

Health Issues of Atlantic Halibut

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NOVA SCOTIA

Health

- # 4-6 visits a year
 - # Autopsy
 - # Bacteriology
 - # Virology
 - # Histopathology
 - # 20-60 fish per visit
- 
- An underwater scene with a dark blue background. In the foreground, there are several stalks of seaweed or eelgrass with long, thin, wavy blades. To the right, there are several blue bubbles of varying sizes rising towards the top of the frame. The bottom of the image shows a light blue sandy seabed.

Results

Aquareovirus
Nodavirus
Infectious Pancreatic*
Necrosis

Trichodina
Cryptocotyle
Sea lice*

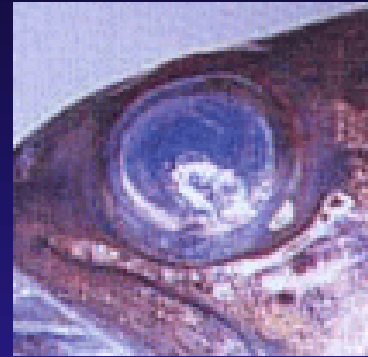
Vibriosis*
Bacterial Enteritis*
Atypical furunculosis*

Cardiomyopathy/
Epicarditis
Eye Pathologies
Larval/Postweaning*
Mortalities

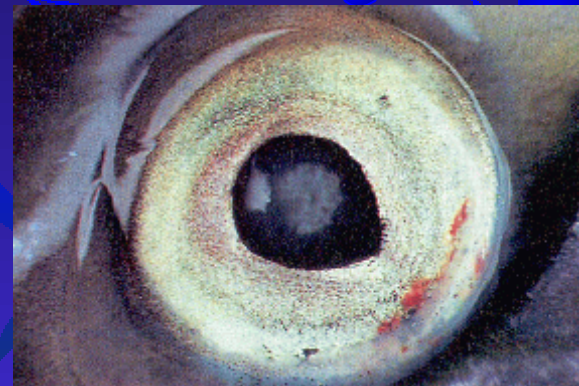
Vaccination

Eye Lesions

Lesions: Ablation
Corneal opacity
Cataracts

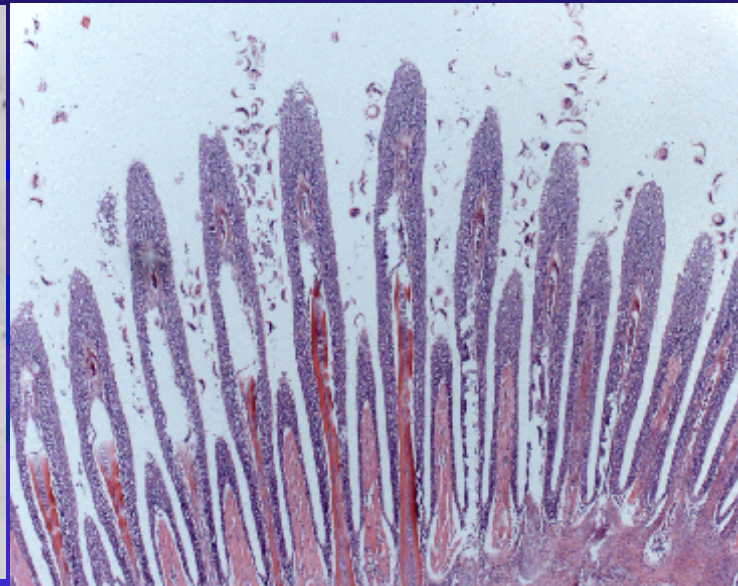


Rule-outs: Physical
Infectious 1^o, 2^o
Nutritional
Metabolic
Congenital



Trichodina Infections

- # Identified by Anne Clarke
- # Effect on appetite...observed in halibut rearing
- # Formalin 1:4000 eliminated the parasite



Cryptocotyle

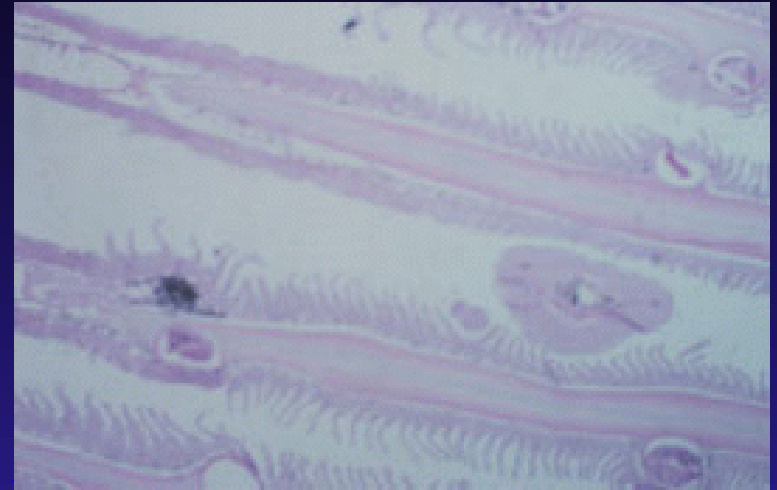
Pathogen of Atlantic halibut

: moderate / severe
proliferative branchitis.

Case: Land-based facility
intake change

Halted infection

Pathology
resolved



Aquareovirus Associated Mortality

:Larvae and weaned halibut

:Slow moving, anorexic, enlarged abdomen, levated mortality.

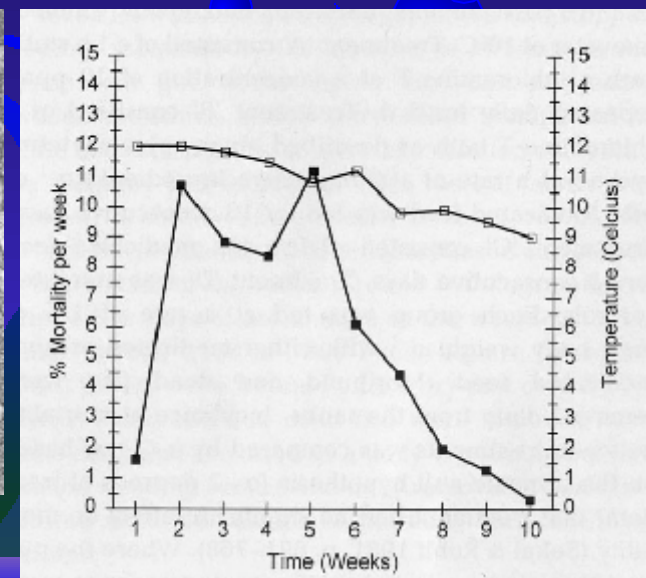
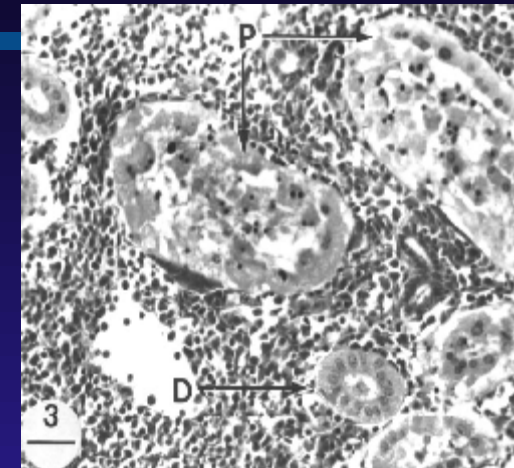
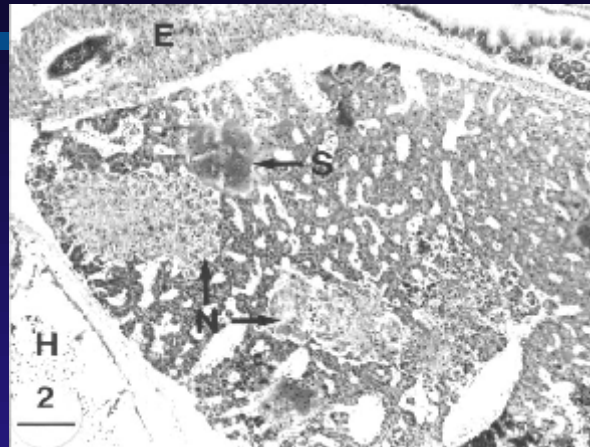
:100% fish with virus

:20% with *Vibrio* infections

:Pathology

: Controlled treatment

Experimental exposed larvae and juveniles- failed to reproduce the disease.



Experimental Challenges of Marine Fishes to Eastern Canadian Nodavirus Isolates and Cross Infectivity Trials

Sources:

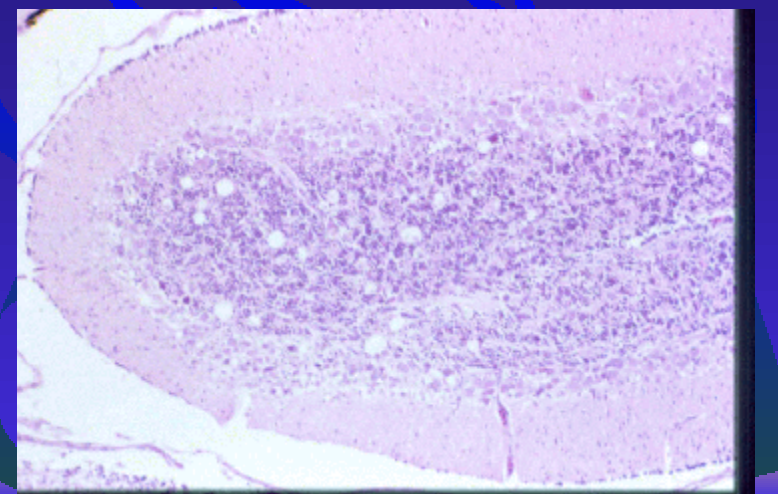
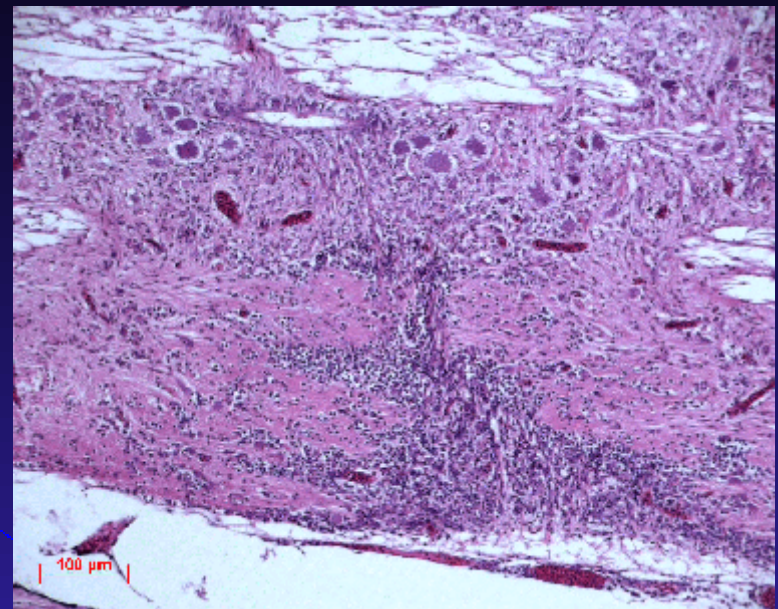
Wild caught cod
Clinical haddock

Challenge:

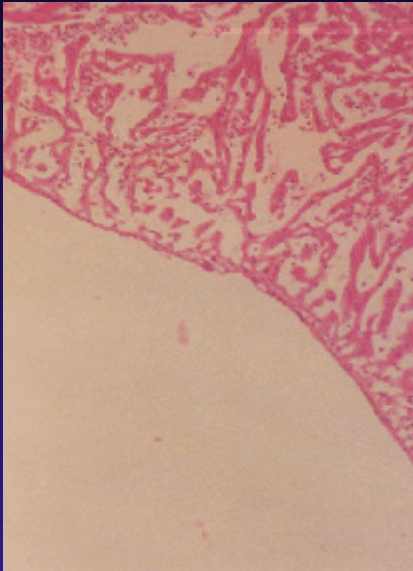
Cod virus in cod, haddock, halibut
Haddock virus in haddock, cod and halibut

Nodavirus Summary

- *Wild cod broodstock are potential reservoirs of infection
- *Cod nodavirus caused high mortalities to cod and haddock
- *Haddock nodavirus high mortalities in haddock and cod
- *Juvenile halibut were refractory to the nodavirus infections
- *Encephalopathy and retinopathy ensued and the virus reisolated
- *Nodaviruses may play a significant role in the survival of cultured and wild juvenile cod and haddock stocks



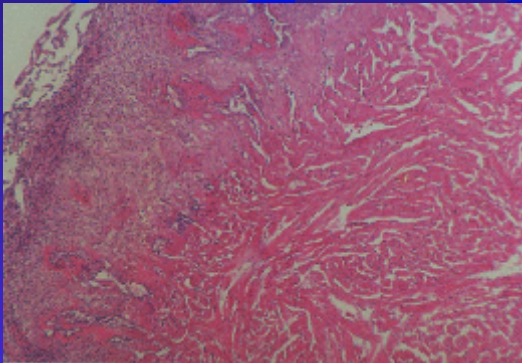
Cardiomyopathy: Epicarditis



Frequency: Common 5 - 50%, large and small grades, multiple sites, 1 gram +

Severity: mild/ moderate

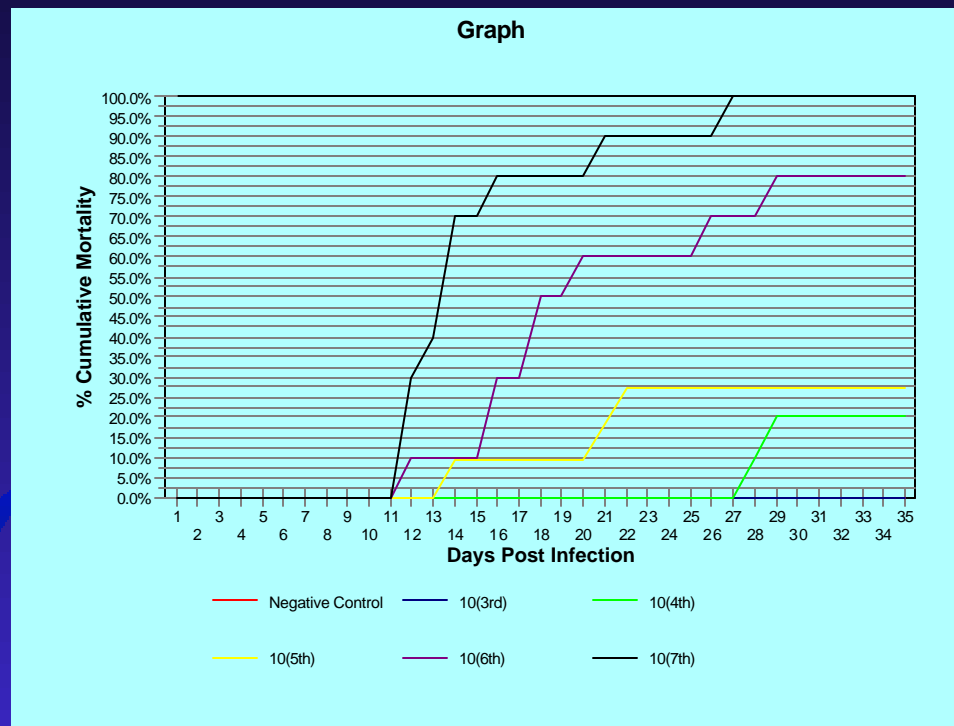
Rule-outs: Parasitic
Fungal
Viral
Bacterial
Nutritional
Congenital/Genetic



Future: Does it affect growth/survival
Cause and affect viral and nutritional

Health

Halibut Vaccine Challenge Atypical furunculosis LD50

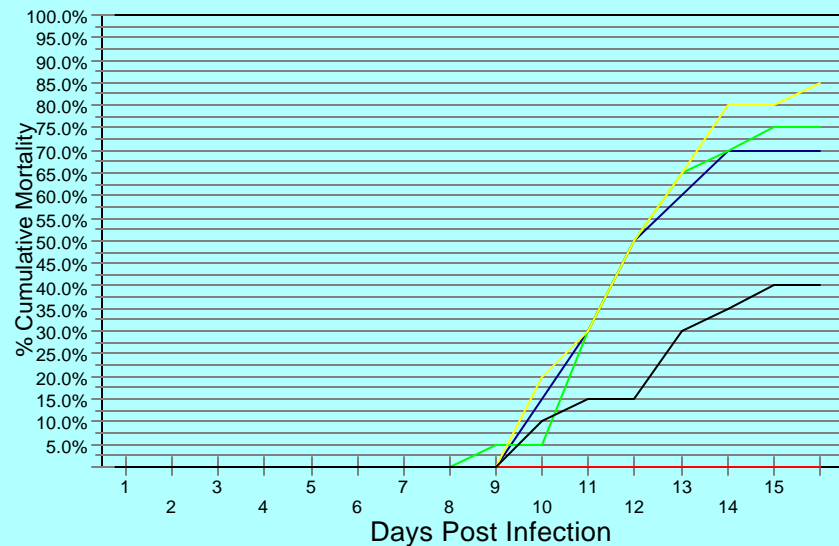


Health

Atypical furunculosis challenge experiments

Challenge 1. 10^6 bacteria/ml

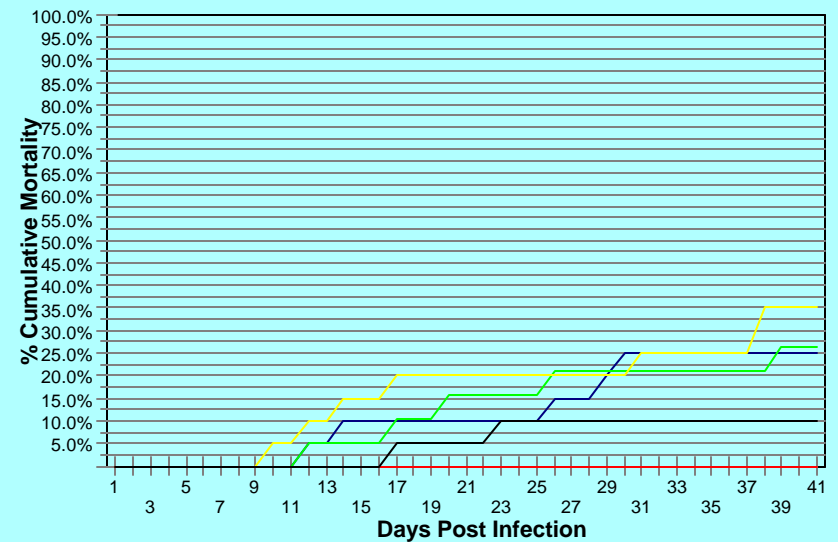
Graph



— Vaccine I — Vaccine II — Vaccine III — Negative Control — Positive Control

Challenge 2. 10^4 bacteria/ml

Graph



— Vaccine I — Vaccine II — Vaccine III

— Negative Controls — Positive Control

Discussion/Conclusions

- # Mortality rate of Halibut post weaning is exceptionally good.
 - # Losses at early life stages are high.
 - # Several identifiable pathogens and disease states exist.
 - # Numerous areas for further investigation exist
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