

**WATERFOWL PRODUCTION,
HEALTH AND WELFARE IN POLAND
IN FACE OF HPAI H5 CRISIS**

Piotr Kwieciński DVM, PhD



AGENDA

Introduction

Waterfowl production in numbers

Waterfowl health problems

- Short beak and dwarfism problems in ducks
- Erysipelas in geese
- Polyomavirus in geese
- HPAI in geese and ducks

Waterfowl welfare problems

FVE/UEVP



CLINIC (1990)



LABORATORY (2003)



WAREHOUSE (2009)

COMPANY STRUCTURE



VET-LAB IDEA

Vet-Lab Brudzew
NIP 6681017015

ul. Turkowska 58c
tel. 63 279 70 04

62-720 Brudzew
vetlabbrudzew@interia.pl

www.vetlabbrudzew.pl

250 PEOPLE:

- **80 VETERINARIANS**
- **50 MICROBIOLOGISTS**
- **40 VET TECHNICIANS**
- **ADMINISTRATIVE PERSONEL**
- **AUXILLIARY VACCINATION TEAMS**

VET-LAB TEAM

- **POULTRY**
- **SWINE**
- **CATTLE**

Services:

- **prophylactic programmes**
- **treatment of animals**
- **performance analysis**
- **nutritional advice**

SCOPE OF ACTIVITY

- farm owners
- veterinarians
- feed mills
- state veterinarians
- other practices
- pharmaceutical companies
- universities and science institutes
- Polish National Veterinary Chamber

SCOPE OF COOPERATION



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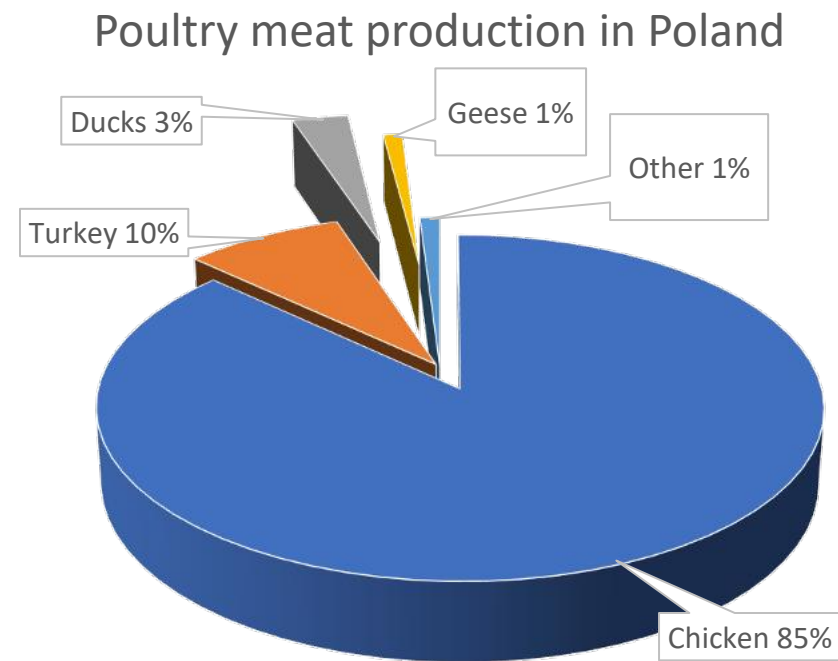
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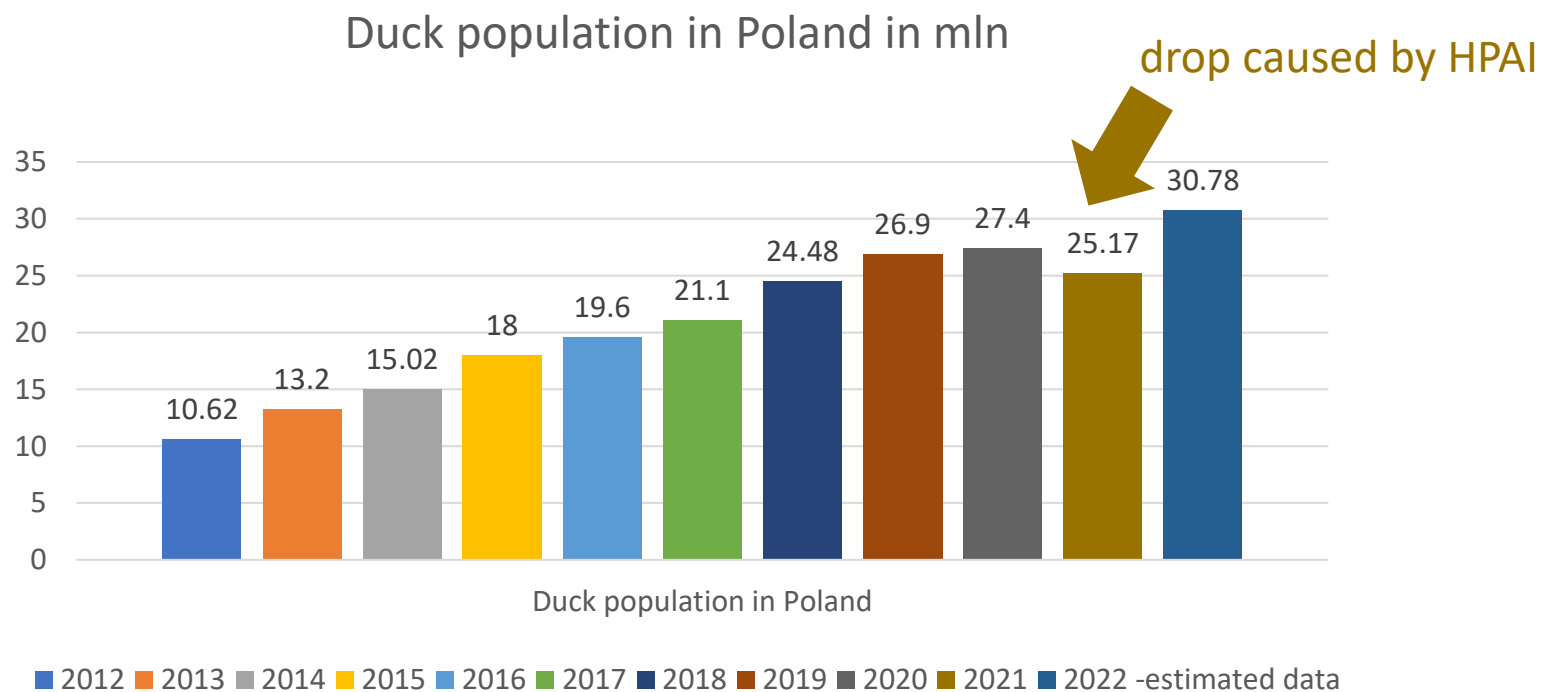
FVE/UEVP

POLISH POULTRY MEAT PRODUCTION IN NUMBERS

- N° 1 producer of poultry meat in EU
- 20% of total poultry meat production in EU
- 2,9 mln tonnes produced
- 1,6 mln tonnes exported
- 3,2 bln EUR value
- 63% of total export went to EU



DUCK POPULATION IN POLAND



2022

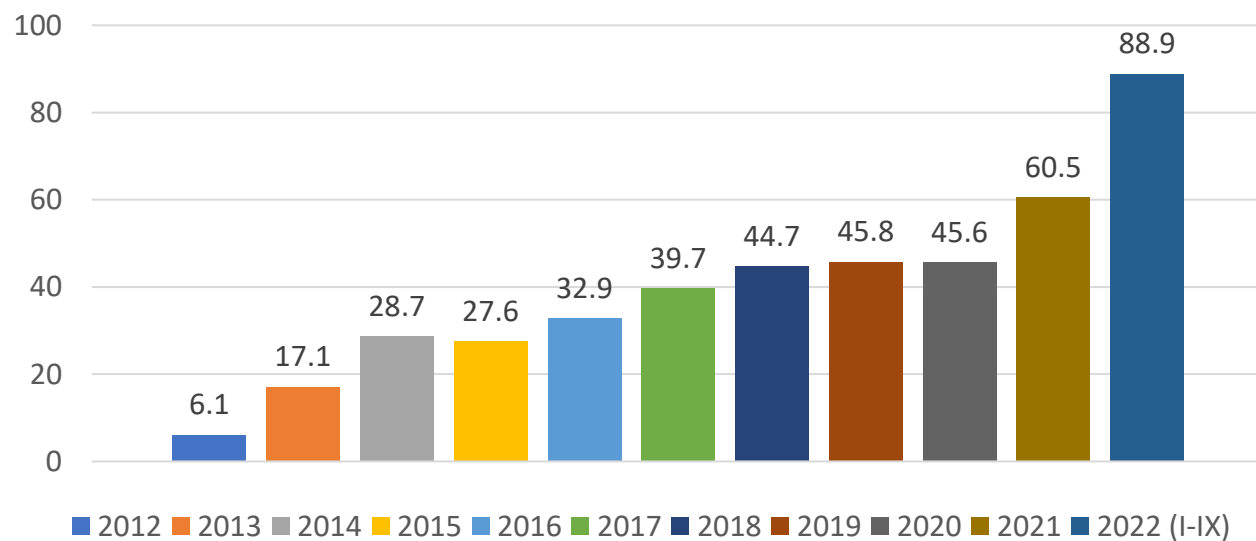
France: 177 000 tonnes

Hungary: 90 000 tonnes

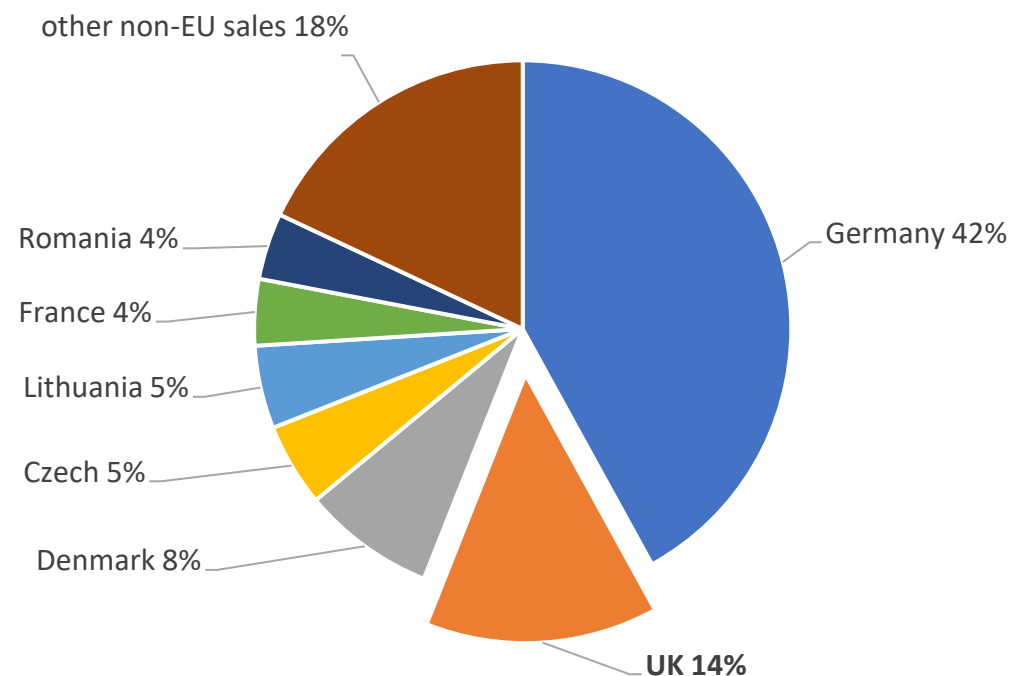
Poland: 67 000 tonnes

DUCK MEAT PRODUCTION IN POLAND

Export of duck meat in MLN EUR



Export of duck meat per countries in %

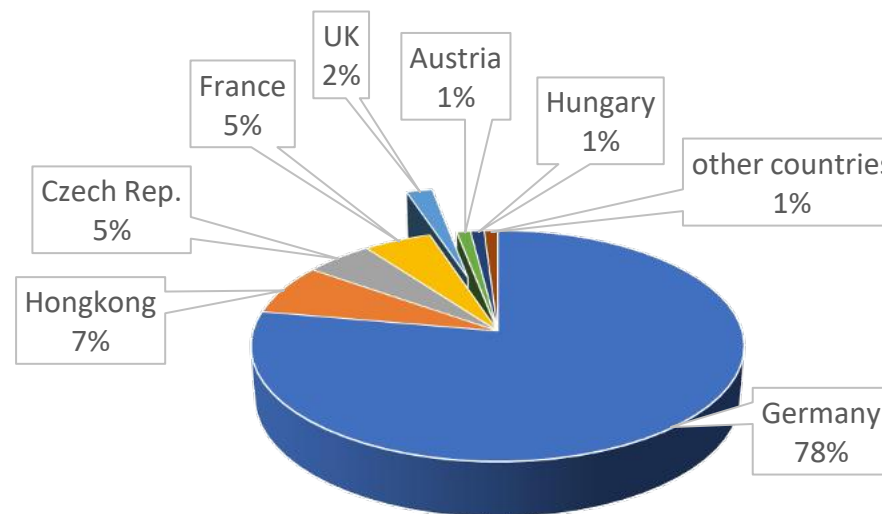


GEESE MEAT PRODUCTION IN POLAND

- 6,80 mln geese
- 16,2 mln tonnes of meat
- 73 mln EUR

Average consumption of goose meat in Poland within the last 10 years increased from 17g to 320g

Export of goose meat per countries in %





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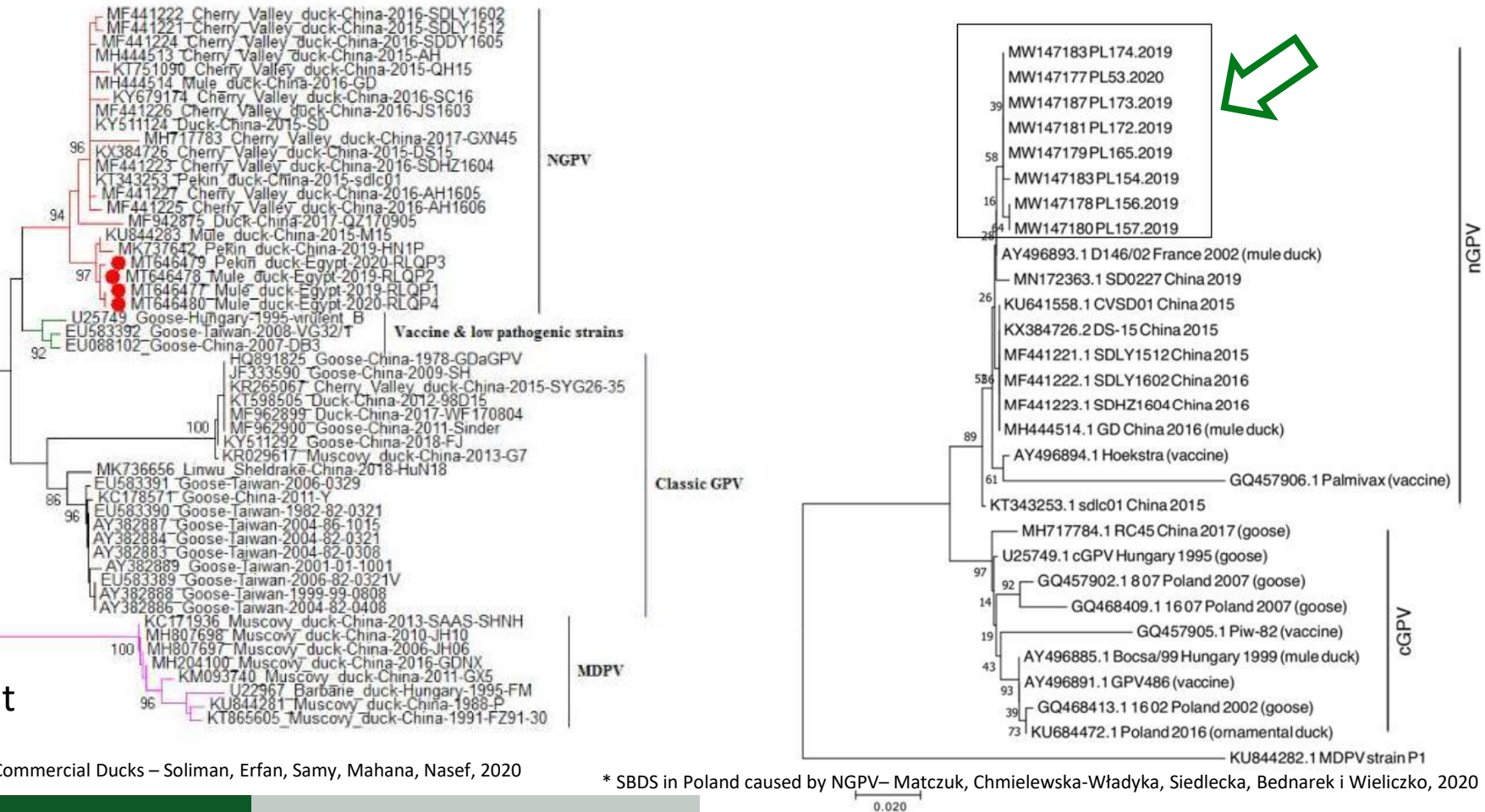
SHORT BEAK AND DWARFISM SYNDROME (SBDS) NOVEL GOOSE PARVOVIRUS

1960- GPV – Derzsy's disease
causative agent for goslings and
Muscovy ducklings

1970- NGPV- SBDS - detected in FR
Growth retardation, beak atrophy
and protruding tongue

1990- MDPV – watery diarrhea,
70%—100% morbidity, and high
mortalities

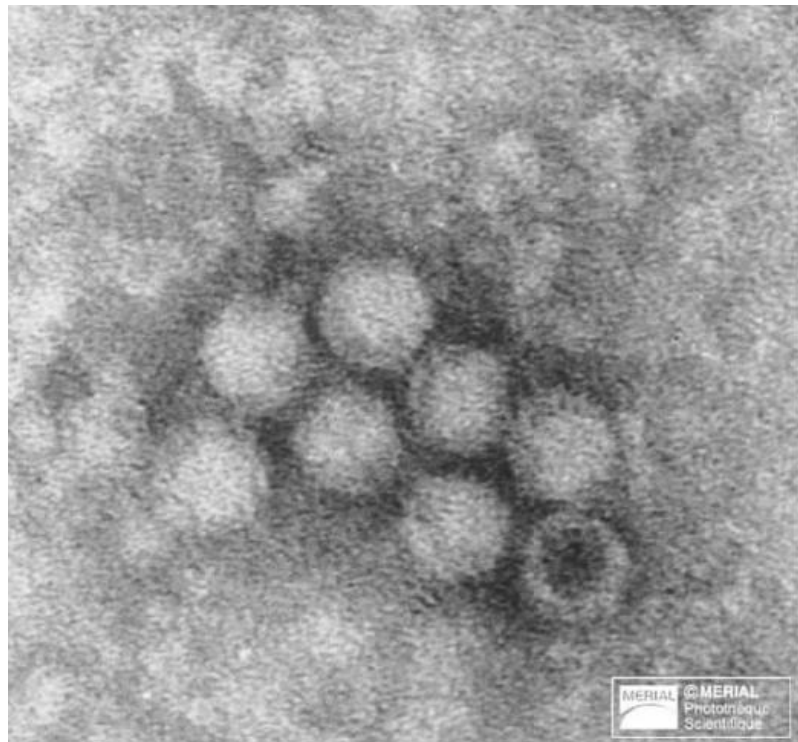
Duck circovirus as immunosupresant



* Detection of Novel Goose Parvovirus Disease Associated with SBDS in Commercial Ducks – Soliman, Erfan, Samy, Mahana, Nasef, 2020

* SBDS in Poland caused by NGPV– Matczuk, Chmielewska-Władyka, Siedlecka, Bednarek i Wieliczko, 2020

SHORT BEAK AND DWARFISM SYNDROME (NOVEL GOOSE PARVOVIRUS)



* image by MERIAL

- first symptoms noticable at 8-10 day of life
- problems with moving and feeding
- shortening of beak from day 15
- head shape change
- flock differentiation
- plumage problems
- morbidity at 70-100% and mortality 10-30%

LOCOMOTORY PROBLEMS

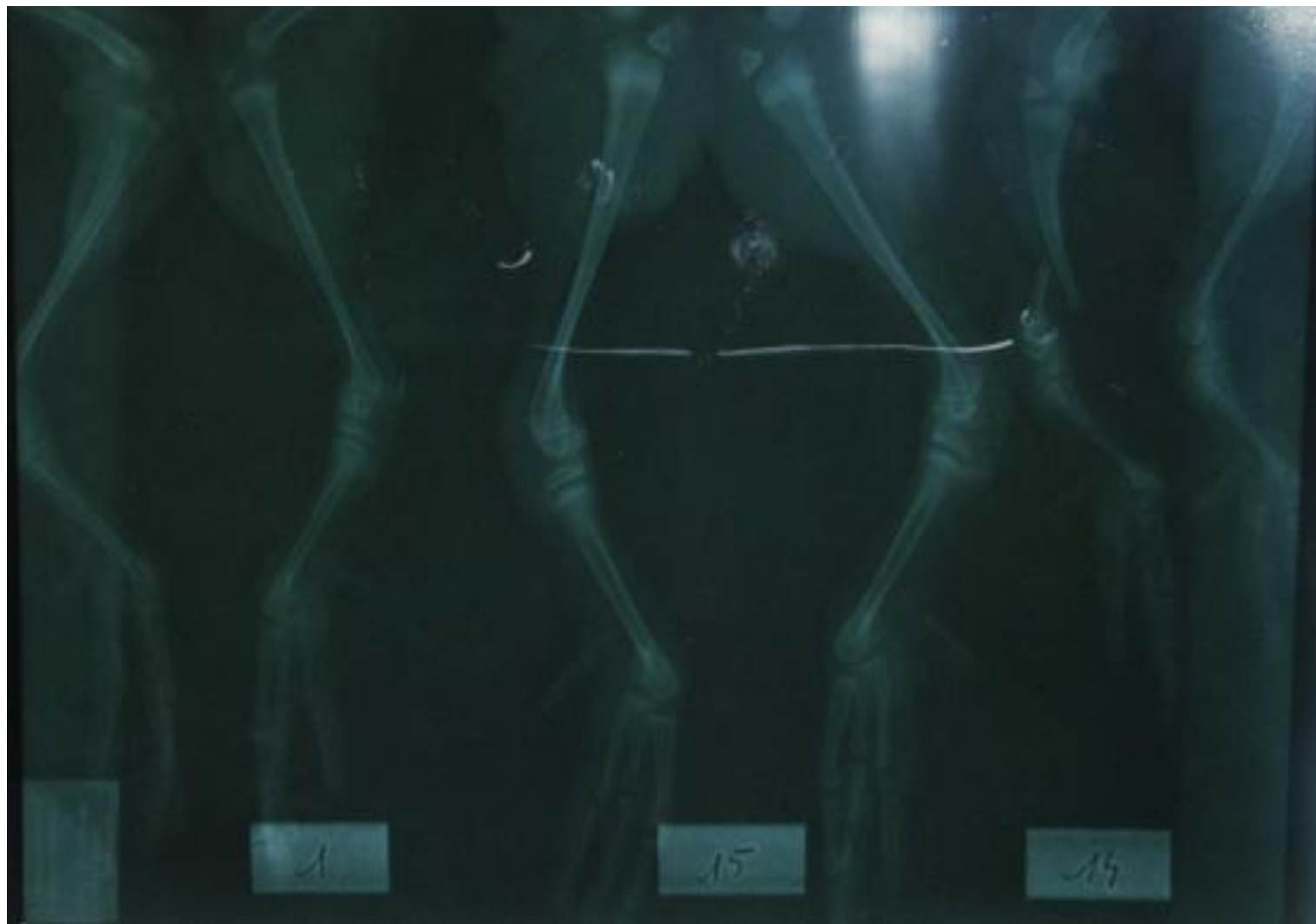
As soon as at 7-8th day of life



ACUTE FORM - LAMENESS



IRREGULARITIES IN LEGS
WEAK AND BROKEN BONES
THINNER, MORE FRAGILE
EASY TO BREAK

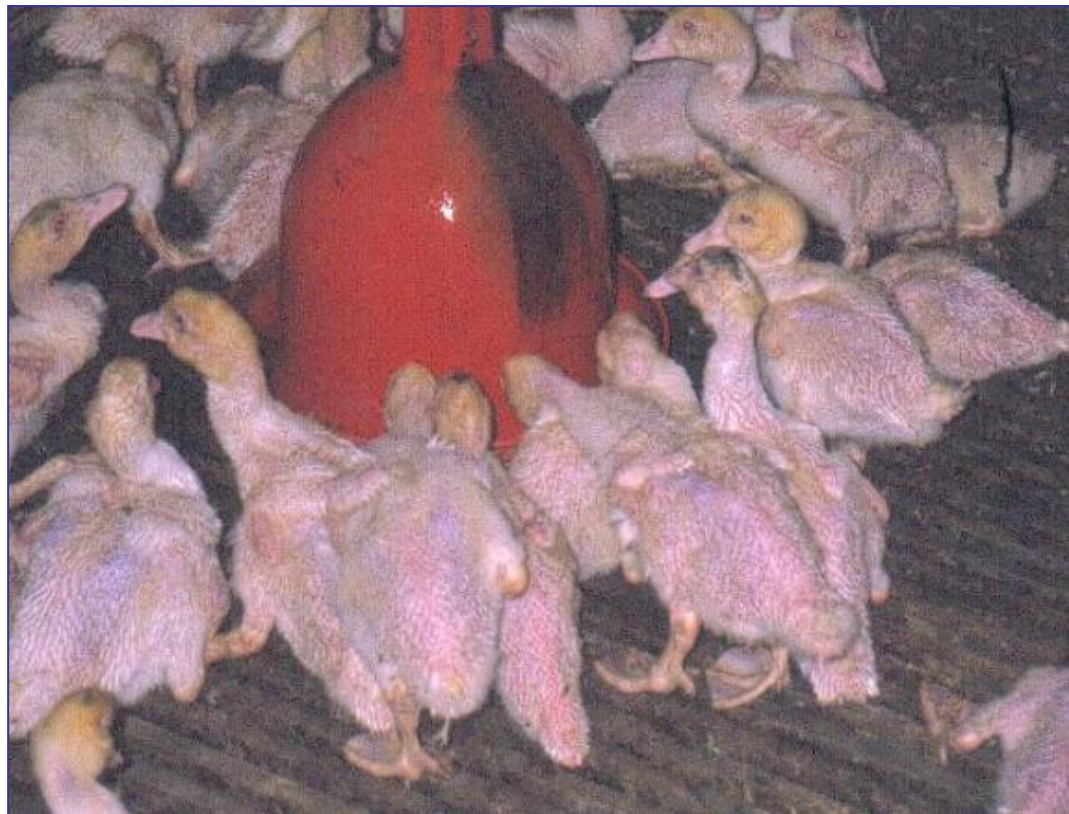


fragile bones

healthy bones

dwarfism

CHRONIC FORM – PLUMAGE PROBLEMS



CHRONIC FORM – SHORTENED BEAK



SHORTENED BEAK – PROTRUDING TONGUE



**SHORT BEAK AND
DWARFISM
SYNDROME
SHORTENED BEAK –
PROTRUDING
TONGUE**



GOOSE HEAD PROFILE



SHORT BEAK AND DWARFISM SYNDROME

CO-INFECTIONS

CIRCOVIRUS ACTS AS AN IMMUNOSUPPRESSIVE STARTER



CHRONIC FORM – GROWTH DISORDERS



SHORT BEAK AND DWARFISM SYNDROME

PREVENTIVE AND THERAPEUTIC METHODS

AFTER PATHOGNOMONIC SYMPTOMS APPEAR:

- LACK OF TOTALLY EFFECTIVE SOLUTION
- EXTENSIVE SELECTION
- FASTER SLAUGHTER
- TREATMENT FOCUSED ON IMMUNITY
- TREATMENT OF SYMPTOMS / CO-INFECTIONS

TO AVOID THE PROBLEM IN THE NEXT CYCLE:

- COMPLETE DESINFECTION OF THE FARM
- ALL IN – ALL OUT ONLY
- VACCINATION – DEPARVAX OR PALMIVAX:
 - ONE DAY OLD
 - 10-14TH DAY OF LIFE
- VITAMINE SUPPLEMENTATION
- WATER SANITIZATION (CHLORIDE, NANOSILVER)



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FVE/UEVP



Routes of infection are:

pig manure, removing litter in presence of birds
cannibalism, fights, contaminated feed

THE PROBLEMS IN GEESE START AT 8-9 WEEK.

The flock becomes less active, you can see sleeping birds.
The characteristic symptom is slanting or squinted eyes and
mucous discharge from the beak. Dead birds look as if they went to sleep
and never woke up.

ERYSIPELAS IN GEESE

GROSS LESIONS



ERYSIPELAS IN GEESE
GROSS LESIONS
Pectoral muscles



ERYSIPELAS IN GEESE
GROSS LESIONS
hemorrhages



Photo by Vetlab Brudzew

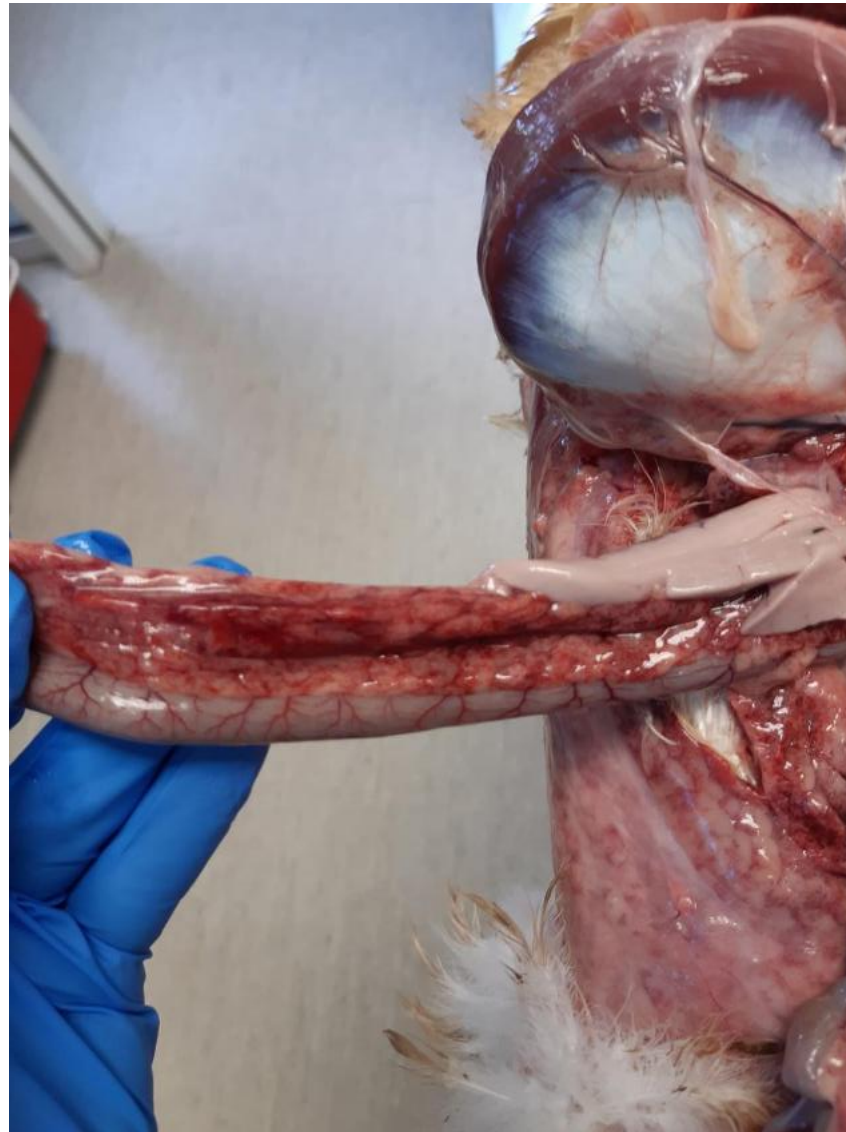
**HEMORRHAGES AND
„GLASSY” LOOK - EXCESSIVE
ABDOMINAL FLUID**



GROSS LESIONS

The duodenum is also
a subject to hemorrhagic
inflammation

Congested mezenteric
lymphonodes



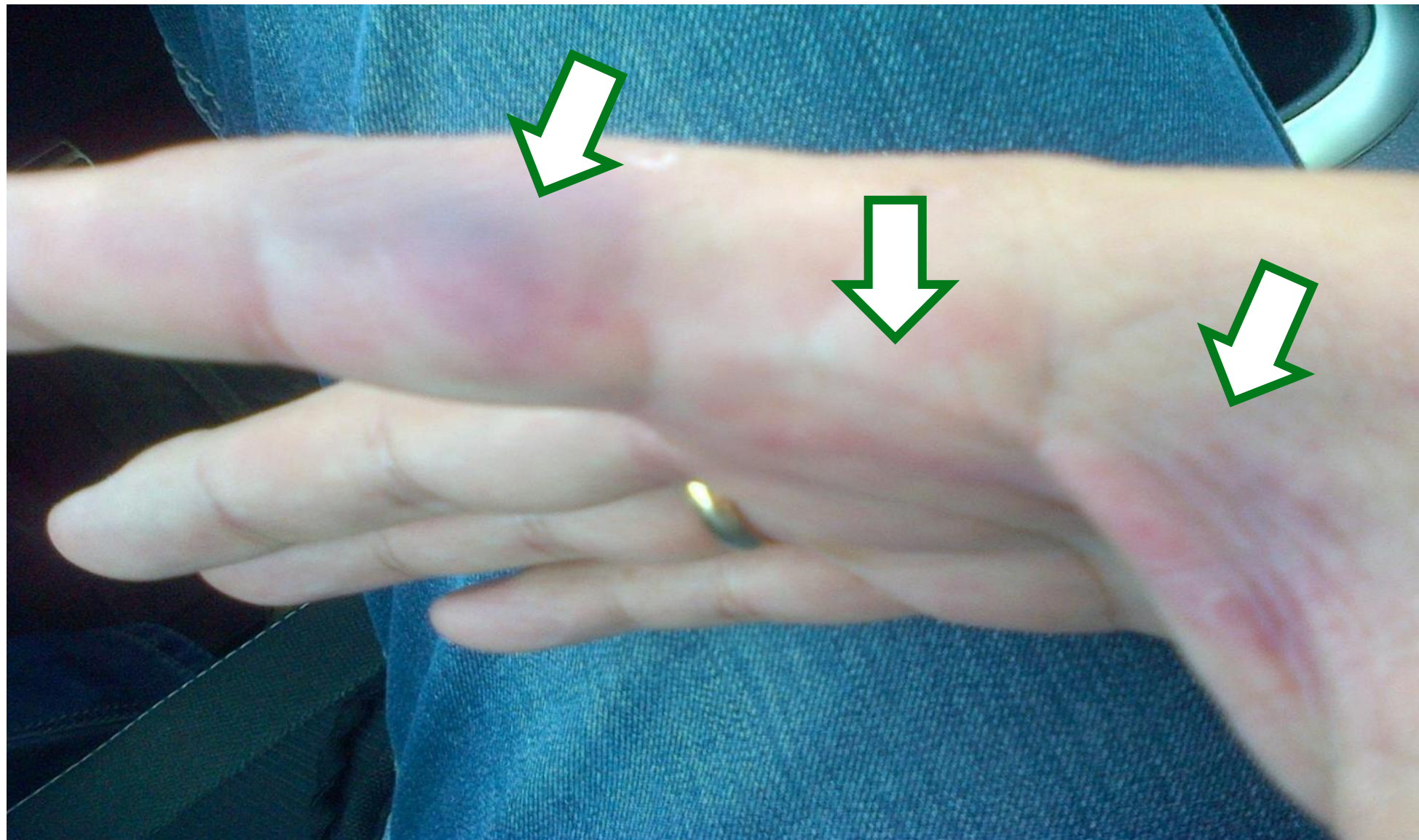
**THE PANCREAS IS
ALSO CONGESTED**



**IN THE KIDNEYS YOU WILL FIND HEMORRHAGES LEADING
TO THEIR FAILURE AND CONSEQUENT URATE DEPOSITS**



**ERYSIPELAS
IN GEESE
ZONOSIS**



ERYSIPELAS IN WATERFOWL

TREATMENT AND PREVENTION

AFTER PATHOGNOMONIC SYMPTOMS APPEAR:

- THERAPY WITH ANTIBIOTICS – mainly amoxicillin, but also sulphonamids + trimetoprim
- OFTEN RECURRENCES
- IN CASE OF PARENTS FLOCKS – INJECTIONS (amoxicillin + clavulenic acid – 3 times)

TO AVOID THE PROBLEM IN THE NEXT CYCLE:

- IMPROVED CONDITIONS AT THE FARM
- COMMERCIAL OR AUTOGENOUS VACCINES
- ALL PARENTS FLOCKS VACCINATED AT LEAST TWICE
- MEAT FLOCKS VACCINATED TWICE – 3w & 6w (sometimes additional at week 9)



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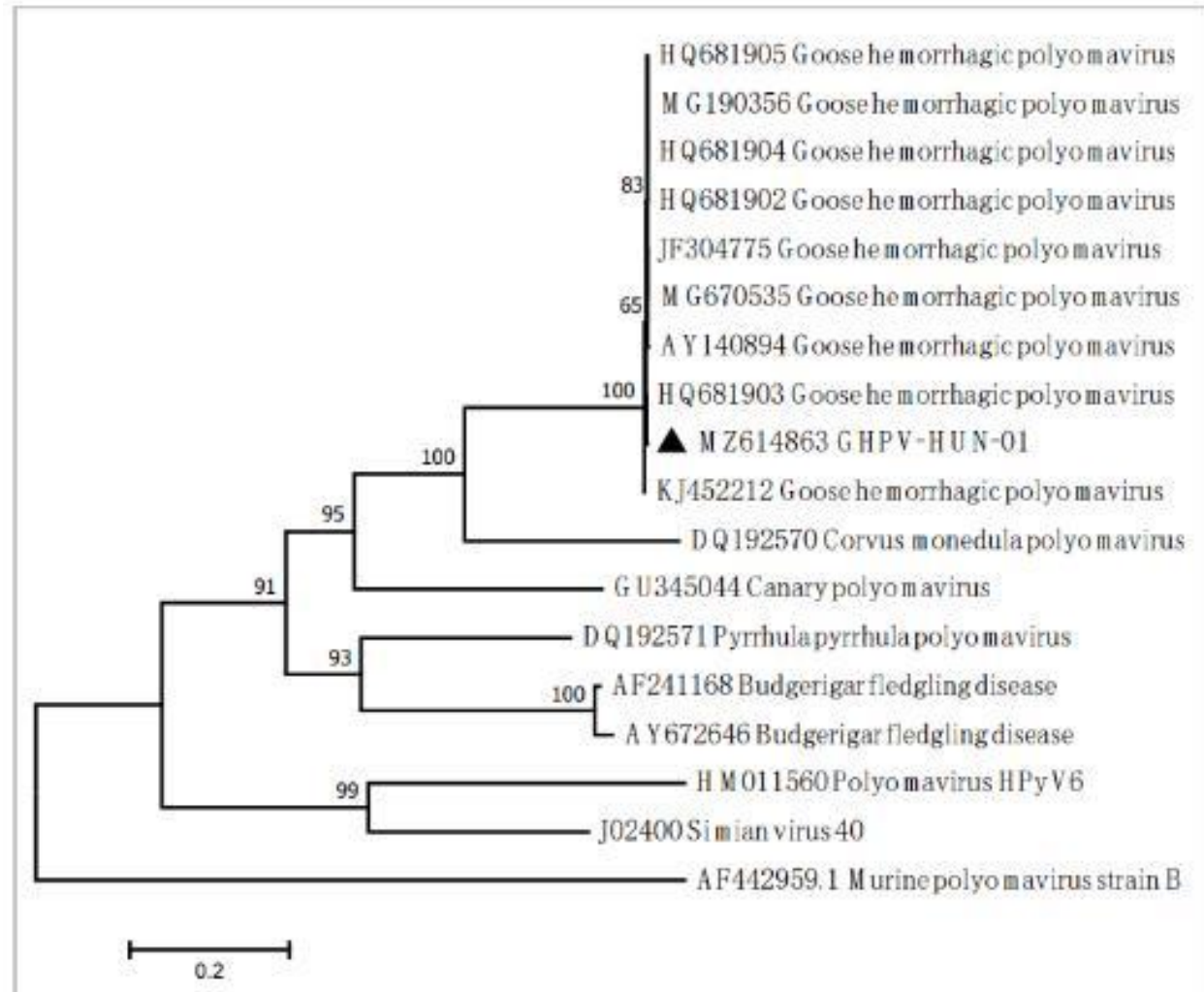
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GOOSE HEMORRHAGIC POLYOMAVIRUS (GHPV)

Identified in 2000 –
causative agent of (HNEG)

Budgerigar, canary, raven

Can also replicate in ducks - however
without causing clinical symptoms



HNEG –HEMORRHAGIC NEPHRITIS AND ENTERITIS OF GEESE

- high morbidity and mortality
- coma → death
- nervous signs
- subcutaneous edema
- gelatinous ascites
- inflammation of kidneys
- hemorrhagic enteritis



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POLYOMAVIRUS
HNEG

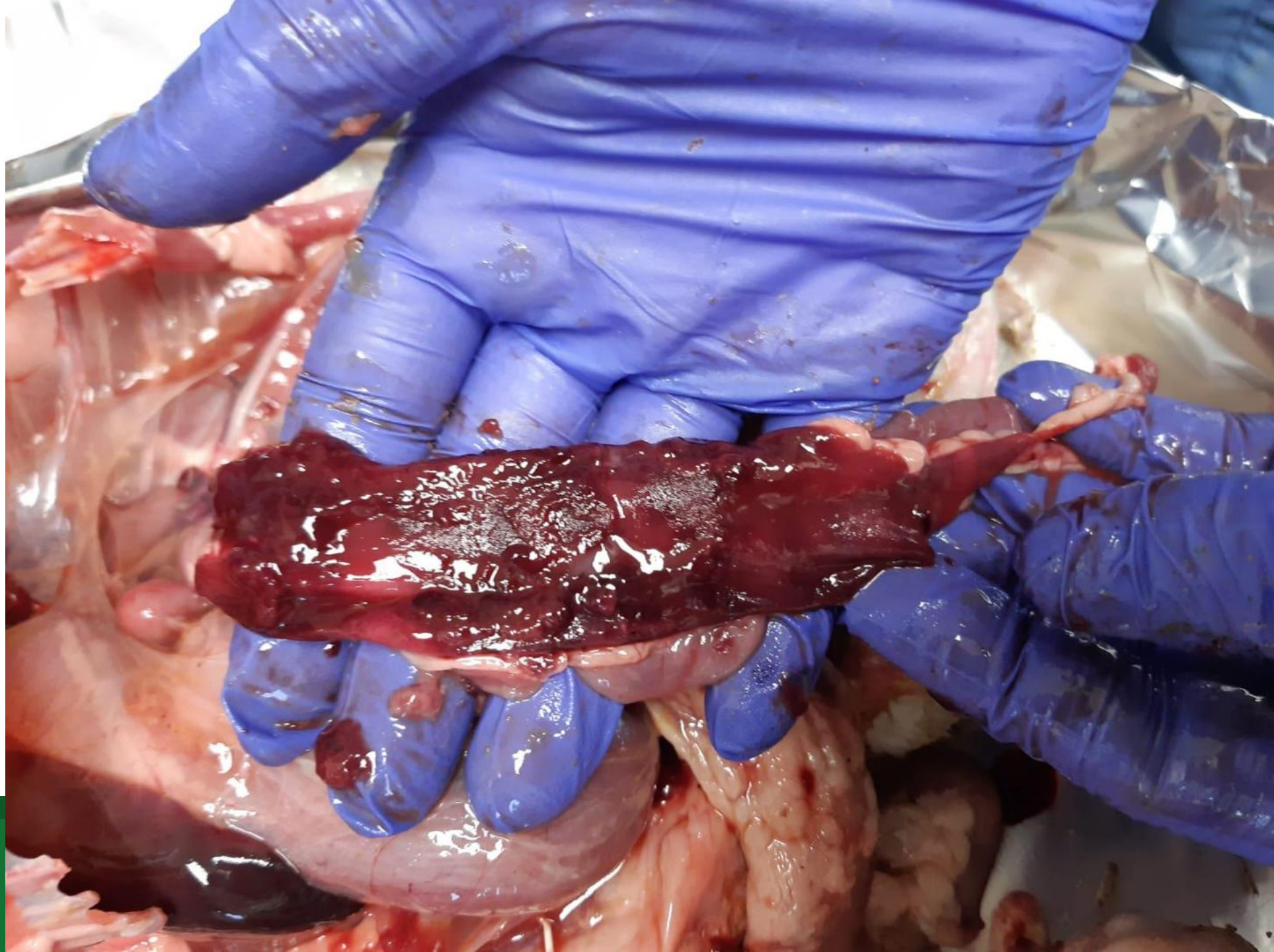
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POLYOMAVIRUS
HNEG

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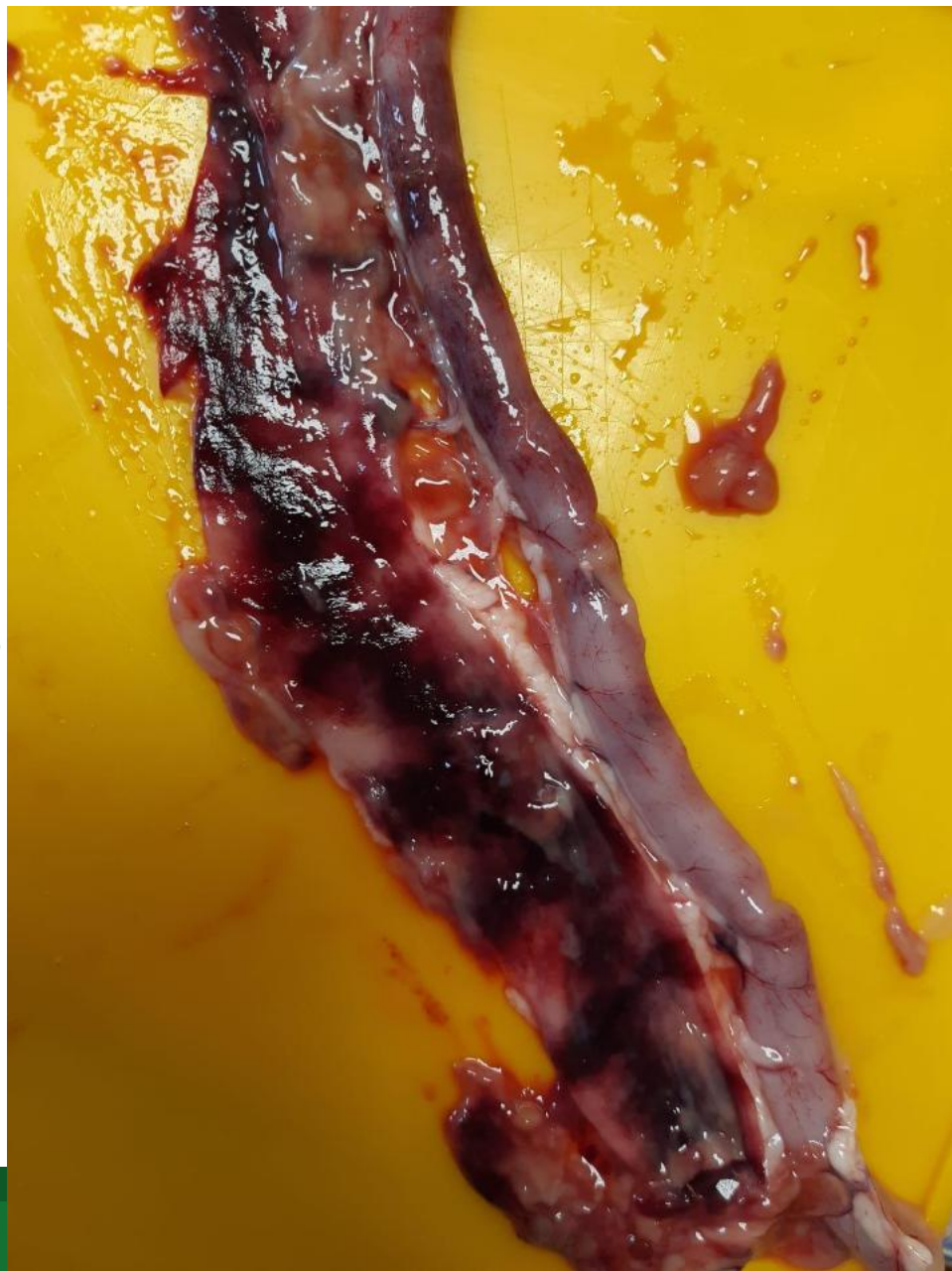
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POLYOMAVIRUS
HNEG

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POLYOMAVIRUS
HNEG



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POLYOMAVIRUS
HNEG

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HNEG –HEMORRHAGIC NEPHRITIS AND ENTERITIS OF GEESE



POLYOMAVIRUS IN WATERFOWL

TREATMENT AND PREVENTION

AFTER PATHOGNOMONIC SYMPTOMS APPEAR:

- If the problem starts at week 3-4 the course is dramatic – up to 30-40% mortalities
- Growth retardation, flock differentiation
- Only symptomatic treatment available
- Desinfectants in water (e.g Virkon, Dutrion)
- Vitamine and mineral supplementation

TO AVOID THE PROBLEM IN THE NEXT CYCLE:

- Through cleaning and disinfection
- All-in / all-out only
- „Autogenous serum”
- No registered vaccines in Europe
- Commercial vaccines for parrots only





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FVE/UEVP

CLINICALLY RELEVANT INFLUENZA VIRUSES

TYPE A

Potentially severe illness
Epidemics and pandemics
Rapidly changing

TYPE B

Usually **less severe** illness
Epidemics
Genetically more stable

DIFFERENT SEROTYPES AND DIFFERENCES IN SUSCEPTIBILITY

HA

SPECIES	SEROTYPE
Human	H1, H2, H3 (H5, H7, H9)
Pig	H1, H3
Horse	H3, H7
Birds	H1-16

NA

SPECIES	SEROTYPE
Human	N1, N2, N8
Pig	N1, N2
Horse	N7, N8
Birds	N1-9

DOMINANT VARIANT IN POLAND



2021 – out of 403 outbreaks 339 caused by **H5N8**

2022 – out of 68 outbreaks 67 caused by **H5N1**

2023 – out of 56 outbreaks so far all caused by **H5N1**

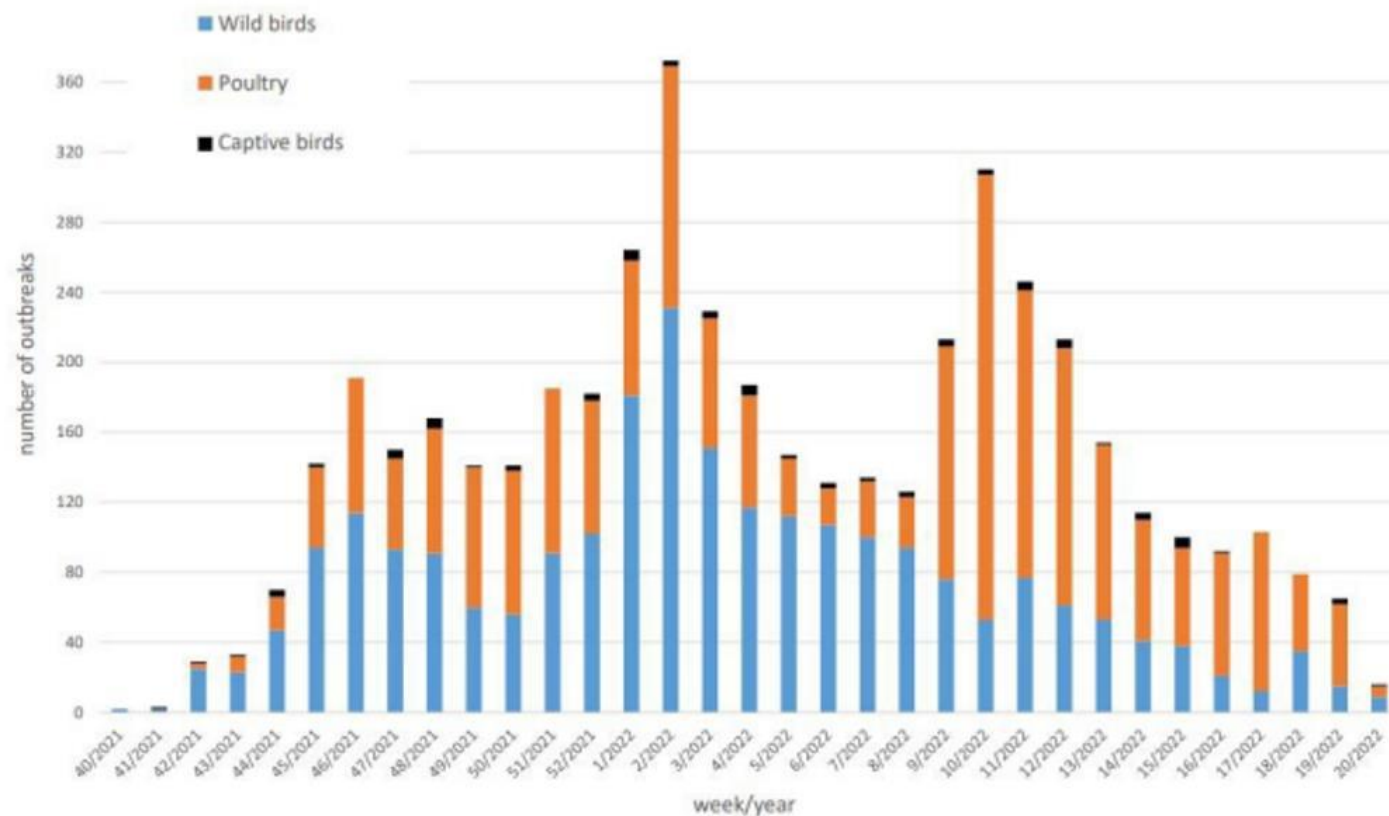
HPAI IN EUROPE IN 2021/2022 SEASON

COUNTRY	Poultry	Captive birds	Wild birds	Total
FRANCE	1219	24	44	1287
GERMANY	72	9	1179	1260
NETHERLANDS	37	17	453	507
ITALY	317	1	22	340
HUNGARY	120	2	29	151
DENMARK	8	3	115	126
POLAND	91	0	33	124
BELGIUM	5	3	69	77
SPAIN	31	1	35	67

Source: EURL for AI, Padova, Italy

HPAI IN EUROPE IN 2021/2022 SEASON

POSITIVE EVENTS EACH WEEK



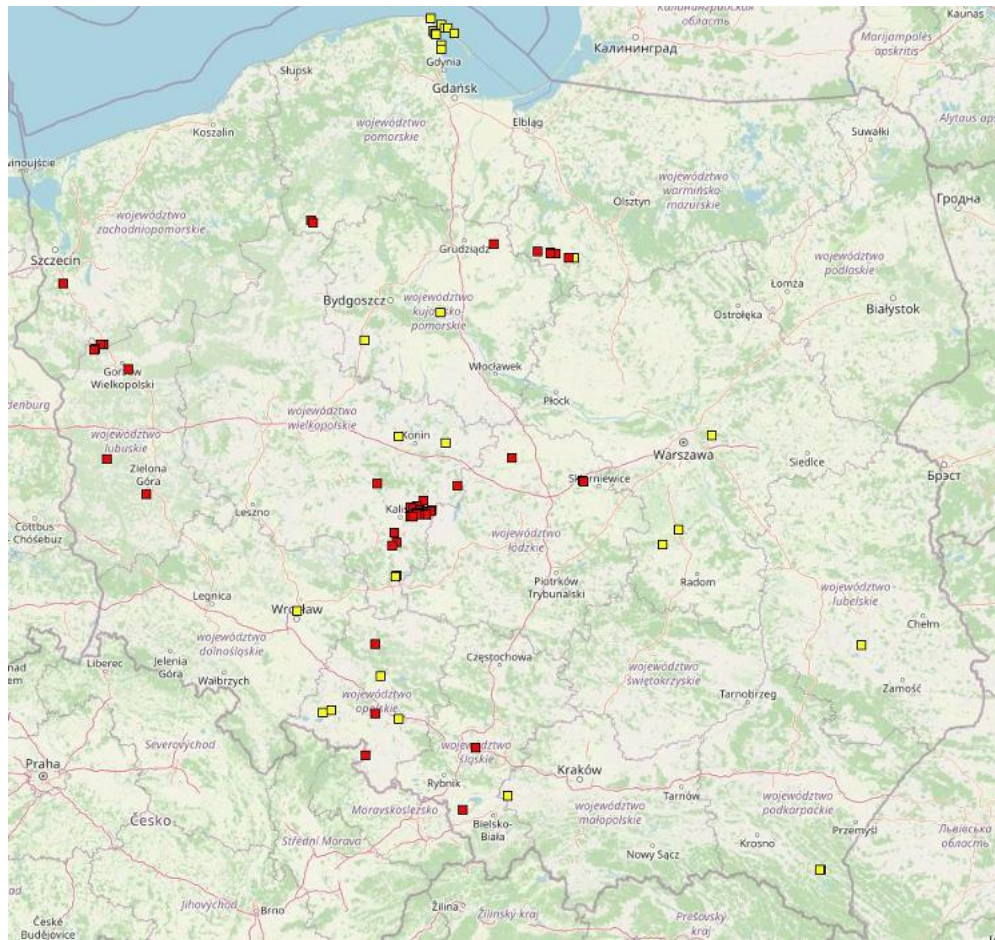
Source: IZSve

HPAI IN POLAND IN 2021/2022 SEASON (AS OF 18/02/2022 – POULTRY ONLY)

POULTRY SPECIES	NO. OF OUTBREAKS
Commercial duck	33
Commercial turkey	21
Duck breeders	5
Commercial broilers	5
Goose breeders	4
Rural chicken	3
Commercial layer	4
Broiler breeders	1
Commercial goose	1
TOTAL	77

Source: PNVC

■ wild birds (33)
■ farm birds (56)



01/01/2023 - 27/02/2023 (PNVC)



wild and farm birds
01/01/2023 – 01/03/2023 (EFSA)

MOST IMPORTANT VECTORS OF INTRODUCING THE VIRUS TO THE FARM

- straw used as bedding
- personnel caching birds before transport to slaughterhouse
- multi-age farms
- family connections between owners of farms in other locations
- litter removed from the farm during period of incubation of the disease
- wind (to some extent)
- hunters

PREVENTIVE MEASURES

Ban on releasing birds in the areas used by wild birds, even if they're not present at the time



PREVENTIVE MEASURES

Restricting the contact between farm and wild birds, and in high risk situation
keeping flock closed, especially at:



goose farms



eco/bio farms



backyard farms

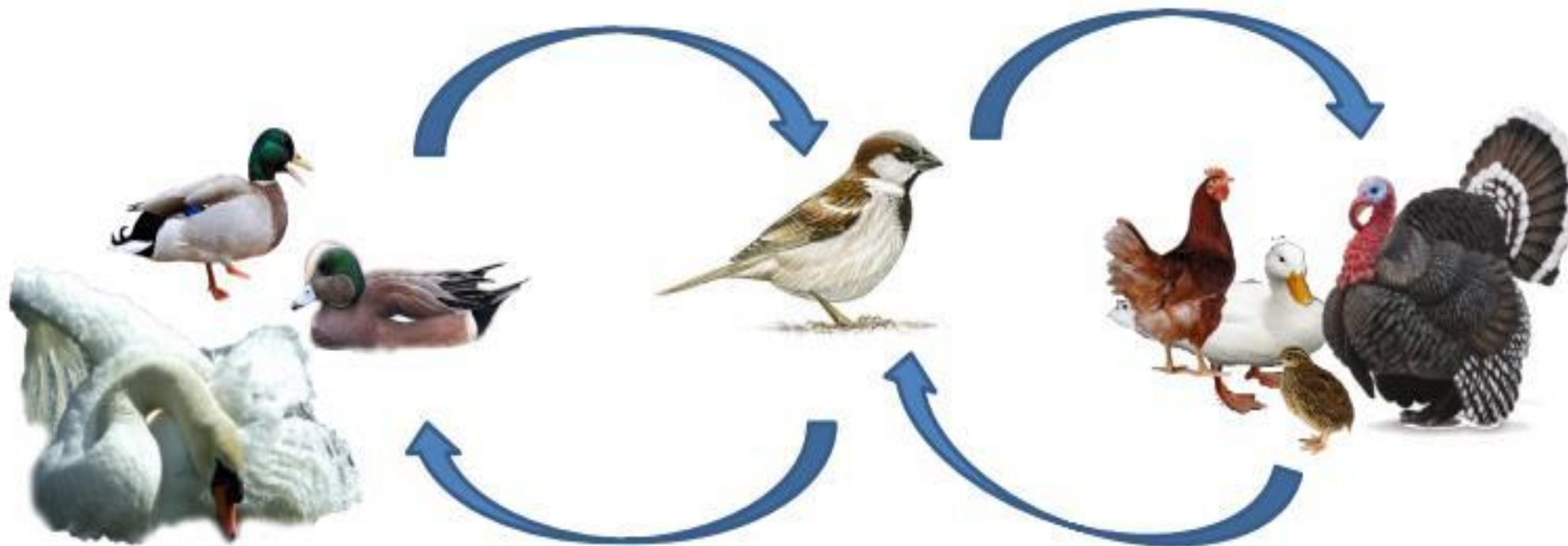
PREVENTIVE MEASURES

Restricting indirect contact through feed or straw used for bedding that might be contaminated by wild birds' droppings



PREVENTIVE MEASURES

Role of „intermediate” species in transmission of the virus



PREVENTIVE MEASURES

Intermediate species – feed protection



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Zwiększona śmiertelność wśród drobiu, apatia, niechęć do paszy i wody, spadek nieśności oraz objawy nerwowe (porażenie, skręty szyi, drgawki, biegunka, duszność) **Nie zwlekaj - zawiadom powiatowego lekarza weterynarii!**

WE WSPÓŁPRACY:



Vet-Lab Brudzew
NIP 6681017015

ul. Turkowska 58c
tel. 63 279 70 04

62-720 Brudzew
vetlabbrudzew@interia.pl

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**HIGHLY PATHOGENIC
AVIAN INFLUENZA
CLINICAL SYMPTOMS**



**HIGHLY PATHOGENIC
AVIAN INFLUENZA
CLINICAL SYMPTOMS**



HPAI – SYMPTOMS IN TURKEY FLOCK



**HPAI – GROSS
LESIONS**



HIGH RISK AREAS

- along rivers
- near bodies of water
- historical outbreaks
- migration routes



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outbreak



protection zone (3km)¹



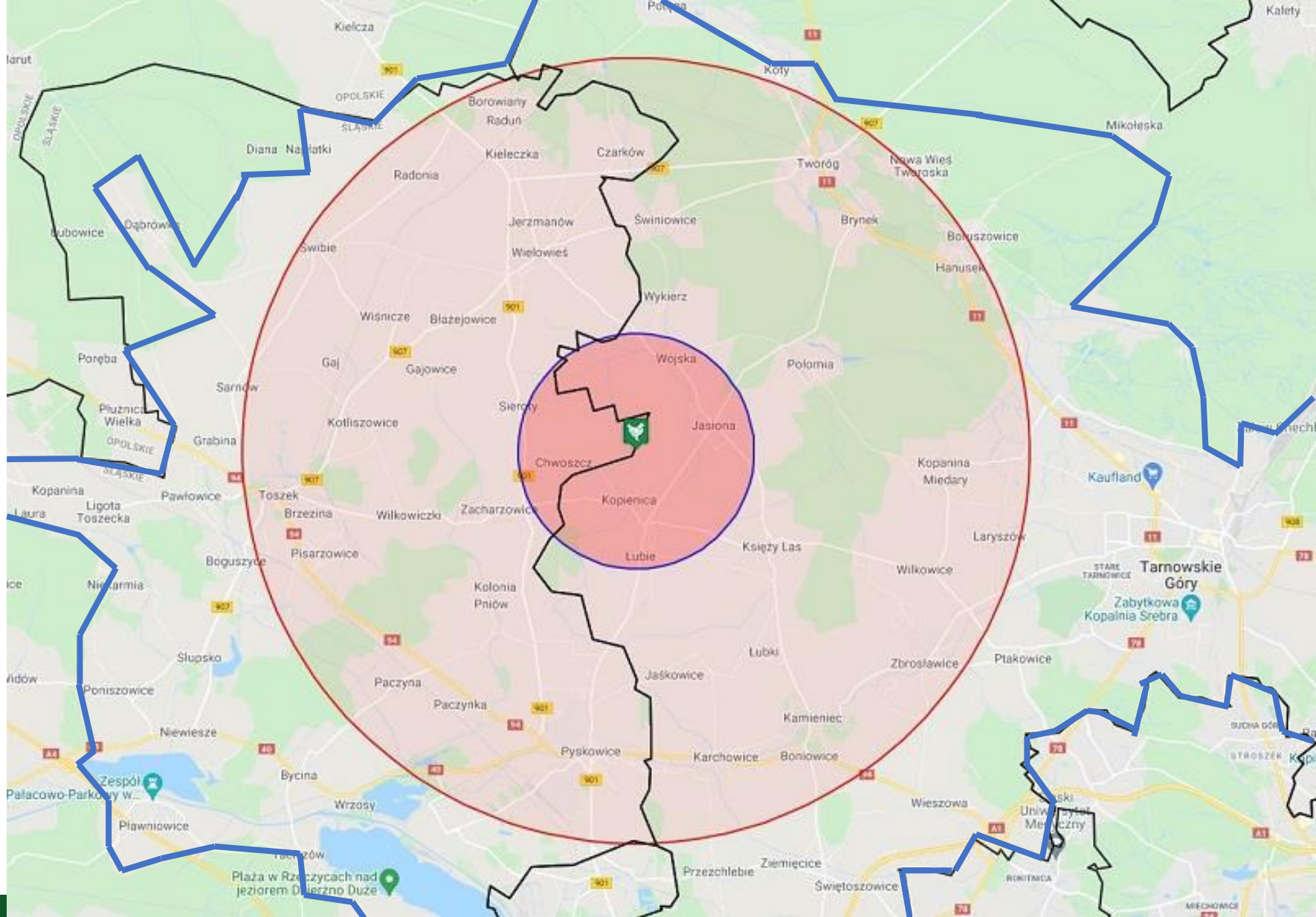
surveillance zone (10km)¹



buffer zone²

1) Council Directive 2005/94/EC

2) Implementing decision (UE) 2017/1841



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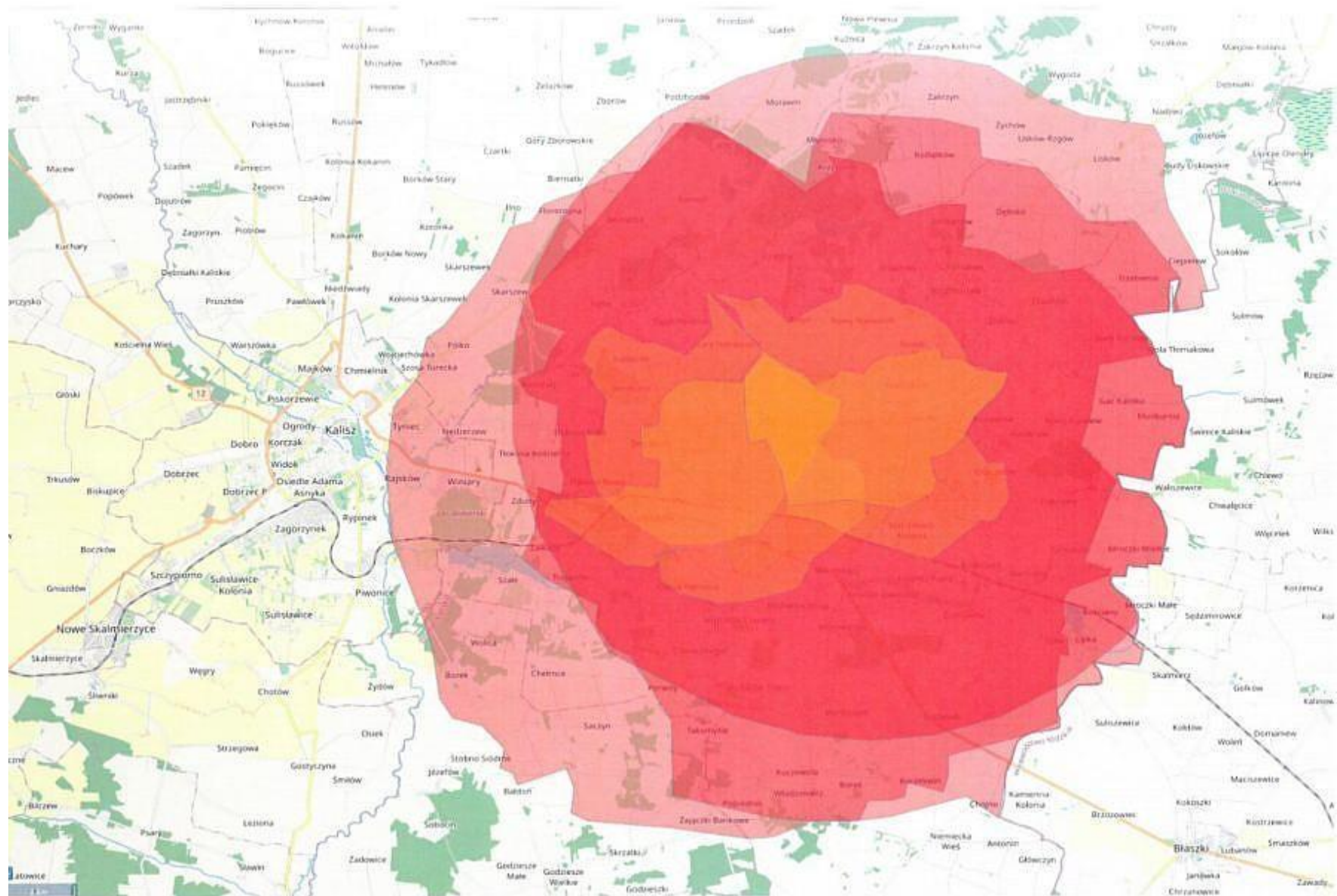
ul. Turkowska 58c
tel. 63 279 70 04

62-720 Brudzew
vetlabbrudzew@interia.pl

www.vetlabbrudzew.pl

VET-LAB BRUDZEW

OVERLAPPING ZONES



Vet-Lab Brudzew
NIP 6681017015

ul. Turkowska 58c
tel. 63 279 70 04

62-720 Brudzew
vetlabbrudzew@interia.pl

www.vetlabbrudzew.pl

**VET-LAB
BRUDZEW**

HEAVY STRESS ON PROPER DESINFECTION



HIGHLY PATHOGENIC AVIAN INFLUENZA

NOT ONLY A POULTRY PROBLEM

1997 – Hong Kong, first reports of HPAI infection in humans

26/10/2022 – H5N1 infection at mink farm in Spain, animals culled

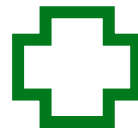
09/01/2023 – Ecuador authorities informed of a human case of infection with H5 virus in 9 yo girl

23/01/2023 – domestic cat infected with H5N1 (euthanized after severe neurological symptoms)

Earlier research show that cat-to-cat transmission is possible

HIGHLY PATHOGENIC AVIAN INFLUENZA

**SEVERE
ECONOMICAL
PROBLEM**



**SEVERE SOCIAL
PROBLEM**

CAN WE AFFORD NOT TO DISCUSS VACCINATION???

HPAI VACCINE?

VACCINE IS NOT A REMEDY FOR POOR BIOSECURITY!

- Inexpensive
- Applicable for multiple species
- Single dose protection
- Easy application
- Easy differentiation
- Produces protective humoral response in the presence of maternal antibodies
- Genetically close to field virus

„Veterinary vaccines: principles and applications”, Metwally, S; Viljoen, G; El Idrissi, A; 2022

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FVE/UEVP



WATERFOWL WELFARE ISSUES

FOIE GRAS



Photo: Encyclopaedia Britannica

LIVE PLUCKING



Photo: Karolina Morawska

FARM CONDITIONS



WATERFOWL WELFARE PROBLEMS



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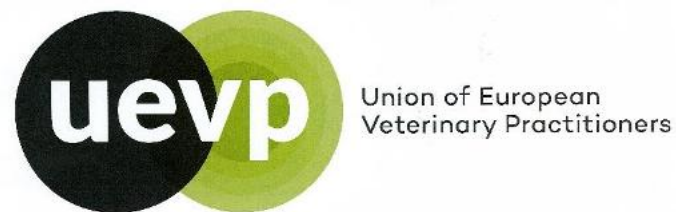
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UNION OF EUROPEAN VETERINARY PRACTITIONERS



UNION OF EUROPEAN VETERINARY PRACTITIONERS



**national chambers from
29 member countries**



UNION OF EUROPEAN VETERINARY PRACTITIONERS



CURRENT ISSUES:

- Animal Health Visits
- Antimicrobial Resistance
- Shortage of veterinarians in rural areas
- Shortages of VMPs
- Vet Survey 2023

UNION OF EUROPEAN VETERINARY PRACTITIONERS

EU NEWS
January 2023

UEVP

Union Européenne des Vétérinaires Praticiens – AISBL
Union of European Veterinary Practitioners – AISBL

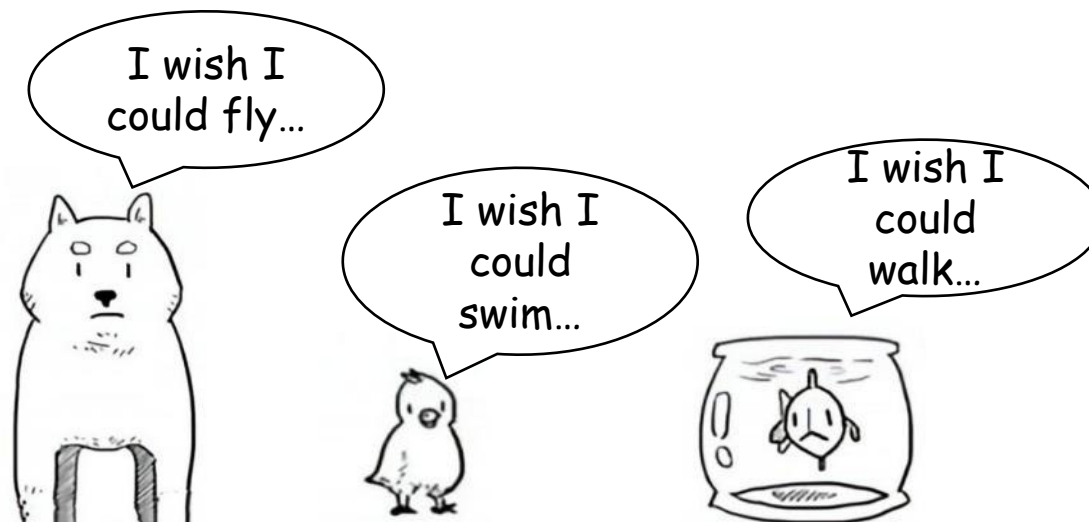


At European level, the fight against antimicrobial resistance remains a priority, in which our profession can play a decisive role.

In particular, this month the European Commission published the results of the public consultation on legislation to ban growth-promoting antibiotics in imports. At the same time, a survey requested by the European Commission on antimicrobial resistance - including veterinary medicines - provides evidence and data that will enable the European Commission to take action in this area.

Finally, in the field of animal welfare, a number of statements have emerged on key issues within the European institutions and among European stakeholders, concerning animal transport, the preparatory work of the European Food Safety Authority (EFSA) for the future legislation on animal welfare as well as the supervision of the use of animals for scientific purposes.

Piotr KWIECIŃSKI, UEVP President



NEW IDEAS IN POULTRY PRODUCTION

STAGE ONE



STAGE TWO



STAGE THREE





THANK YOU FOR YOUR ATTENTION

Piotr Kwieciński DVM, PhD

contact details:
piotr.kwiecinski@mail.com
+48 601 763 938

HIGHLY PATHOGENIC AVIAN INFLUENZA

ATTEMPTS AT CONTROL AND ERADICATION

SUSPICION OF OUTBREAK:

- notification of suspicion of outbreak
- Activation of local Crisis Control Team by Regional State Veterinary Officer
- RSVO's intervention visit:
 - epizootic investigation
 - clinical examination
 - collection of samples and request for special transportation to State Reference Veterinary Laboratory
 - notification to Voivodship State Veterinary Officer on suspicion of outbreak

HIGHLY PATHOGENIC AVIAN INFLUENZA

ATTEMPTS AT CONTROL AND ERADICATION

SUSPICION OF OUTBREAK:

- Voivodship SVO notifies the Voivod and Chief Veterinary Officer of the suspicion
- Appointed vets are sent to perform perlustration and registry of poultry at all farms and households in locality
- Report from perlustration and the registries are sent to Voivodship SVO

HIGHLY PATHOGENIC AVIAN INFLUENZA

ATTEMPTS AT CONTROL AND ERADICATION

AFTER CONFIRMATION OF THE OUTBREAK:

- introduction of protection (3km radius) and surveillance (10 km radius) zones
- within the zones all animals susceptible to HPAI are culled in farms and households where possibility of transmission was determined
- transport movement control
- ban on transport of animals and products of animal origins

HIGHLY PATHOGENIC AVIAN INFLUENZA

ATTEMPTS AT CONTROL AND ERADICATION

ACTIONS AT THE FARM:

- notification to European Commission on outbreak
- disposing of animal carcasses along with feed, waste products, etc. from the farm
- cleaning and disinfection
- localization and disposing of all products, feed, waste, etc. that left the farm within the time of incubation of the disease
- ban on any poultry-related production until outbreak is contained