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Annual Report on surveillance for avian influenza in poultry and wild birds in Member States of the European Union in 2018

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- EU MSs carry **surveillance in poultry and wild birds** (Council Directive 2005/94/EC)
- Implementation of the surveillance programmes (Commission Decision 2010/367/EU; Commission Decision 2018/1136)
- Surveillance data submitted to EC: **31st Jul + 31st Jan**
- **EFSA:** Data analysis and report of 2018 surveillance data
- **EFSA:** Data collection, analysis and report from 2019 onwards



Annual Report

on surveillance
for avian influenza in
poultry and in wild birds in
Member States of the
European Union
in 2017



- Animal &
- Plant Health
- Agency



SCIENTIFIC REPORT

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Annual Report on surveillance for avian influenza in poultry and wild birds in Member States of the European Union in 2018

Abstract

Avian influenza (AI) is a viral infectious disease that affects all species of domestic and wild birds. The viruses causing this disease can be of high (HPAI) or low (LPAI) pathogenicity and represent a continuous threat to poultry in Europe. Council Directive 2005/94/EC requests European Union Member States (MS) to carry out surveillance in poultry and wild birds following guidelines that were subsequently provided by the European Commission (EC). Therefore, MS and Switzerland have implemented surveillance programmes to yearly monitor incursions of AI viruses (AIV) in poultry and wild birds, particularly in migratory wild birds, which are implicated in the intercontinental spread of AIV, and are considered the main source of introduction of AIV in poultry. Under the above mentioned Council Directive, MS are also requested to notify the results of these surveillance programmes to the responsible authority (the EC, for surveillance activities carried out up to and including 2018). EFSA received a mandate from the EC, to collate, validate, analyse, and summarise in an annual report the data resulting from the avian influenza surveillance programmes. This is the first report produced under this mandate with the data submitted by MS to the EC for surveillance activities carried out in poultry and wild birds in 2018. The surveillance programme in poultry consists of active serological surveys aimed at the detection of poultry establishments (PE) exposed to AIV of either H5 or H7 subtypes. Overall 18,596 PE of different species and production systems (e.g. laying hens, fattening turkeys) were sampled, of which 43 were seropositive for H5 AI and 2 for H7 AI. Seropositive establishments were found in 11 MS comprising different poultry species, with the highest percentage of seropositive establishments being found in waterfowl gamebird, and geese and duck breeding establishments. Surveillance in wild birds is mainly based on the sampling of dead or moribund birds by passive surveillance, and the testing of these samples for presence of influenza virus or virus RNA, particularly of HPAI viruses. A total of 9,145 dead/moribund birds were sampled, with 163 birds testing positive to HPAI virus H5N6. The infected birds were reported by 8 MS and were mostly found between January and April 2018. In this report the wild bird species affected with HPAI are described and the strategy of targeted sampling is assessed. The crude odds ratios of HPAI detection as a function of the area status (high-risk versus non high-risk areas) and target species (species belonging to the target list versus species not belonging to the target list) are estimated. The surveillance findings for 2018 are also discussed in relation to findings from previous years and current knowledge on the epidemiology of AI in Europe.

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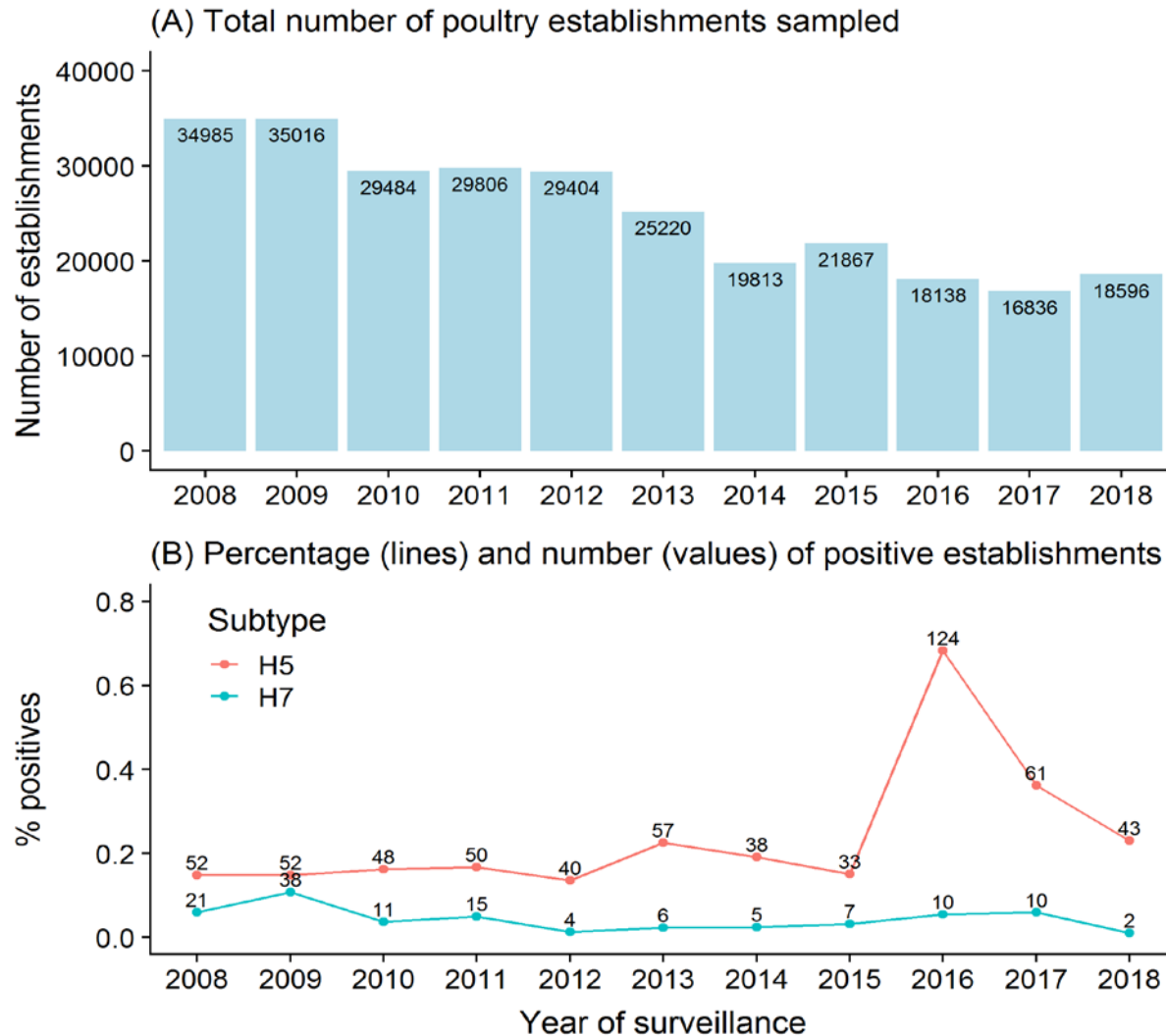
-EFSA website
-40 pages

POULTRY

- Poultry Establishments (PE)
- PE sampled: by reporting country and poultry category with **spatial information**
- Serological results: by reporting country and poultry category with **spatial information**
- PCR/virology: not always

WILD BIRDS

- No wild birds (WB) population data
- Number of WB sampled by passive surveillance (also results for active when reported)
- Sampled: by reporting country and species/order with **spatial and temporal information**
- PCR and virology and pathogenicity results

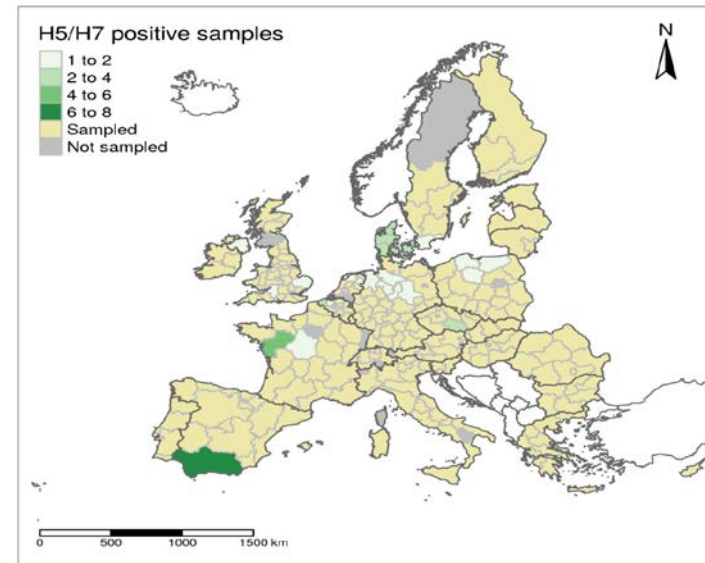
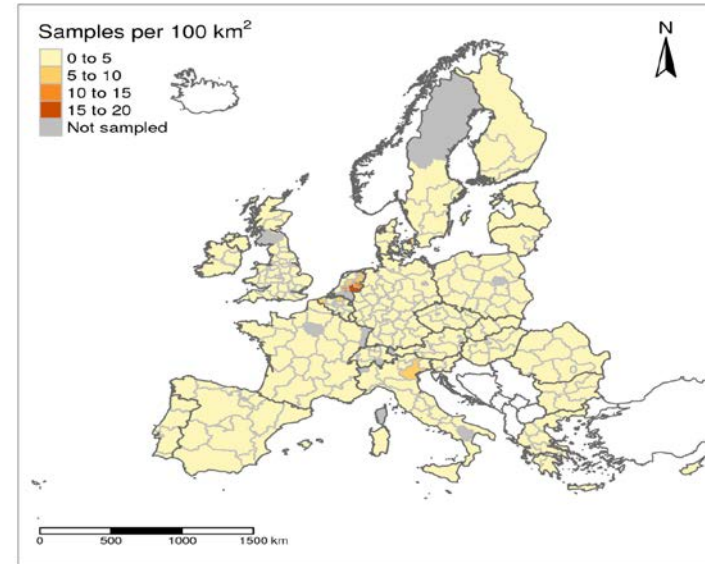
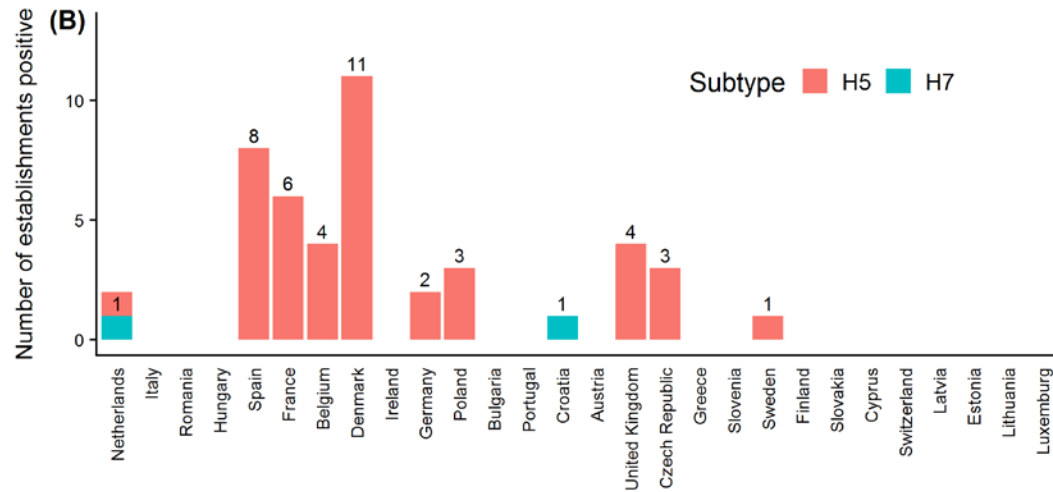
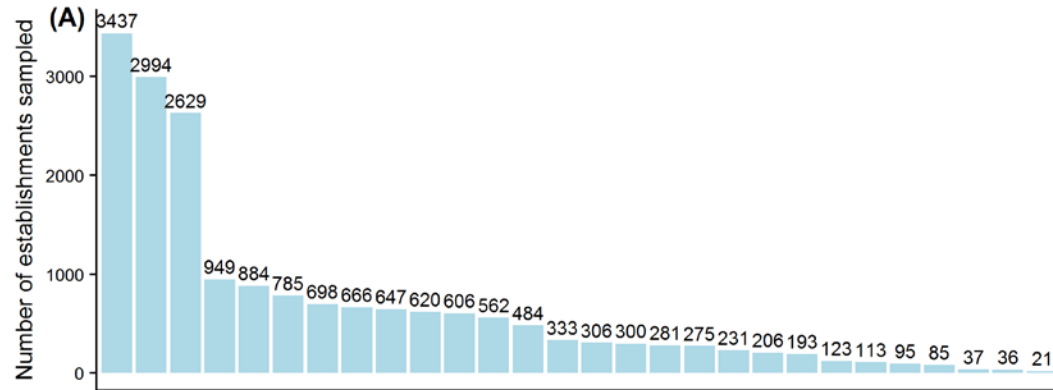


- 18,596 PE surveyed
- 43 (0.23%) H5 AI
- 2 (0.01%) H7 AI
- Overall H5/H7 (0.24%) (1.7 times lower than in 2017: 0.42%)
- 132 other non H5/H7

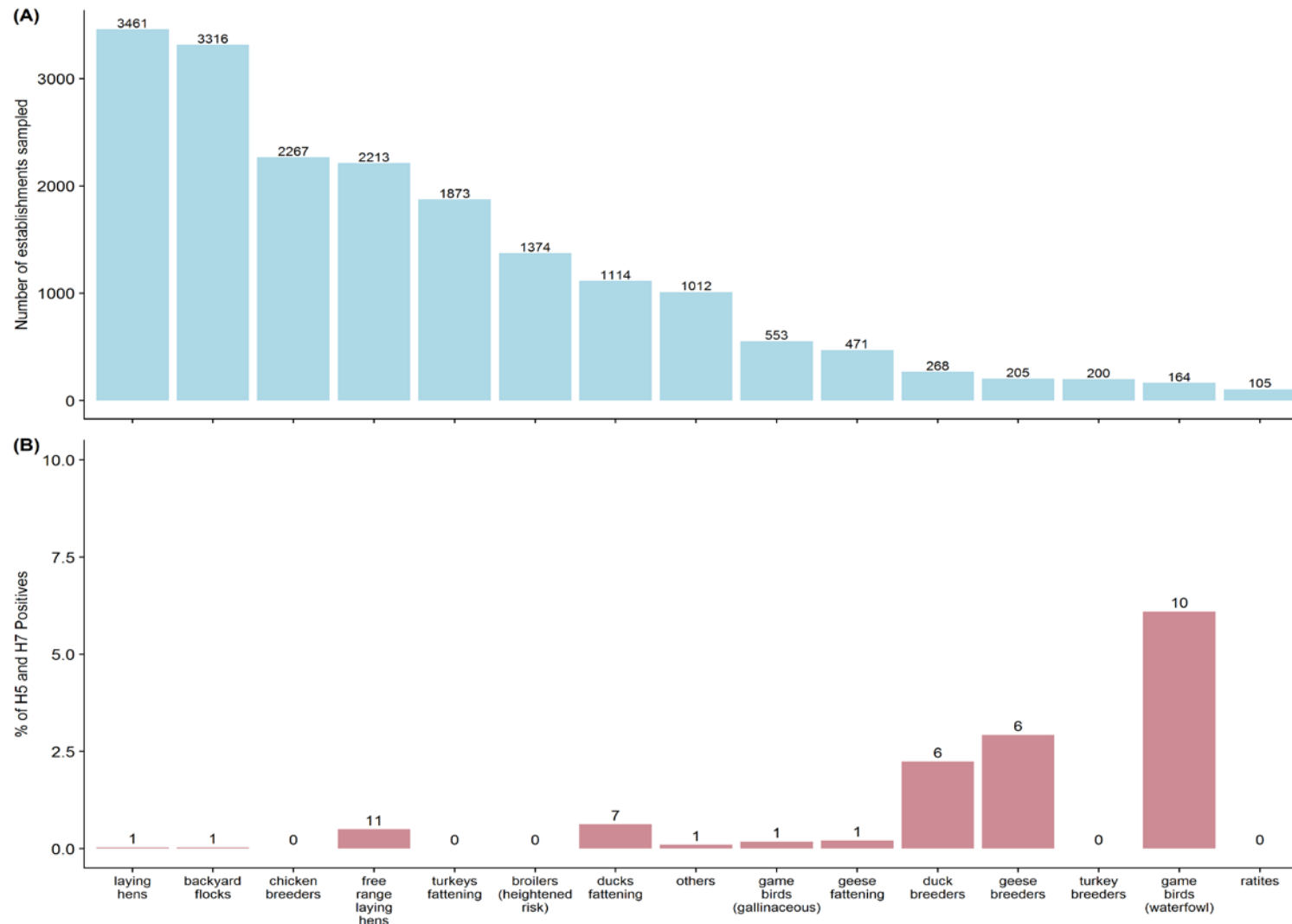
PE and PE sampled by RC and poultry category

	chicken breeders	laying hens	free range laying hens	broilers (heightened risk)	turkey breeders	turkeys fattening	duck breeders	ducks fattening	geese breeders	geese fattening	backyard flocks	game birds (gallinaceous)	game birds (waterfowl)	ratites	others
Austria	37 (106)	62 (667)	62 (856)			60 (150)		17 (27)		52 (67)				16 (16)	
Belgium	187 (199)	209 (141)	205 (97)			49 (38)		20 (23)				25 (18)			3 (4)
Bulgaria	11 (17)	161 (142)		221 (209)	1 (1)	1 (1)	1 (3)	155 (123)			3 (378006)	6 (23)	0 (2)		2 (8)
Croatia	53 (17864)	67 (32868)		1 (6932)	2 (772)		9 (916)		7 (476)		194 (26708)				
Cyprus	9 (9)	23 (24)	12 (13)	3 (4)		6 (7)					56 (1247)	4 (4)			
Czech Republic		54 (131)	19 (19)			44 (58)	25 (25)	65 (65)	9 (9)	17 (17)		36 (36)	12 (12)		
Denmark	299 (197)		265 (172)	23 (75)		18 (61)		22 (80)		3 (10)		26 (75)	10 (22)		
Estonia		37 (37)													
Finland	34 (58)	55 (411)	47 (52)	2 (3)	2 (4)	38 (40)		2 (3)		2 (2)		9 (16)	1 (3)	1 (2)	
France	51 (640)	35 (2497)	67 (1648)		55 (257)	46 (821)	76 (245)	279 (2947)	28 (34)	57 (66)		52 (260)	22 (59)		17 (151)
Germany	15 (265)	41 (3492)	93 (2939)	9 (427)	11 (32)	121 (1155)	20 (54)	145 (728)	16 (24)	121 (1864)	1 (2)	8 (1533)		9 (364)	10 (9783)
Greece	50 (82)	60 (419)	43 (139)	29 (36)	3 (3)	23 (40)						15 (17)		2 (4)	50 (107)
Hungary	47 (135)	54 (389)	16 (13)		25 (25)	52 (259)	31 (32)	78 (392)	41 (61)	70 (384)	490 (238666)	30 (70)	10 (13)	5 (6)	
Ireland	202 (111)	58 (43)	108 (95)	112 (68)	3 (3)	143 (134)		12 (11)		2 (3)		7 (6)			
Italy	229 (195)	746 (674)	80 (78)		48 (39)	825 (718)	7 (8)	55 (53)	4 (5)	7 (11)	147 (74)	7 (9)		10 (13)	829 (675)
Latvia	2 (2)	19 (20)				2 (2)		1 (1)		1 (1)	60 (3854)				
Lithuania	6 (8)	17 (23)		6 (29)		6 (10)		1 (1)							
Luxemburg		4 (4)	4 (4)	3 (3)							9 (500)			1 (1)	
Netherlands	566 (311)	936 (650)	908 (453)	872 (764)		81 (41)	21 (10)	45 (48)							8 (8)
Poland	56 (463)	86 (603)	31 (64)		18 (11)	65 (205)	30 (27)	88 (330)	86 (223)	86 (956)		36 (70)	2 (4)	22 (60)	
Portugal	78 (76)	106 (118)	45 (24)	62 (405)		61 (127)	4 (2)	22 (14)			64 (237000)	34 (47)	1 (2)	7 (9)	
Romania	74 (37)	338 (194)				32 (16)	3 (2)	1 (1)			2162 (1381)	17 (9)			2 (1)
Slovakia	12 (12)	58 (64)			11 (8)	10 (11)	2 (2)	5 (6)	1 (1)	2 (4)		16 (16)		6 (10)	
Slovenia	7 (7)	42 (82)	33 (50)			39 (39)					104 (2419)	5 (5)	1 (1)		
Spain	202 (423)	76 (648)	63 (348)	1 (857)	10 (15)	53 (623)	2 (3)	50 (54)	7 (7)	8 (10)	26 (8357)	178 (405)	94 (109)	23 (30)	91 (542)
Sweden	32 (36)	63 (240)	45 (149)	30 (31)	2 (2)	16 (16)		2 (3)				9 (13)	4 (7)	3 (2)	
Switzerland			67 (1821)			28 (91)									
United Kingdom	8 (188)	54 (710)			9 (37)	54 (238)	37 (113)	49 (94)	6 (11)	43 (73)		33 (79)	7 (25)		

PE sampled and H5/H7 serology positive



PE sampled and H5/H7 serology positive



NON H5/H7

- 132 PE
- Largest numbers in waterfowl gamebirds (n=61) and fattening ducks (n=31)

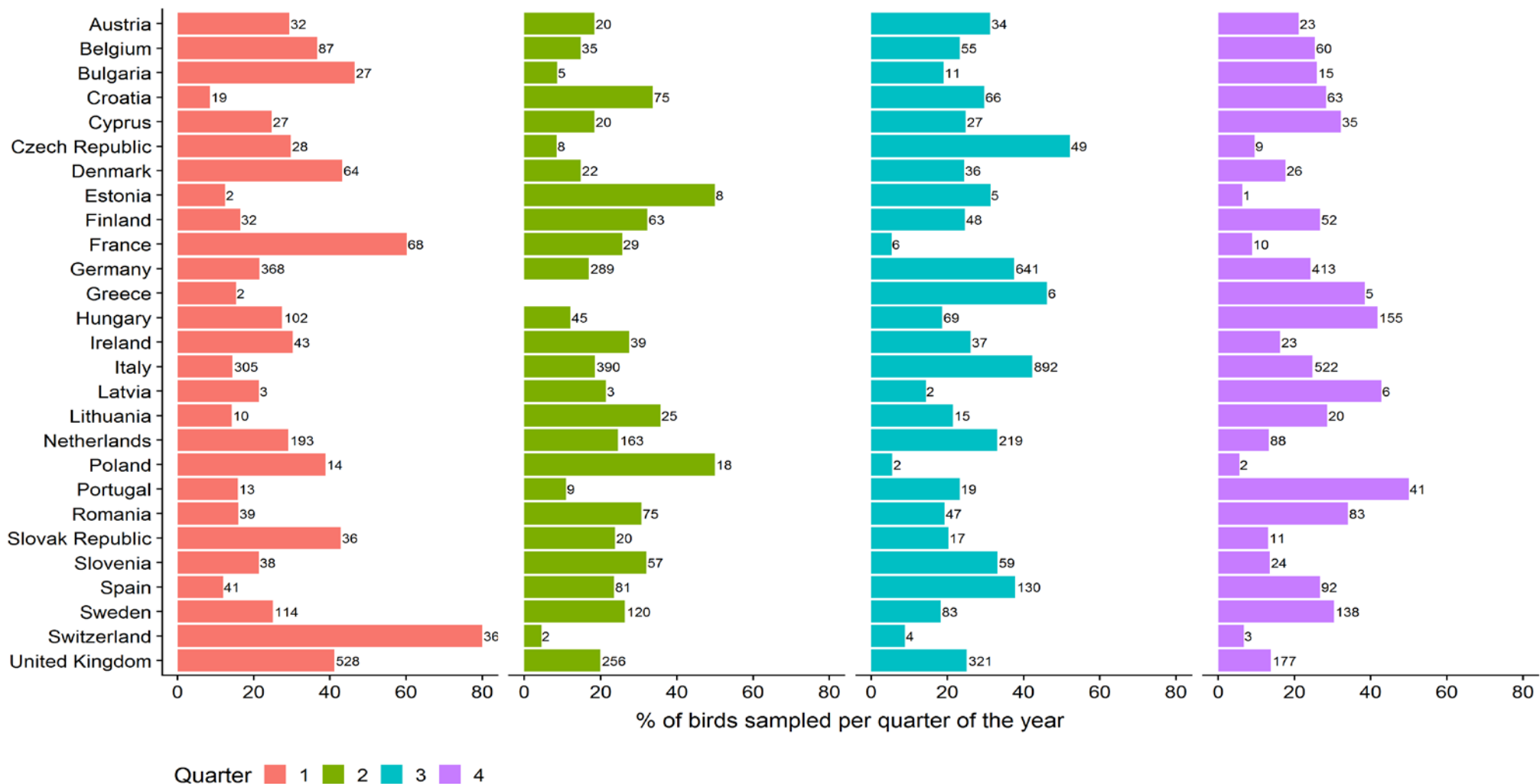
Among gallinaceous:

- Fattening turkeys (n=20)
- Free-range/conventional laying hens (n=16/16)

Reporting Country	Passive surveillance				Active surveillance	Total
	Average 2011-2015	2016	2017	2018	2018	2018
Austria	110	201	897	109	3	112
Belgium	228	280	367	237	1,290	1,527
Bulgaria	18	9	47	58	2	60
Cyprus	107	124	117	109	24	133
Czech Republic	74	89	330	94	0	94
Germany	1,334	5,861	8,533	1,711	4,056	5,767
Denmark	22	204	154	148	0	148
Estonia	9	5	38	16	213	229
Greece	52	16	90	13	0	13
Spain	487	264	370	344	515	859
Finland	99	208	316	195	0	195
France	89	190	766	113*	0	113
Croatia	41	116	279	223	0	223
Hungary	1,152	960	703	371	0	371
Ireland	30	25	137	142	0	142
Italy	1,146	1,899	2,019	2,109	0	2,109
Lithuania	13	22	131	70	1	71
Luxembourg	12	2	61	-	-	-
Latvia	2	3	11	14	0	14
Malta	-	-	-	-	-	-
Netherlands	209	536	509	663	0	663
Poland	30	85	209	36	0	36
Portugal	86	116	54	82	1	83
Romania	213	275	528	244	0	244
Sweden	234	354	452	455	0	455
Slovenia	116	151	556	178	0	178
Slovak Republic	21	32	513	84	2	86
United Kingdom	526	537	1,194	1,282	0	1,282
Switzerland**	12	264	162	45	0	45
Total	6,472	12,828	19,543	9,145	6,107	15,252

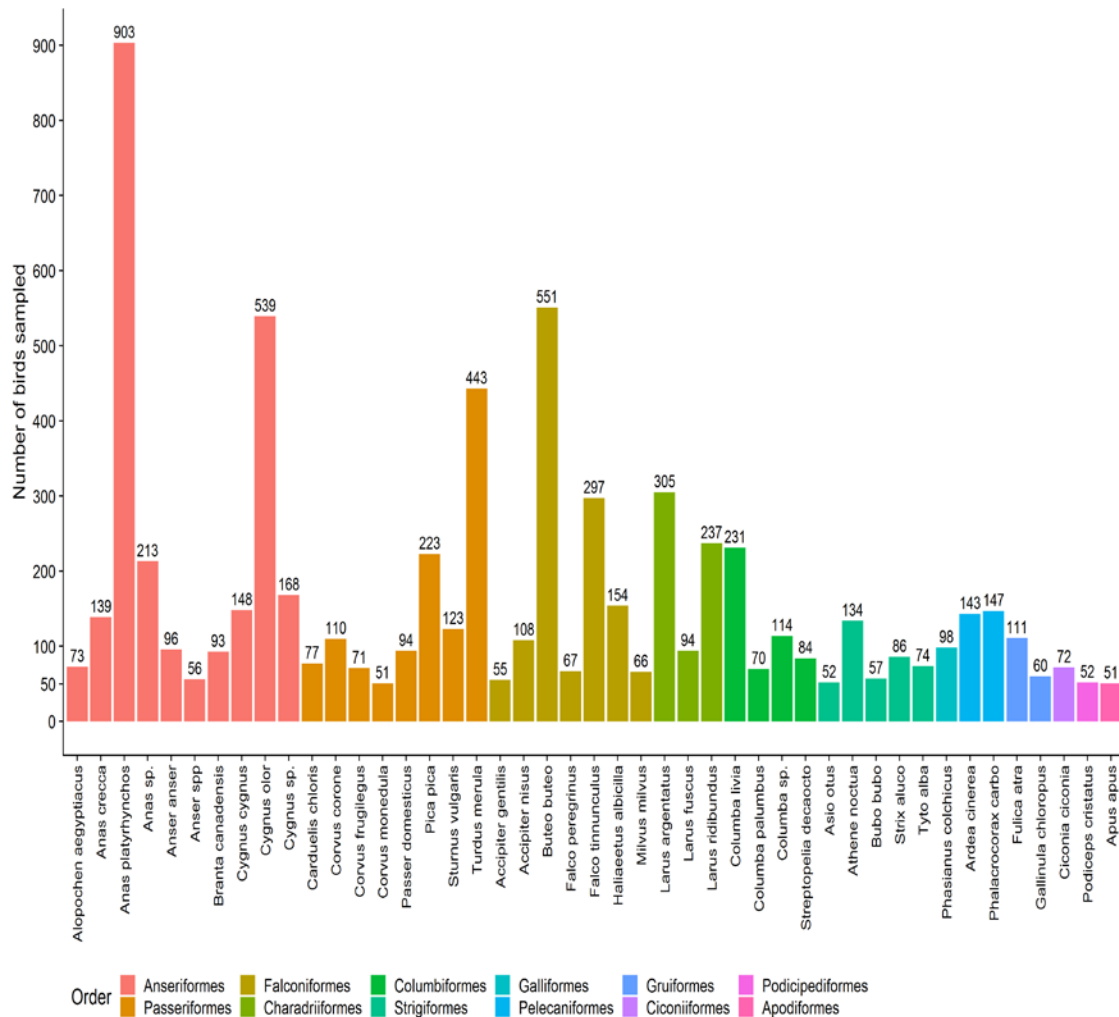
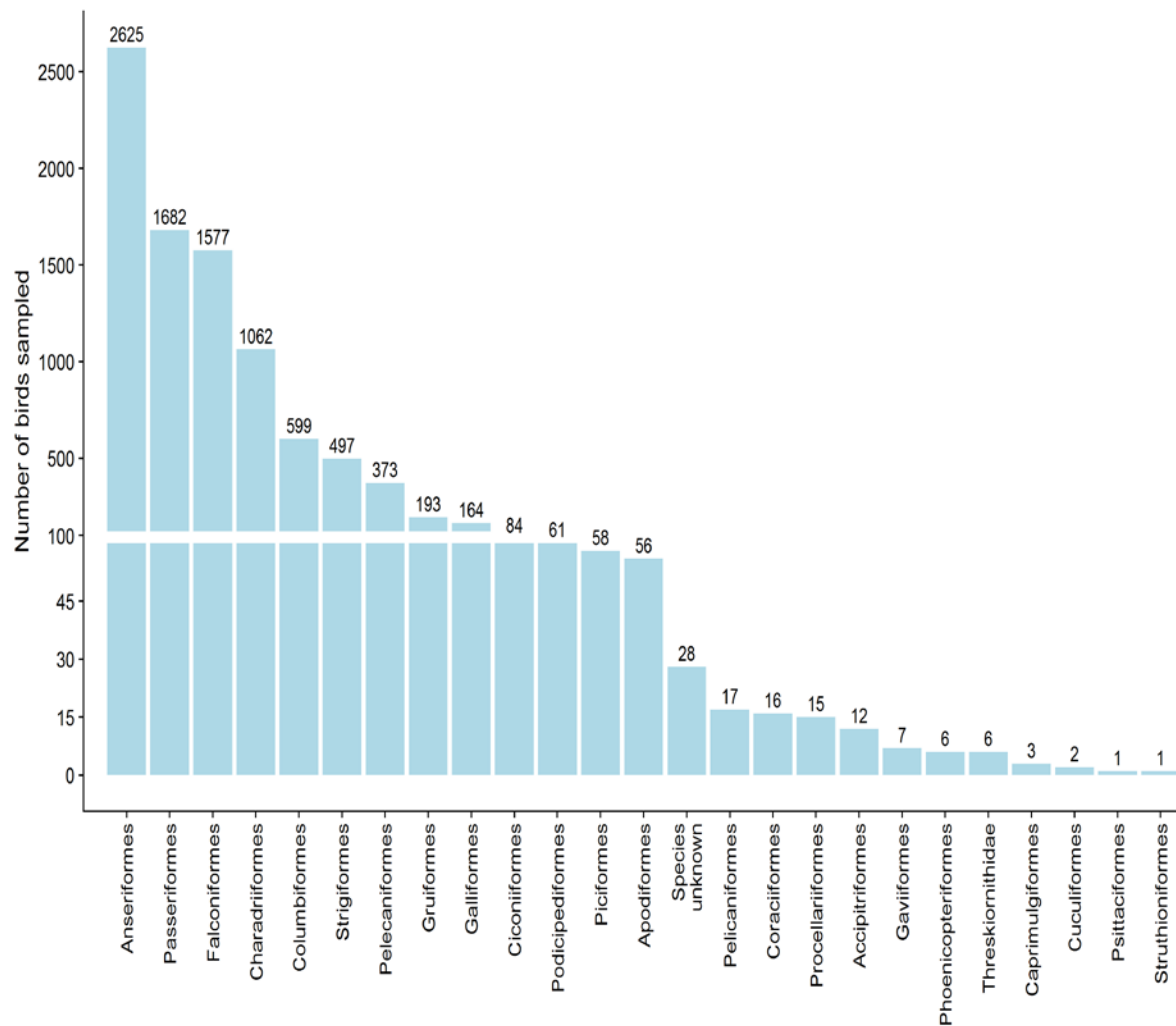
- **WILD BIRDS**
- 15,252 birds (passive+active)
- 9,145 birds passive surveillance
- 163 H5N6 HPAI birds
- 422 LPAI birds

Seasonality of the sampling



Values next to bars are the number of birds sampled

Wild bird species and orders sampled



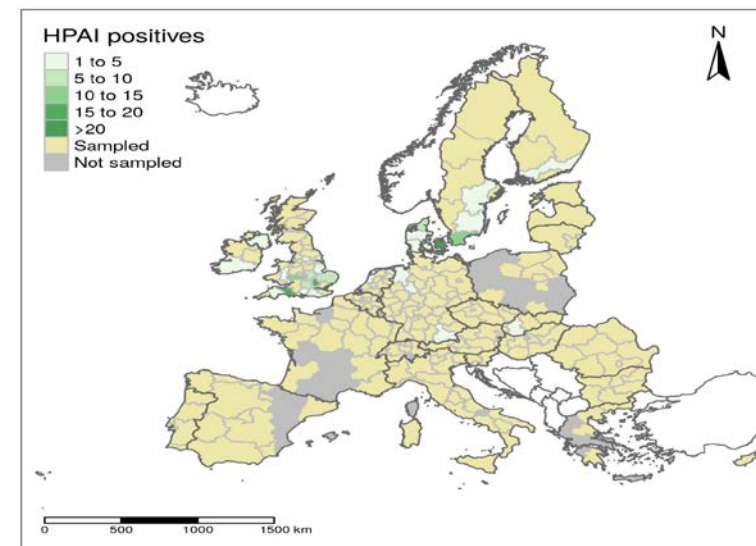
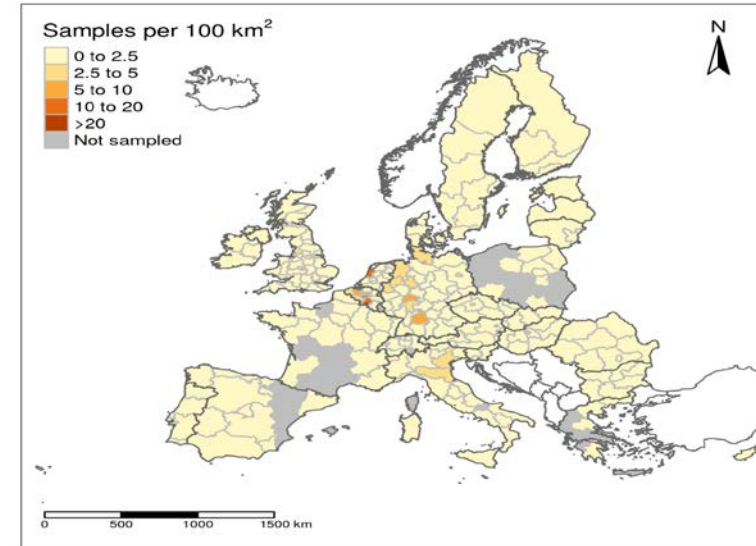
PCR and Virology results: HPAI and LPAI

Bird Status	No. of Birds	PCR positive	VI ^a positive	PCR or VI positive	HPAI
Found dead	8,421	248	54	248	162
Hunted with clinical signs	29	0	0	0	0
Hunted without clinical signs	2,072	122	15	122	0
Injured	287	0	0	0	0
Live with clinical signs	437	1	0	1	1
Live without clinical signs	4,006	212	52	214	0
Total	15,252	583	121	585	163

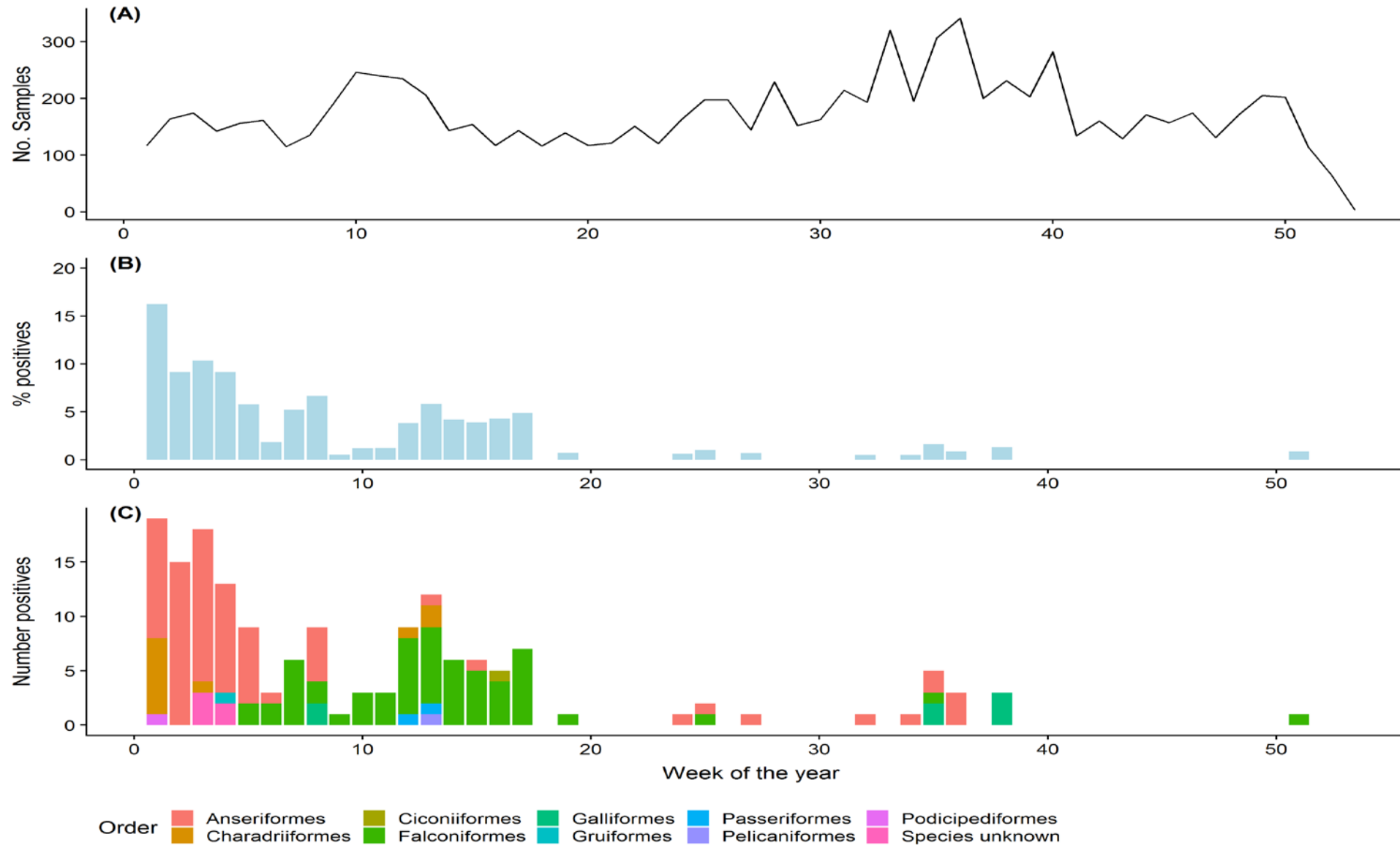
- 585 total
- 163 HPAI (H5N6)
- 422 LPAI (H1 to H13, non H5/H7)

HPAI: spatial distribution

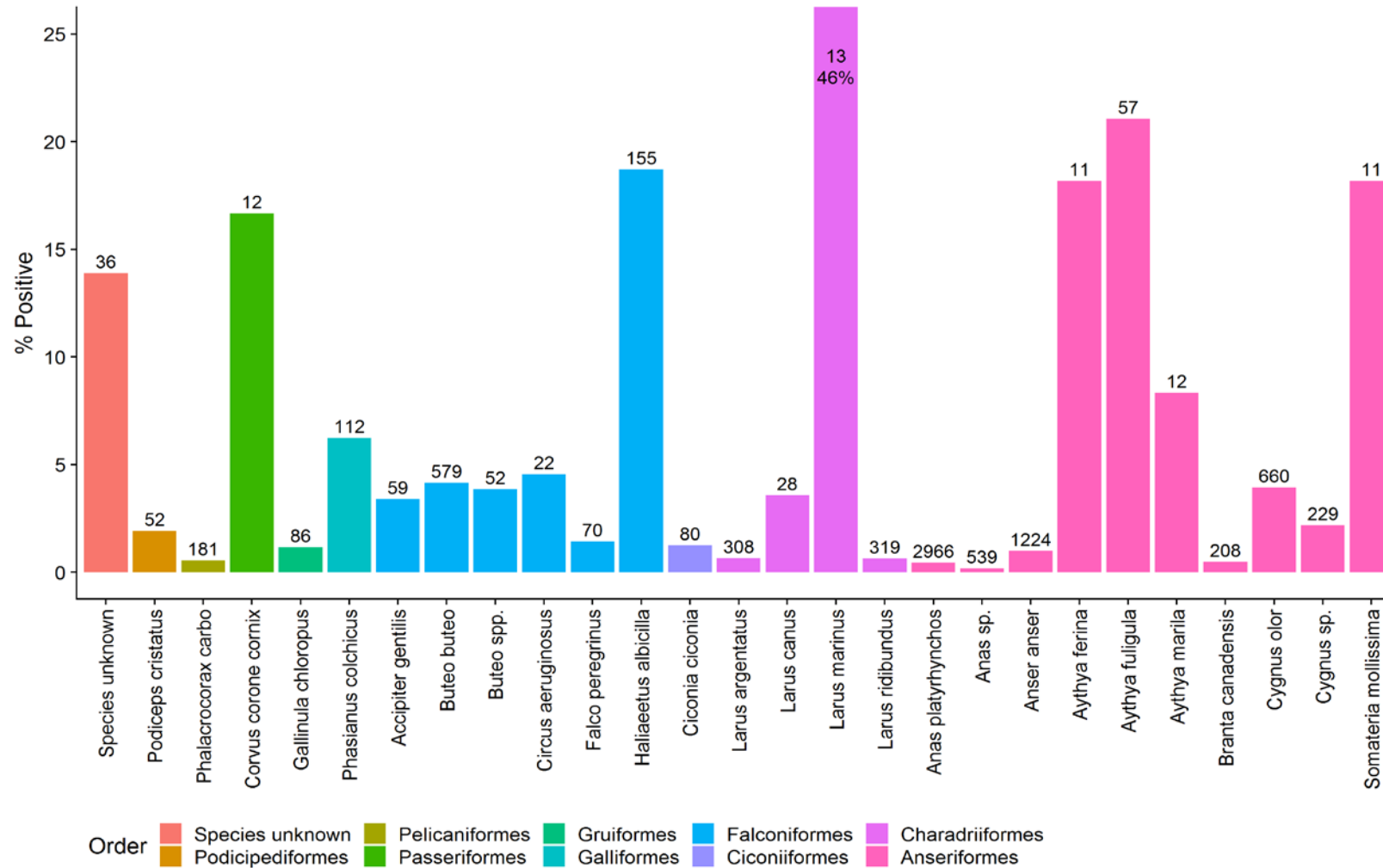
Country	HPAI (H5N6)
Denmark	42
Finland	3
Germany	3
Ireland	3
Netherlands	6
Slovak Republic	1
Sweden	15
United Kingdom	90
All reporting countries	163



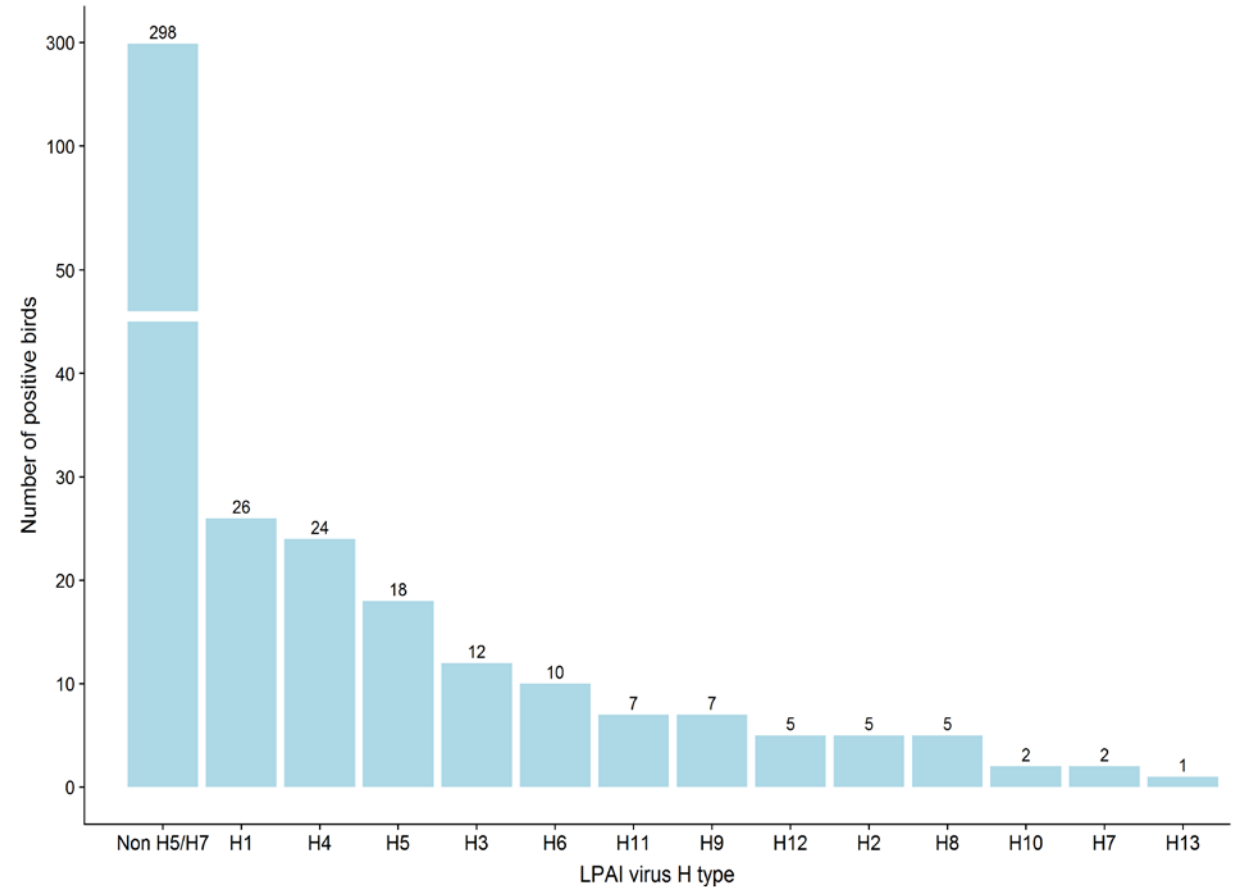
HPAI: temporal distribution



HPAI: species/orders



Country	H5	H7	Other* LPAI
Austria	1	0	6
Belgium	0	0	238
Denmark	0	0	4
Finland	0	0	1
France	2	0	14
Germany	8	0	90
Germany	0	0	14
Italy	0	1	7
Netherlands	3	1	12
Slovak Republic	2	0	1
Slovenia	1	0	0
Spain	0	0	2
Switzerland	0	0	2
United Kingdom	1	0	11



*LPAI birds for which information on the H was missing were included in this category

Sampling of wild birds included the list of target species

Target species	Sampled birds	No. Positives (%)	Crude odds ratio ^a (95% CI) ^b
Yes	4,082	137 (3.4)	8.9 (5.6 – 15.1)
No ^{c, d}	4,632	18 (0.4)	1

- (a) Univariable estimate of the odds ratio for HPAI detection
- (b) 95% confidence intervals (CI)
- (c) Reference category for comparison
- (d) Data on birds for which information on the species they belonged to was missing, or birds for which only genus was reported, were not included in the analysis

- Sampling species included in the list of target species **increases the probability** of detecting HPAI (OR=8.9)
- Adjusted OR for ‘**area status**’ and ‘**reporting country**’ should be estimated
- Important that the platform for reporting ‘**area status**’ information allows the **submission of data** from birds sampled in high-risk areas and non high-risk areas

- Member State representatives for Avian Influenza surveillance
- Wageningen Bioveterinary Research
- Standing Working Group on Avian Influenza
- Animal and Plant Health Agency (UK)
- Istituto Zooprofilattico Sperimentale delle Venezia (EURL for AI and Newcastle Disease)
- EFSA colleagues



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