivity testing

- Reduced sensitivity
  - Pyrethroids
    - Betamax
    - Alphamax
  - Emamectin-benzoate
  - Slice

- Full sensitivity
  - OP’s
    - Salmosan
Research on sealice
Research on sealice

- We are planning a project to give us information on how the salmon lice are spread in the Faroes.
  - “Who infects who” and how is the infection maintained

  - Real-time PCR on water samples – nauplius and copepodits
    - “Ocean” samples
    - Fjord samples
    - Farm samples
  - Compare to licecount-numbers
  - Collaboration with the Faroese current-modelling project
Alternative measures to control...

- Cleanerfish
  - None of the wellknown cleanerfish are found in the Faroes
  - We really want to try this way, but import of a new species which will find its way to freedom.....
    - Importallowance for wrasse has been applied for....
      - The Veterinary authorities seems to be the right address, but...
      - What about “all-female” or triploids wrasse?

- What about lumpfish?
  - Native fishspecies in the Faroes

- Biological – infections etc....
Important issues

- Management
  - No licefactories
  - Open fjords with good exchange of water
    - Wellboat-transport on closed valves and desinfection of transportwater
    - Single yearclass production and fallowing
  - Fallowing of regions
  - Coordinated strategic treatments