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# HPAI H5N1 in fur animals in Finland 2023: What has changed?

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# Testing methods in fur animals

- Virological and serological testing
- Virus detection with RT-PCR
- Sanger sequencing for determination of pathogenicity
- WGS for further genetic analyses
- Serological tests for H5 antibodies
  - Two-phase testing (Inf A ELISA and H5 HI)
  - Methodology based on recommendation from EURL (IZSVe)
- All (fur animal) tests are done in BSL-3 laboratory



Foto: Lauri Kareinen

# HPAI H5N1 in FI in 2023

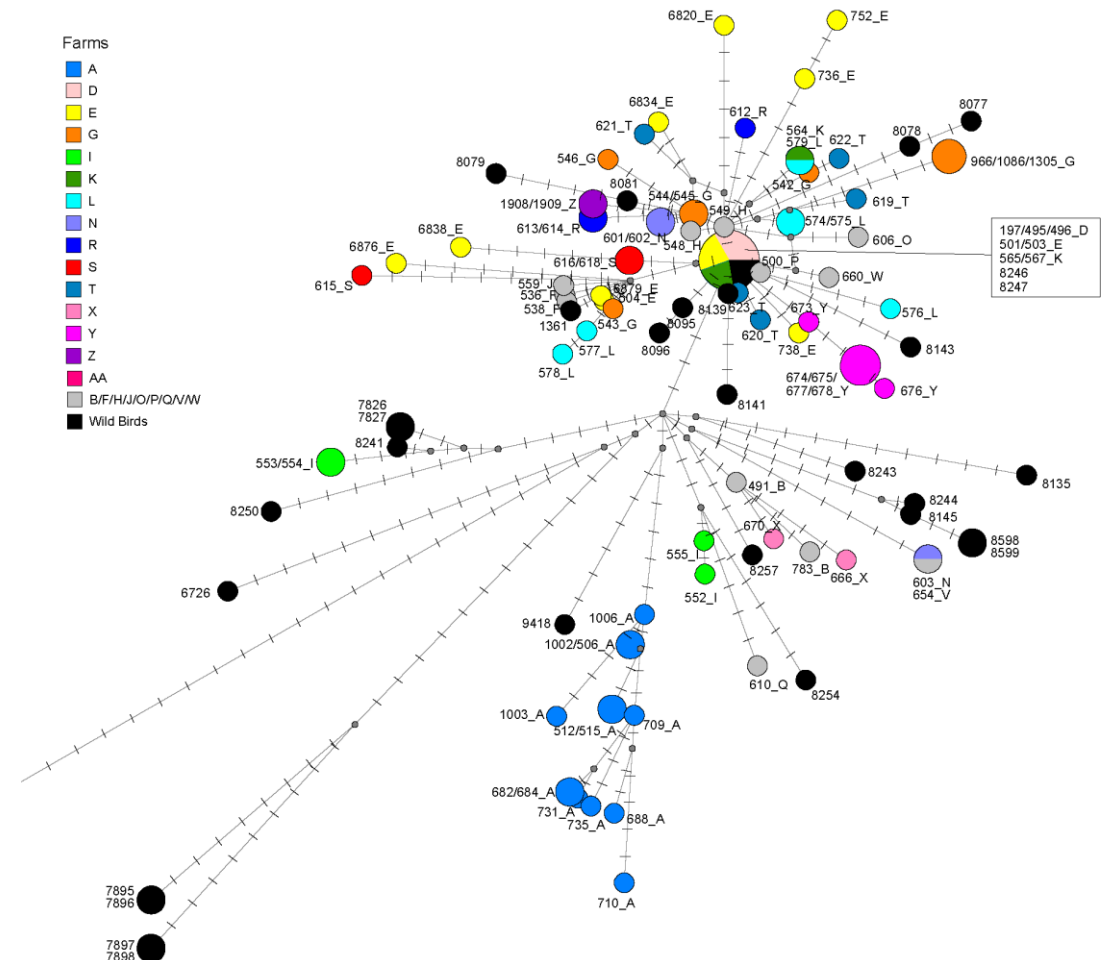


- 43 fur farms tested based on suspicion
- Serological survey on all fur farms Sep-Dec 2023
  - 345 farms, ~25 000 animals
- **71 confirmed cases** (fur farms)
  - 27 farms by PCR, rest by serology
  - ~500 000 animals culled
  - Foxes, minks and raccoon dogs
- 36 outbreaks (77 positive birds) in wild birds
- 4 cases in wild mammals (red fox, otters and lynx)

# Results of genetic analyses



- Most likely source of introduction was direct contact with wild birds
  - Very close (96-99% identity) to bird strains
- Strong evidence for animal-to-animal transmission and spread between farms
  - Some farms have multiple introductions
- Several mutations known to facilitate viral adaptation to mammals





## OUTBREAKS

# Highly pathogenic avian influenza A(H5N1) virus infections on fur farms connected to mass mortalities of black-headed gulls, Finland, July to October 2023

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Foto: Lauri Kareinen



# What has changed?



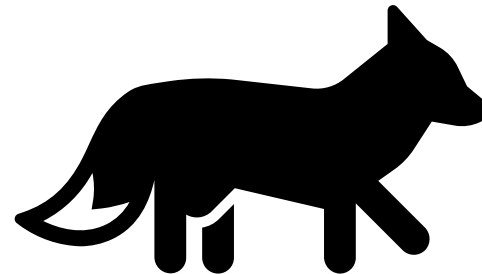
- According to Finnish legislation HPAI in fur animals is classified as “other animal disease to be combated”.
- Improvement of biosecurity on fur farms
  - Biosecurity measures according to Ministerial Decree 14/2024 (implemented 15.4.2024)
  - Prevent birds from coming into contact with fur animals or feed, drinking water, bedding, equipment etc.
    - Nets or other suitable material
  - All fur farms officially visited to check for their biosecurity measures



Foto: Anna-Maria Moisander-Jylhä

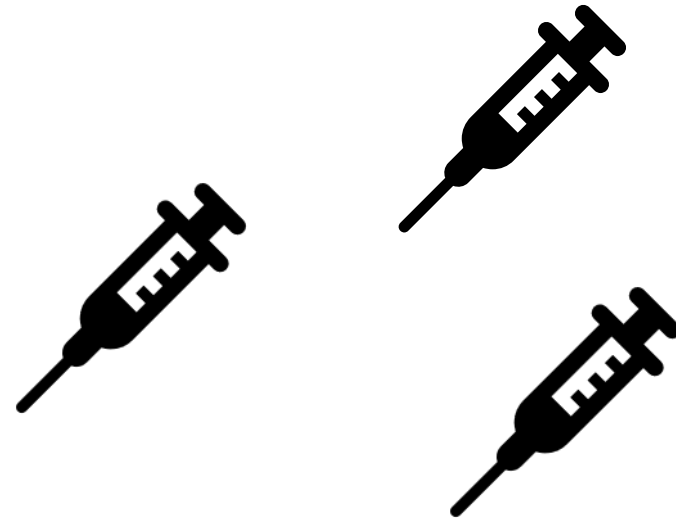


- Surveillance on all fur farms in June – September 2024
  - Fur farmers have to submit 3 dead or culled animals every third week
  - ~260 farms, ~2750 (lung) samples tested
    - PCR
    - ELISA (from lung fluid)
    - All negative
- To be continued...?





- Vaccination campaign for humans
  - Zoonotic Influenza Vaccine Seqirus: against flu caused by H5 strains of the influenza A virus
  - Only about 4% of target group has taken the vaccine
  - Many fur farmers are "anti-vaccine" in general







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**Thank you!**