Highly Pathogenic Avian Influenza in Italy

STANDING COMMITEE ON PLANTS, ANIMALS, FOOD AND FEED

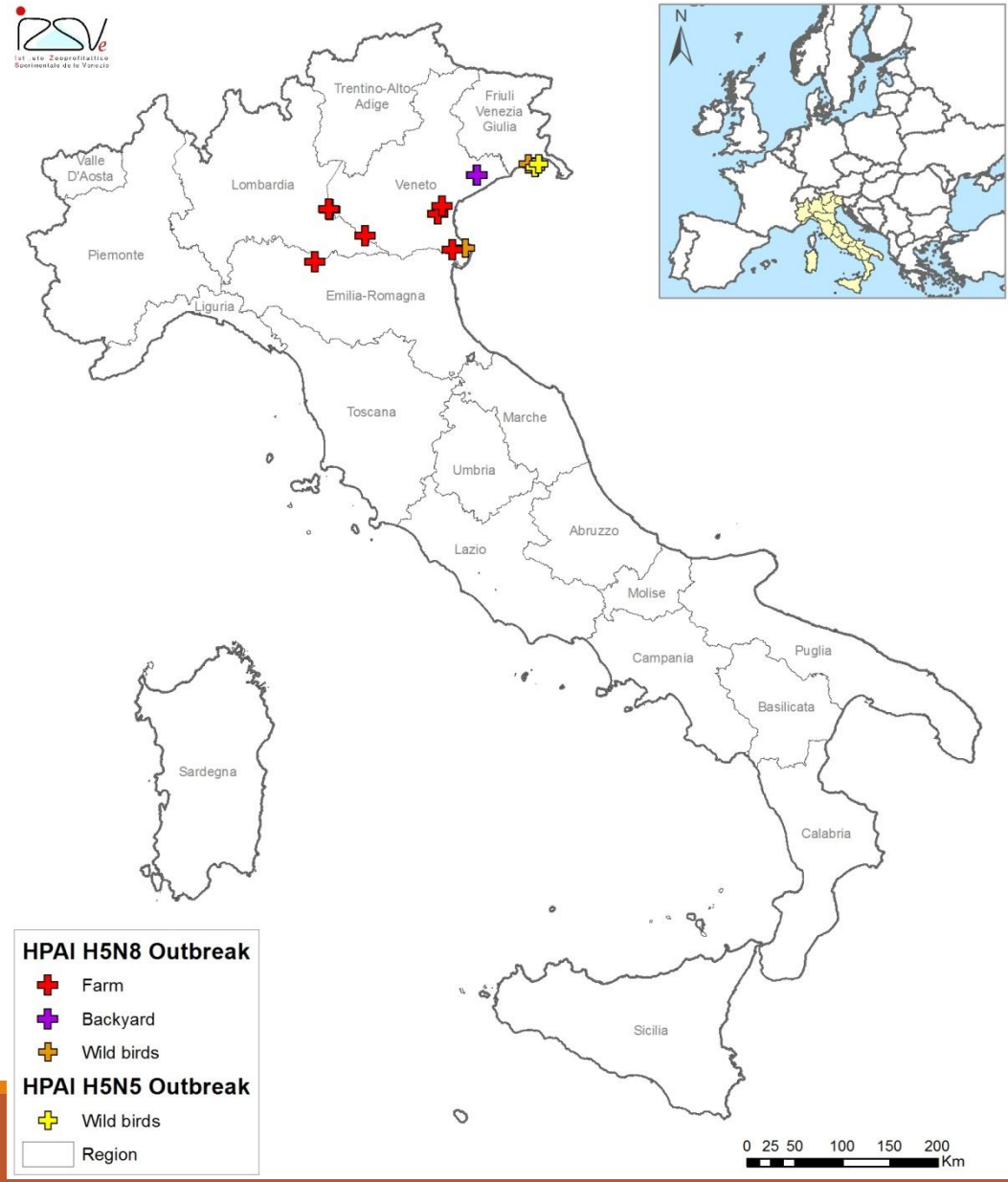
SECTION ANIMAL HEALTH AND WELFARE

2-3 MARCH 2017

HPAI H5 outbreaks in Italy

Between December 2016 and February 2017

- Outbreaks in wild birds:
  - 4 in Friuli Venezia Giulia
  - 1 in Veneto
- Outbreak in domestic poultry:
  - 6 in Veneto
  - 2 in Lombardy
  - 1 in Emilia Romagna



H5 HPAI outbreaks in wild birds

Conf. Date	Region	Province	Species	N of animals	Strain
29/12/2016	Friuli Venezia Giulia	Gorizia (Grado lagoon)	Eurasian Wigeon (*Anas penelope*)	1	H5N5
05/01/2017	Friuli Venezia Giulia	Gorizia (Grado lagoon)	Eurasian Wigeon (*Anas penelope*)	1	H5N8
10/01/2017	Friuli Venezia Giulia	Gorizia	Gadwal (*Anas strepera*)	1	H5N5
21/01/2017	Friuli Venezia Giulia	Udine	Swan (Cygnus cygnus	1	H5N8
24/02/2017	Veneto	Rovigo	Common shelduck (*Tadorna tadorna*)	1	H5N8

Map showsing the location of HPAI outbreaks in wild birds

H5N8 HPAI outbreaks in domestic birds

Conf. Date	Region	Depopulation date	Province	Species	No animals	Strain
21/01/2017	Veneto	26/01/2017	Venice	Fattening turkey	20,500	H5N8
23/01/2017	Veneto	29/01/2017	Padua	Fattening turkey	22,300	H5N8
25/01/2017	Veneto	04/02/2017	Rovigo	Laying hen	36,737	H5N8
02/02/2017	Emilia Romagna	08/02/2017	Parma	Fattening turkey	22,800	H5N8
15/02/2017	Lombardy	18/02/2017	Mantova	Fattening turkey	14,327	H5N8
17/02/2017	Veneto	21/02/2017	Verona	Fattening turkey	41,373	H5N8
22/02/2017	Lombardy	25/02/017	Mantova	Fattening turkey	21,820	H5N8
28/02/2017	Veneto	28/02/2017	Venice	Backyard	11	H5N8
28/02/2017	Veneto	28/02/2017	Venice	Backyard	18	H5N8

Total depopulated birds 179,886

Location of HPAI outbreaks

Protection and Surveillance Zones

According to the **Council Directive 94/2005 EC**, the following zones were defined :

- **Protection Zone**: Municipalities within 3 km from the outbreaks
- **Surveillance Zone**: Municipalities within 10 km from the outbreaks

Enhanced surveillance measures were conducted, by collecting dead animals and head and necks, to reduce the number of entries in the affected farms

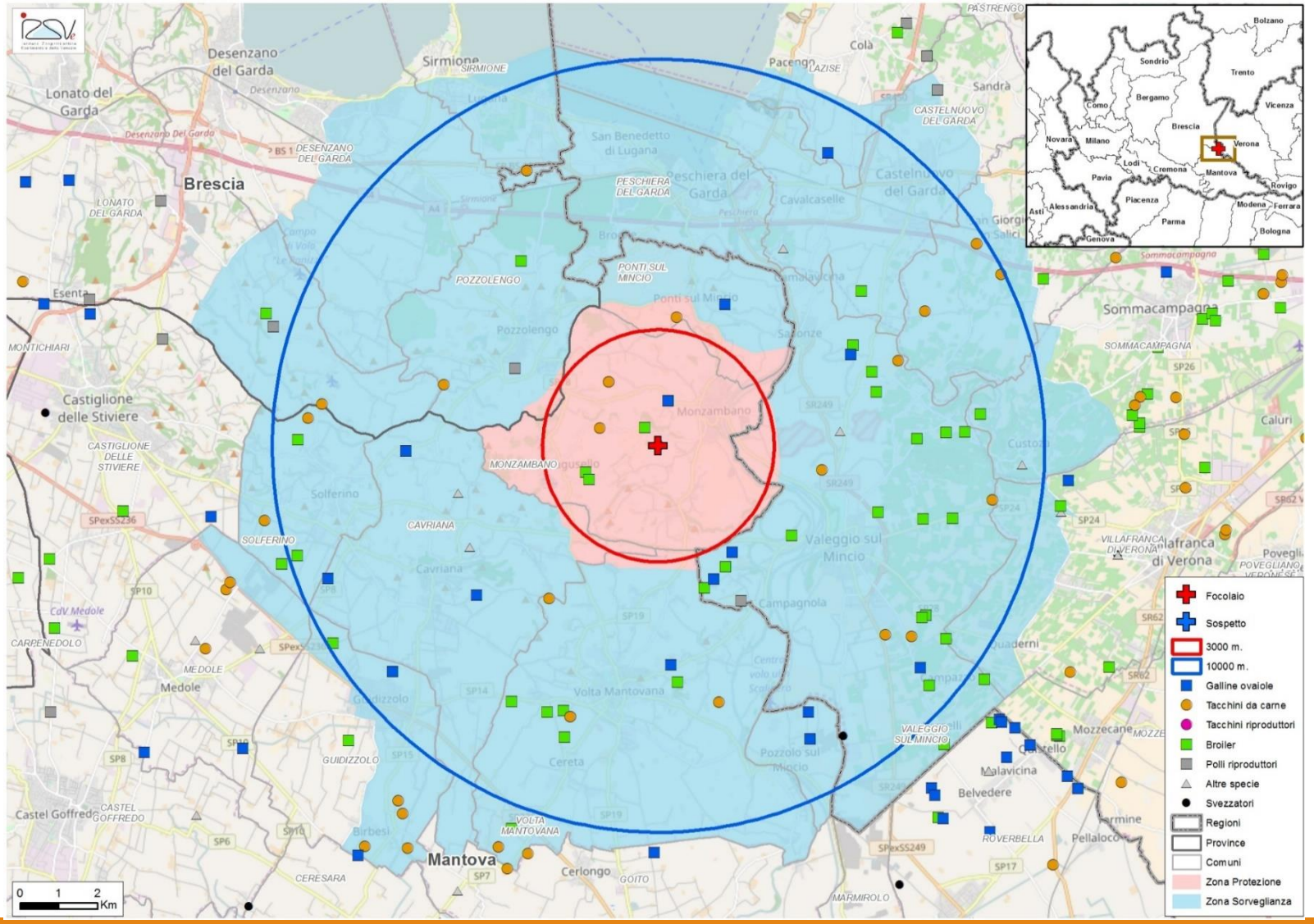
Preventive depopulation

Preventive depopulation was conducted on farms located within the Protection Zones of three outbreaks, accounting for location, species reared, and risk of disease spread.

- 7 farms depopulated;
- More than 330,000 birds culled

Related outbreak	Farm depopulated	No. culled birds	Deopoulation granted on	End of depopulation
Rovigo	Laying hens	36,737	27/01/2017	03/02/2017
Verona	Turkeys	8,000	22/02/2017	22/02/2017
Mantua	Turkeys	9,280	24/02/2017	03/03/2017
	Broiler	90,000		
	Turkeys	12,000		
	Broiler	93,000		
	Broiler	82,500		

Preventive depopulation (Mantua province)

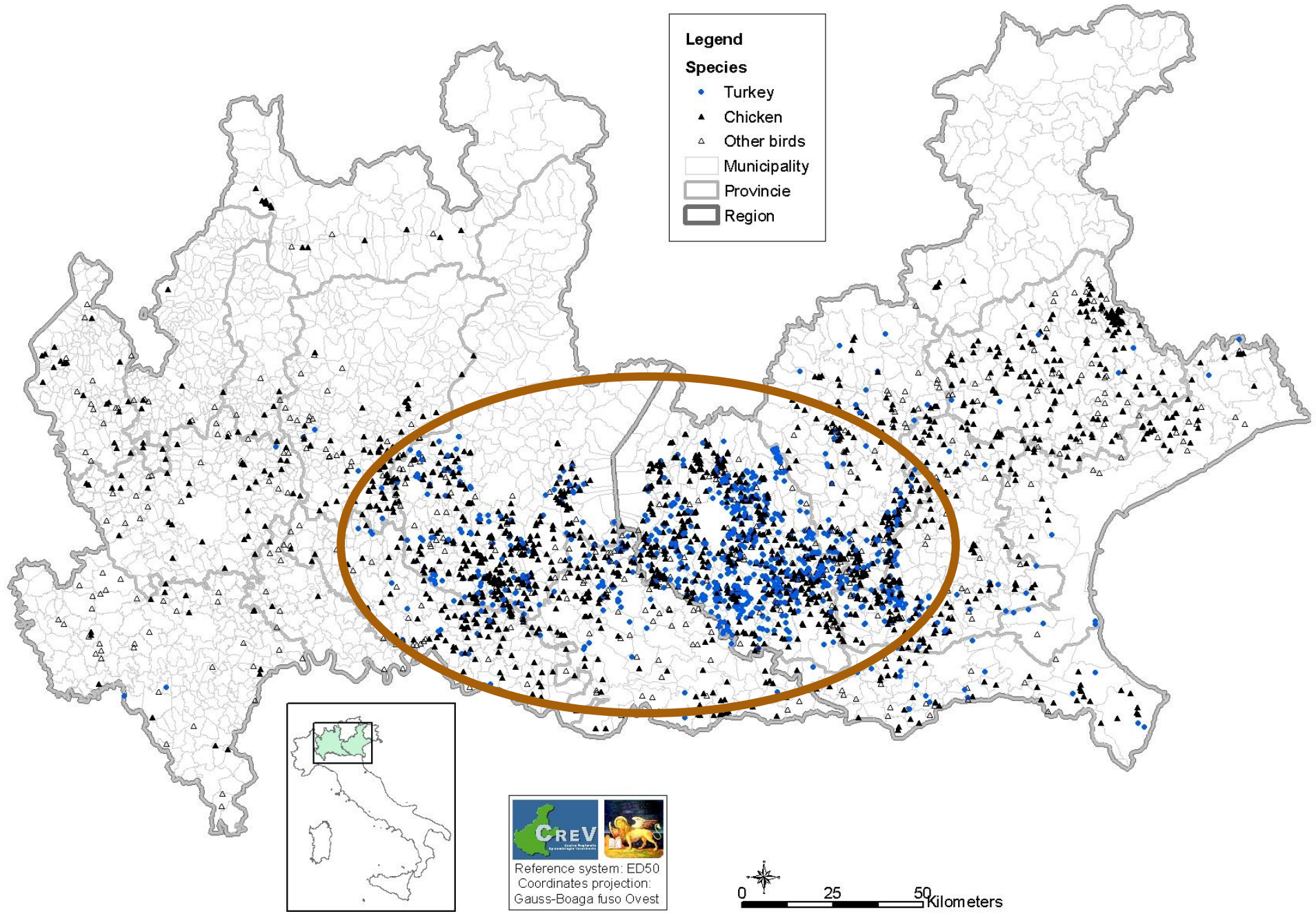


Control measures in the Densely Populated Poultry Area (DPPA)

1. Housing of day old turkeys is prohibited
2. Pre-movement controls on fattening turkeys (to abbatoirs):
   - clinical ispection (24 h before first loading)
   - favourable outcome of tests performed 36 h before first loading and every 36 h until the end of loading procedures
3. Pre-movement controls on ready-to-lay pullets (to laying farm):
   - clinical examination (24 h before first loading)
   - favourable outcome of tests performed 24 h before first loading
4. Pre-movement controls on other poultry:
   - clinical inspection (48 h before first loading)
   - favourable outcome of tests performed 48 h before first loading

Biosecurity measures in the Densely Populated Poultry Area (DPPA)

1. Functional separation of production between poultry companies of Lombardy, Veneto, Piedmont, and Emilia Romagna
2. Enhanced biosecurity measures in particular during vaccination/treatments/loading procedures


Legend
Species
Turkey
Chicken
Other birds
Municipality
Provincie
Region
CREV
Reference system: ED50
Coordinates projection:
Gauss-Boaga fuso Ovest
0
25
50
Kilometers

Control measures at a National level

1. Moving of meat turkeys to slaughter only after clinical inspection (24 h before first loading) and favourable outcome of tests performed 72 h before first loading

Phylogenetic analysis

All the H5 HPAI viruses detected in Italy between December 2016 and January 2017 group in the **clade 2.3.4.4**.

This clade also includes H5N8 and H5N5 viruses identified in 2016-17 in Europe, Russia, Mongolia, India, and China

Viruses detected in wild birds

The H5N8 viruses identified in an Eurasian wigeon and in a swan resulted closely related, and showed high genetic similarity with viruses detected in turkeys in UK and in a live-decoy bird in France

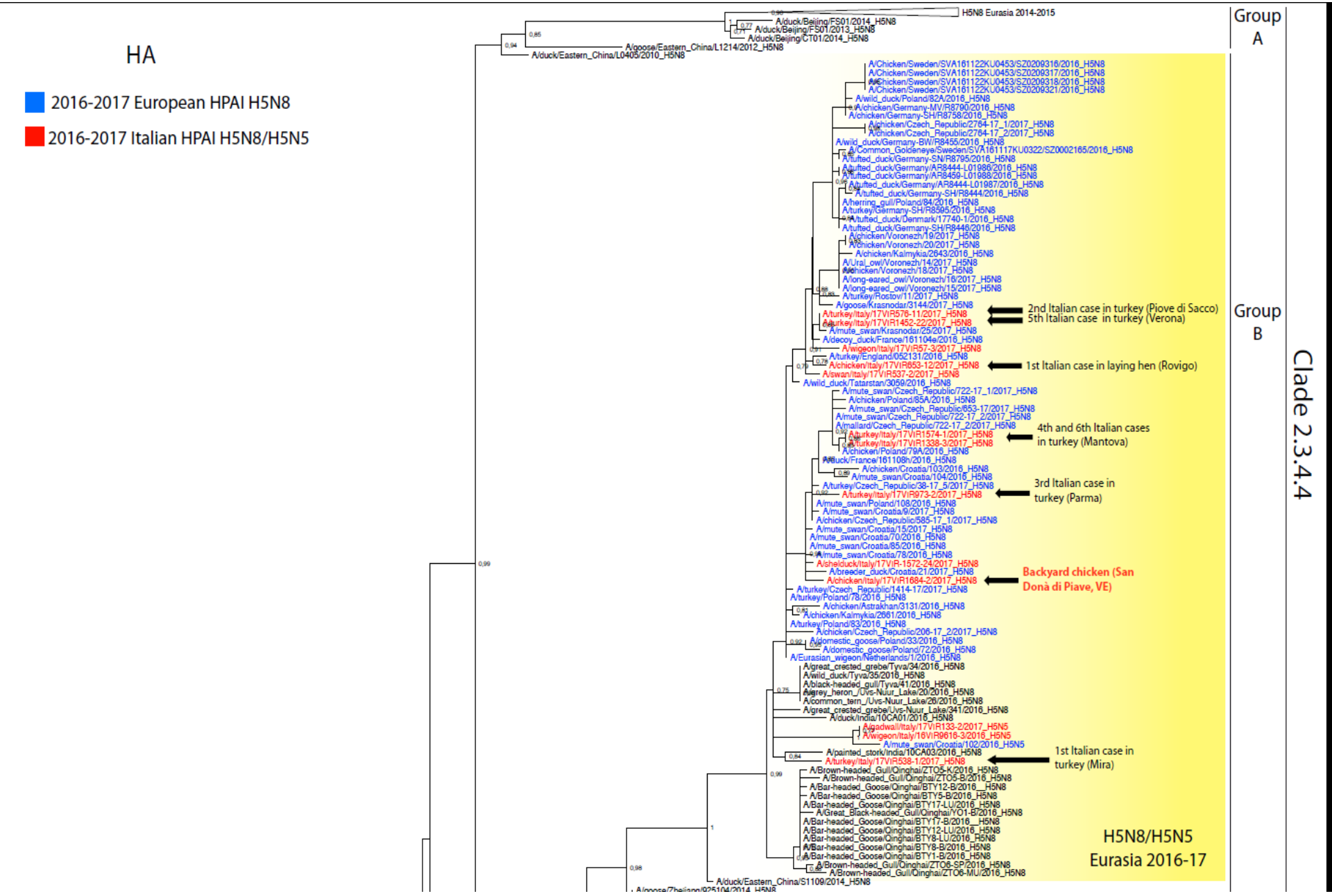
The H5N5 viruses identified in an Eurasian wigeon and in a gadwal show high similarity for HA with a virus detected in Poland and for NA with a virus detected in Singapore

Viruses detected in domestic poultry

The viruses detected in the first three poultry farms in Veneto region, in the case in Parma and in the first case in Mantua showed low similarity, suggesting 5 separated introductions from wild population

The H5N8 identified in the 4° case (Verona province) shows 100% similarity of HA gene with virus detected in the second outbreak, although epidemiological investigation did not found any link between the two farms

The H5N8 identified in the 6° case (Mantua province) shows high similarity of HA gene with virus detected in the 5° outbreak (Mantua province)


HA
2016-2017 European HPAI H5N8
2016-2017 Italian HPAI H5N8/H5N5
H5N8 Eurasia 2014-2015
A/duck/Beijing/FS01/2014_H5N8
A/duck/Beijing/FS01/2013_H5N8
A/duck/Beijing/CT01/2014_H5N8
A/goose/Eastern_China/L1214/2012_H5N8
A/duck/Eastern_China/L0405/2010_H5N8
Group A
Group B
Clade 2.3.4.4
2nd Italian case in turkey (Piove di Sacco)
5th Italian case in turkey (Verona)
1st Italian case in laying hen (Rovigo)
4th and 6th Italian cases in turkey (Mantova)
3rd Italian case in turkey (Parma)
Backyard chicken (San Donà di Piave, VE)
1st Italian case in turkey (Mira)
H5N8/H5N5 Eurasia 2016-17
A/duck/Eastern_China/S1109/2014_H5N8

Thanks for your attention