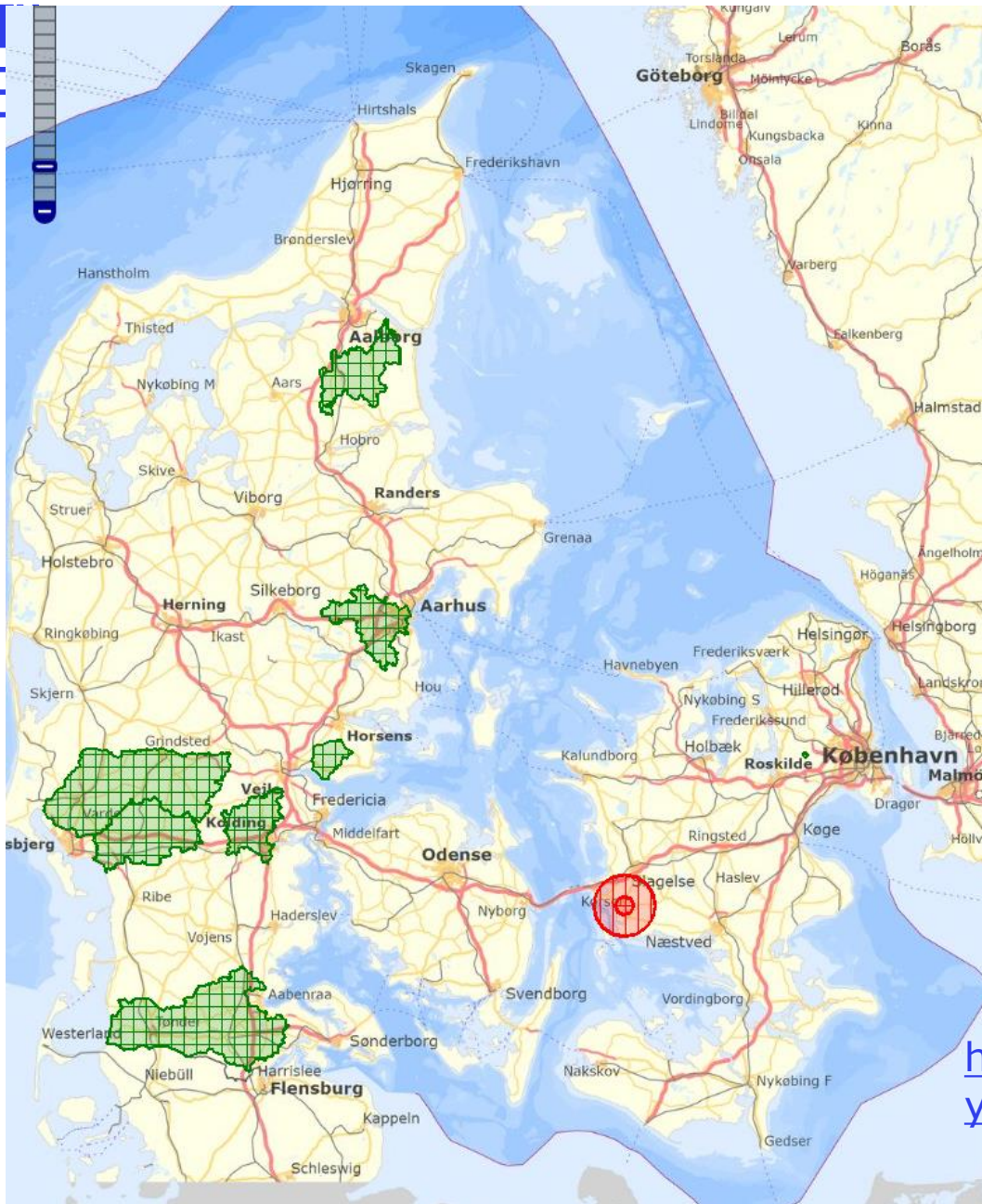


26th Annual Workshop of the National Reference Laboratories for Fish Diseases

IHN in Denmark and the way forward

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IHN – situation December 10th 2021 new status as not IHN free MS

28 of 163 farms are approved IHN free compartments

April 2022 All IHNV infected farms emptied, disinfected and fallowed, except 3 and about to regain status.

<https://foedevarestyrelsen.dk/Dyr/Dyresygdomme/dyresygdomme/IHN/Sider/IHN---Aktuel-situation.aspx>

IHN situation in DK

26.05.2022

**IHN detected again in April 2022-
 On not previously infected farms
 Epidemiological investigations,
 Contact farms identified and sampled
 Genetic analysis: DK-IHNV 2022
 almost identical to IHNV in DK 2021**



IHN outbreak May 2022



Photo: Mona Lyhne



IHN in Denmark and the way forward? Survey:

Assess the de-facto spreading of IHN in Denmark

May 2022: Survey comprising 40 high risk farms

Inspected and sampled by designated fish vets.
30 fish/ farm, examined on cell culture

If clinical signs  CA notified for official sampling



IHN in Denmark and the way forward?

Eradication program:



According to 2020/689

All IHNV infected farms and farms with inlet water having passed infected farm shall drain, disinfect and fallow for 6 weeks (synchronized 3 weeks)

Restocking with certified IHNV free fish

If possible combined with electrofishing removing all rainbow trout



IHN in Denmark and the way forward?

Control program

- ➔ Comprise all Danish fish farms except the 38 IHNV free compartments
- DK divided in approx. 20 zones
- 4 year program
- Survey by cell culture
- RT-PCR in suspect cases
- New outbreak: immediate eradication



COMMISSION DELEGATED REGULATION (EU) 2020/689

Table 1.B

Scheme for Member States, zones or compartments using a reduced sample size for the 4-year control period referred to in point (a)(ii) which precedes the achievement of status free from VHS and status free from IHN

Type of establishment	Number of health visits per year to each establishment	Number of samplings per year in each establishment	Number of fish in the sample (*)	
			Number of growing fish	Number of broodstock fish (†)
First 2 years				
(a) Establishments with broodstock	2	1	30 (second visit)	0
(b) Establishments with broodstock only	2	1	0	30 (first or second visit)
(c) Establishments without broodstock	2	1	30 (first or second visit)	0
Last 2 years				
(a) Establishments with broodstock	2	2	30 (first visit)	30 (second visit)
(b) Establishments with broodstock only	2	2		30 (first AND second visit)
(c) Establishments without broodstock	2	2	30 (first AND second visit)	

Maximum number of fish per pool: 10

- (*) In the case of coastal zones or coastal compartments, the samples must be collected no sooner than 3 weeks after the transfer of the fish from fresh to saltwater.
- (†) Ovarian or seminal fluid of broodstock shall be collected at the time of maturation, in connection with stripping.

IHN in Denmark and the way forward?



Start Jan 1st 2023- 31.12.2026

In the best world: Spring 2027 official status as IHN free MS regained.

BUT!!!!

Many obstacles in front:

Thursday 26.05 Official letter from Danish P&T lakes do no longer support eradication program!

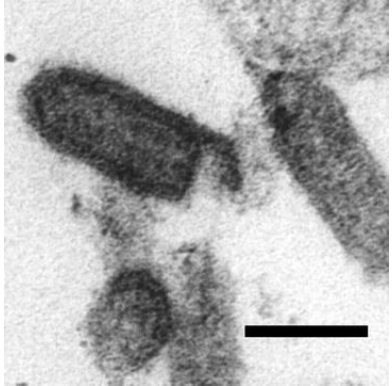
How to compensate?

How to force single farms if not willing to partake?

What if the virus have spread all over?



But remember: IHN virus is not that stable!



- IHNV ssRNA (-) Membrane virus only linked to fish
- Sensitive to most disinfectants, such as Virkon-S, alcohol, halogens.
- Sensitive to temperatures above 28 C and rapid inactivation at temperatures > 40C.
- Cannot reproduce at temp > 24 ° C and thus completely harmless to mammals and birds
- Sensitive to high / low pH
- Sensitive to UV (sunlight) and ozone



Good conditions for control and eradication !!

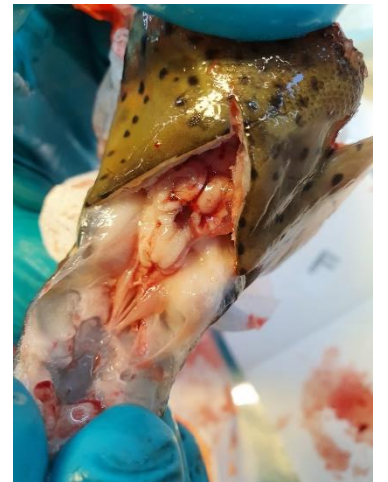
IHN in Denmark and the way forward?

No vaccines are on the market yet and when it comes, it will be expensive.

No compensation from the government. No insurance scheme and no “Trout Fund” to compensate infected fish farms

It is doubtful whether fish farming can live with IHN and at the same time be profitable.

The industry and DK have previously shown that it is possible to eradicate VHS, it must be possible to do it again





Questions?

Thank you for your attention

