

**MEMBER STATE
(& THIRD COUNTRIES) REPORTS
FOR AVIAN INFLUENZA 2019**
Based on responses to the questionnaire
received

C. Terregino - A. Bortolami - G. Zamperin

AI-ND EURL (IZSVe)

26th Annual meeting of the National Reference Laboratories (NRLs) for Avian Influenza and Newcastle disease of European Union Member States 2020

● Questionnaire 2019 - Response rate

- Invited Laboratories: 30
- Responses received: 29/30 (96.7%)
 - EU Laboratories 27/28 (96.4%)
 - Non-EU laboratories 2 (100%)

● Responding laboratories

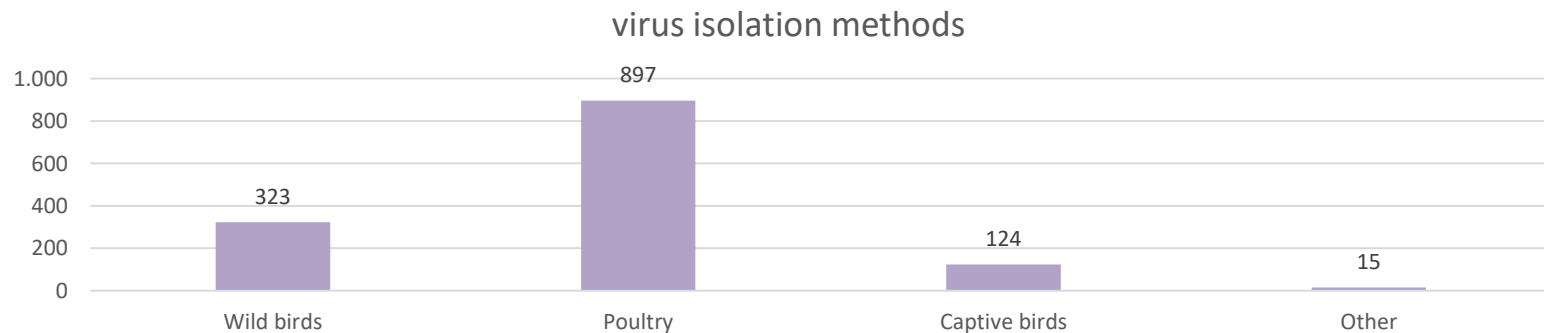
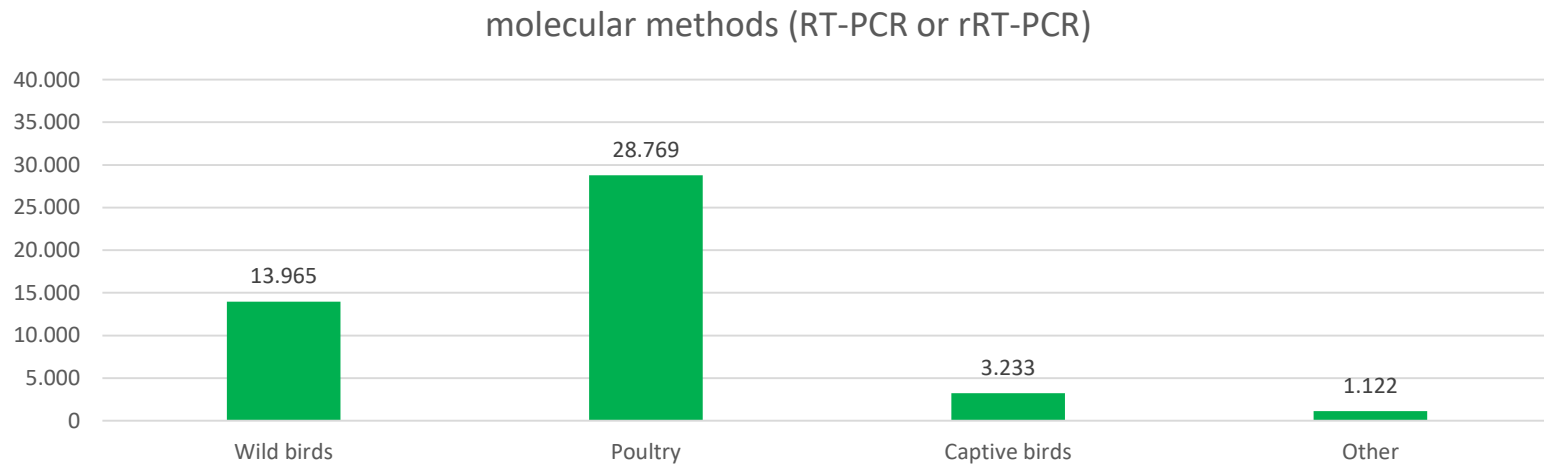
- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Republic of Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- North Macedonia
- The Netherlands
- *Norway*
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- *Switzerland*
- UK

Laboratories with no avian influenza viruses isolated or detected

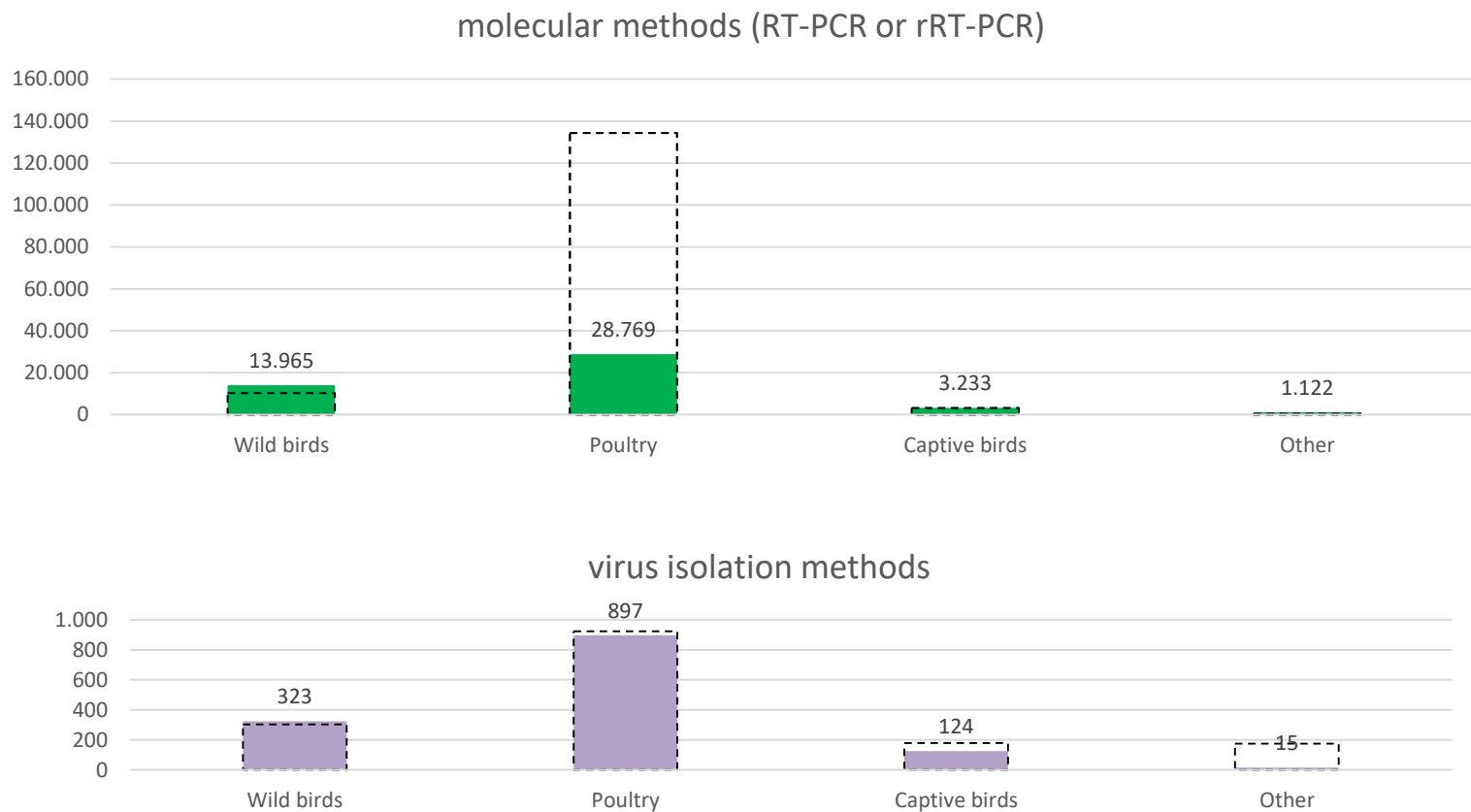
- Cyprus
- Czech Republic
- Greece
- Latvia
- Lithuania
- Luxembourg
- North Macedonia
- Portugal
- Romania
- Slovakia
- Switzerland

2019 vs 2018 vs 2017:
11 vs 10 vs 8

AI 1.1 How many samples from poultry or wild birds were processed by molecular methods (RT-PCR or rRT-PCR) or virus isolation methods?

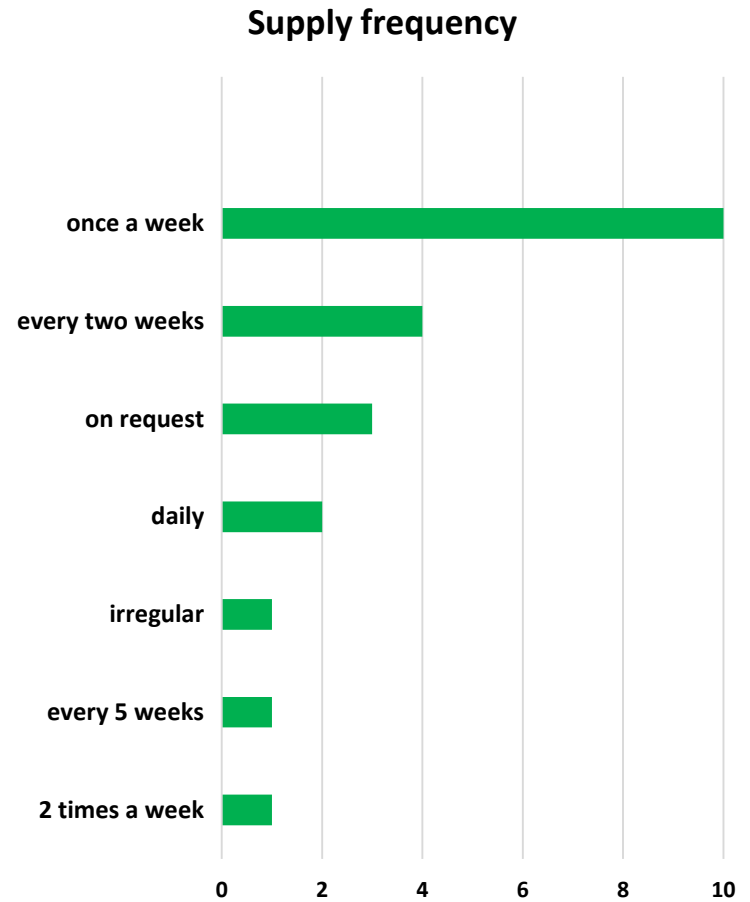
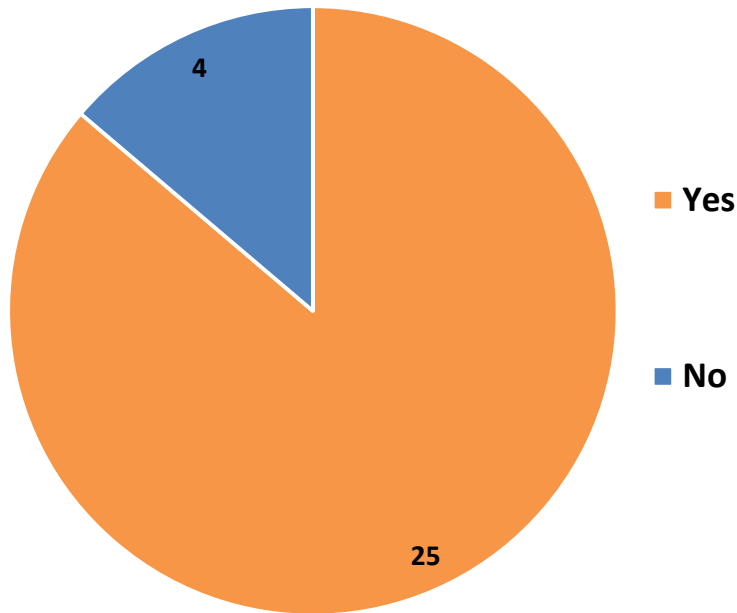


AI 1.1 How many samples from poultry or wild birds were processed by molecular methods (RT-PCR or rRT-PCR) or virus isolation methods?

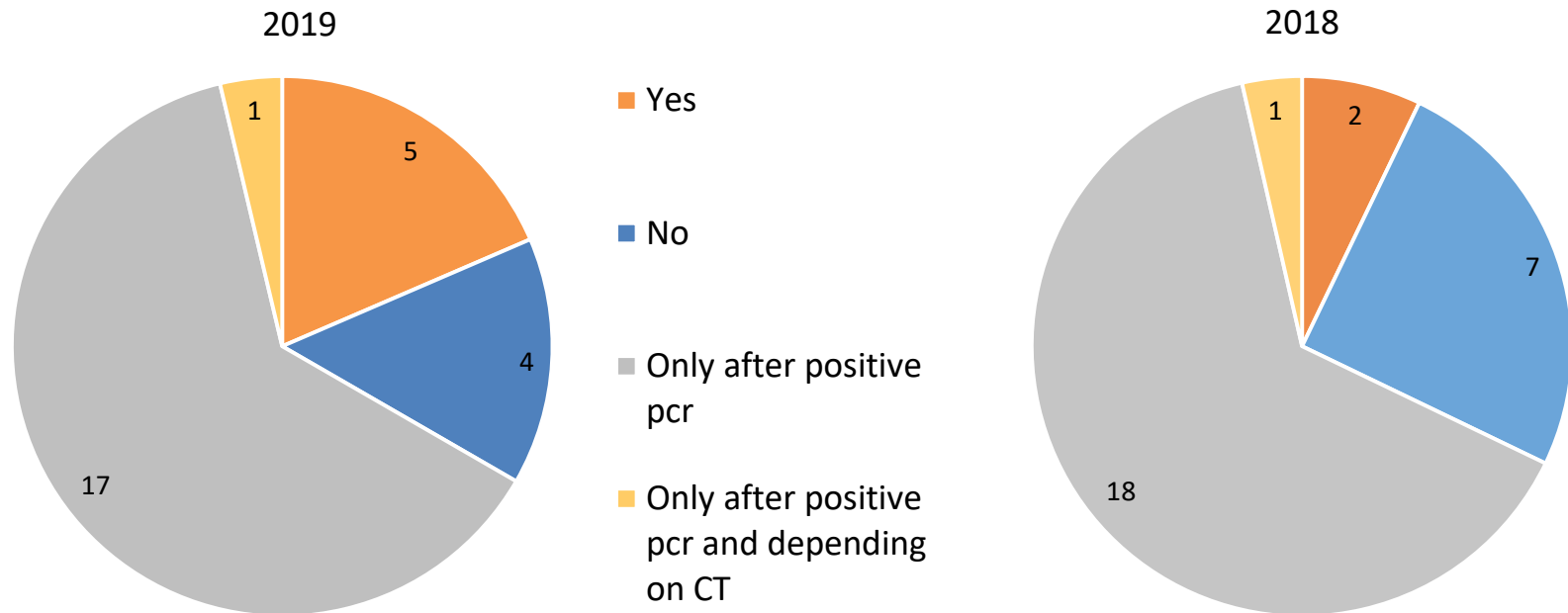


2018 results are shown in dotted line

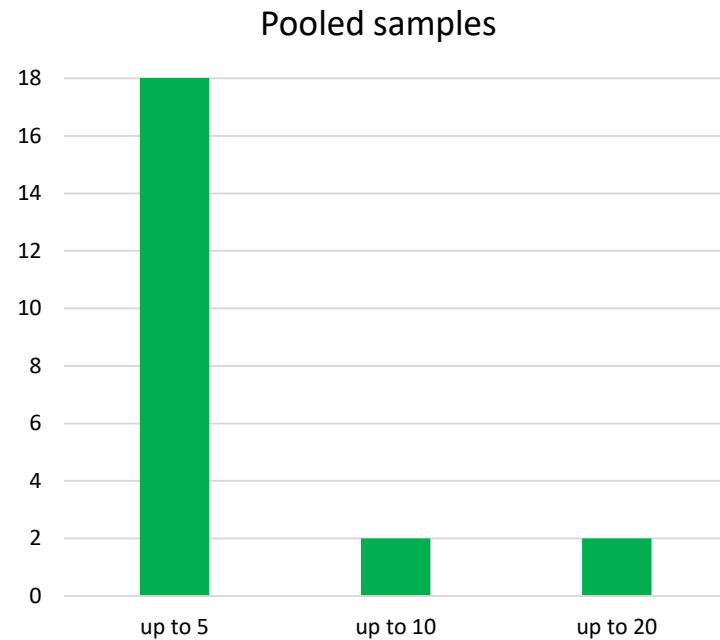
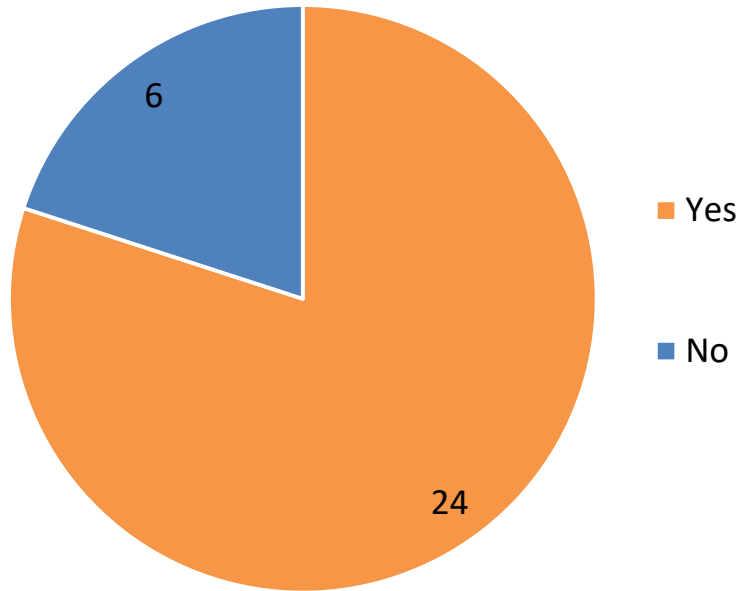
AI 1.2 Do you have access to either embryonated SPF or SAN fowls' eggs?



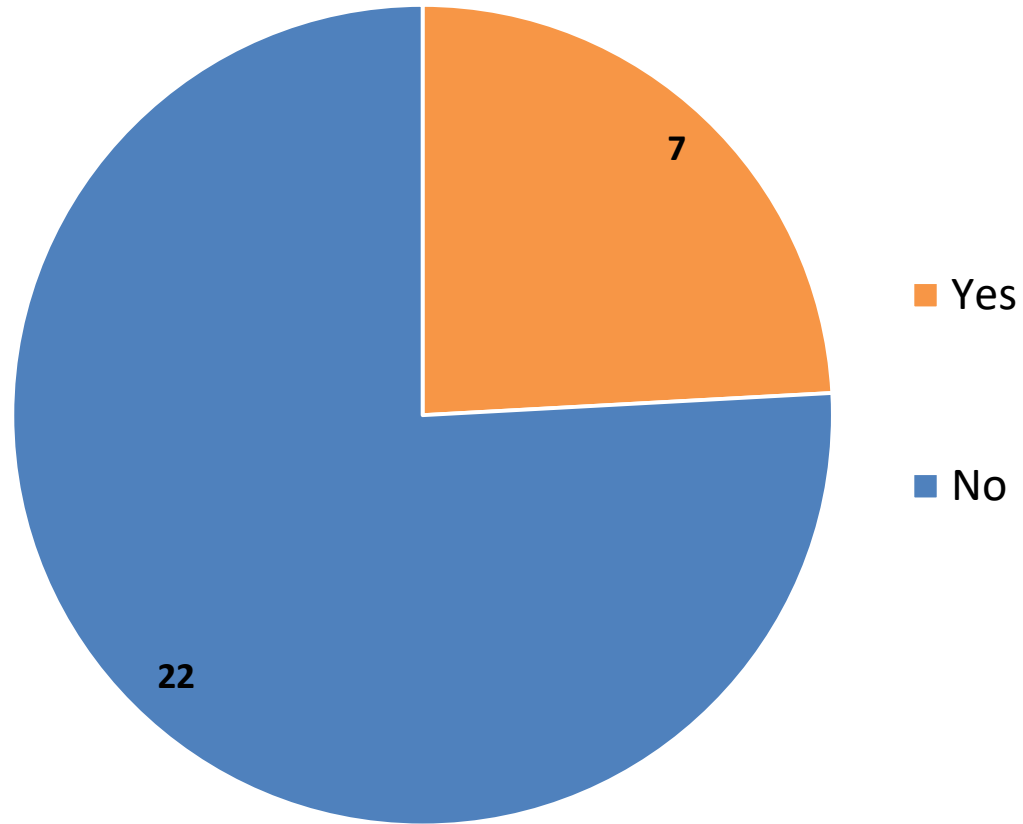
AI 1.3 Do you routinely inoculate eggs with samples from disease suspicions in poultry in parallel with molecular testing or after positive molecular tests?



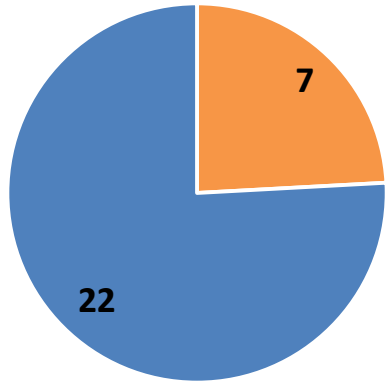
AI 1.4 Do you use swab pooling? If yes, please indicate how many samples are pooled into a single pool for testing.



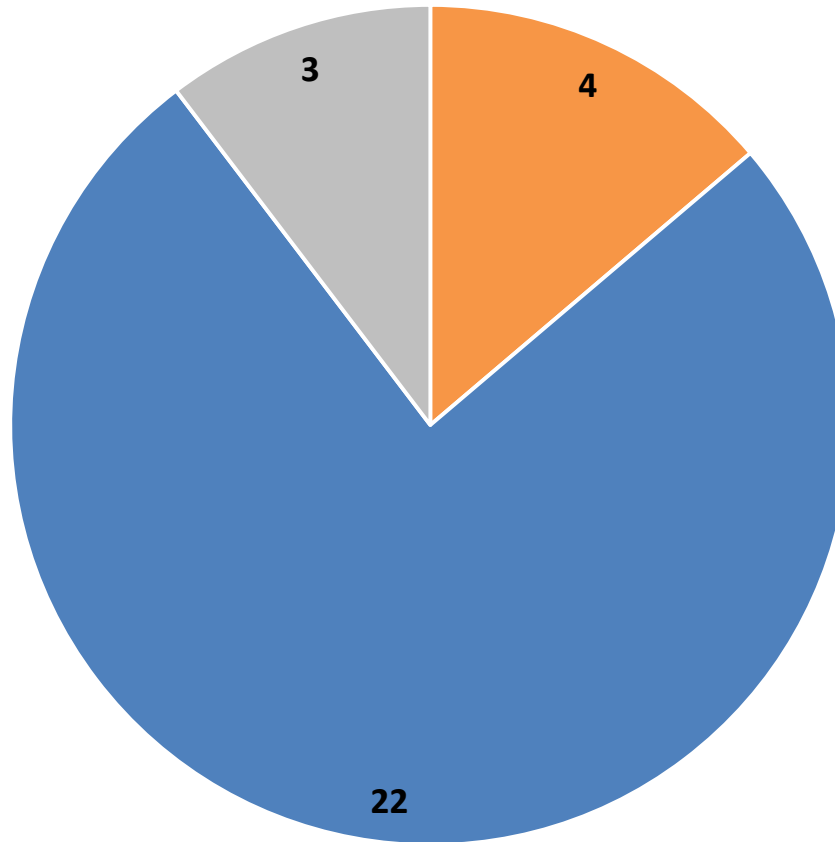
● AI 1.5. Do you perform the IVPI test on H5 and H7 isolates?



AI 1.5. Do you perform the IVPI test on H5 and H7 isolates?
1.5.1 Do you perform the IVPI test also on other subtypes (e.g. H10, H9, H6, H3)?

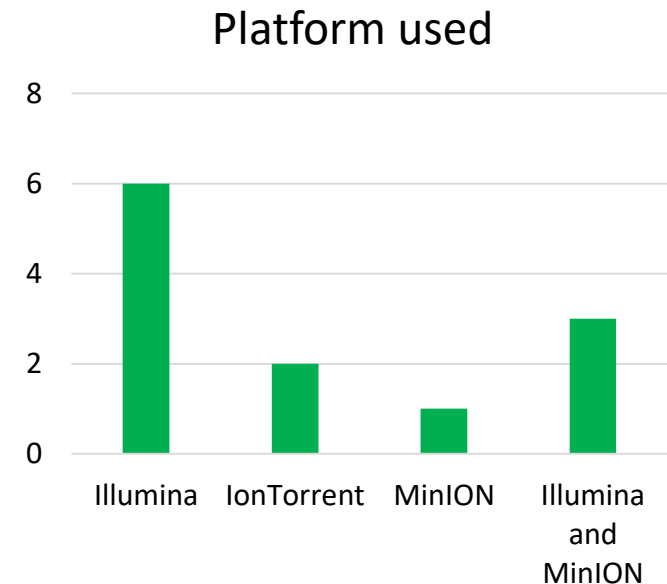
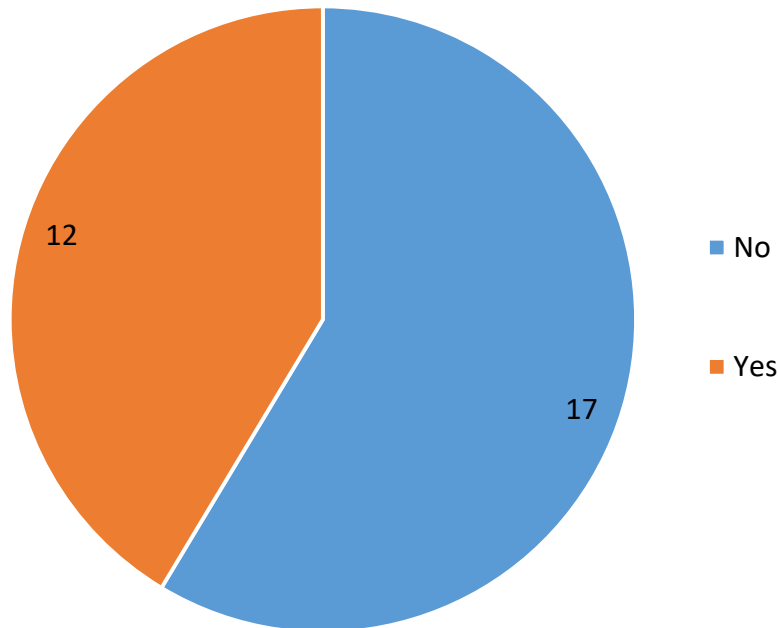


■ Yes
■ No

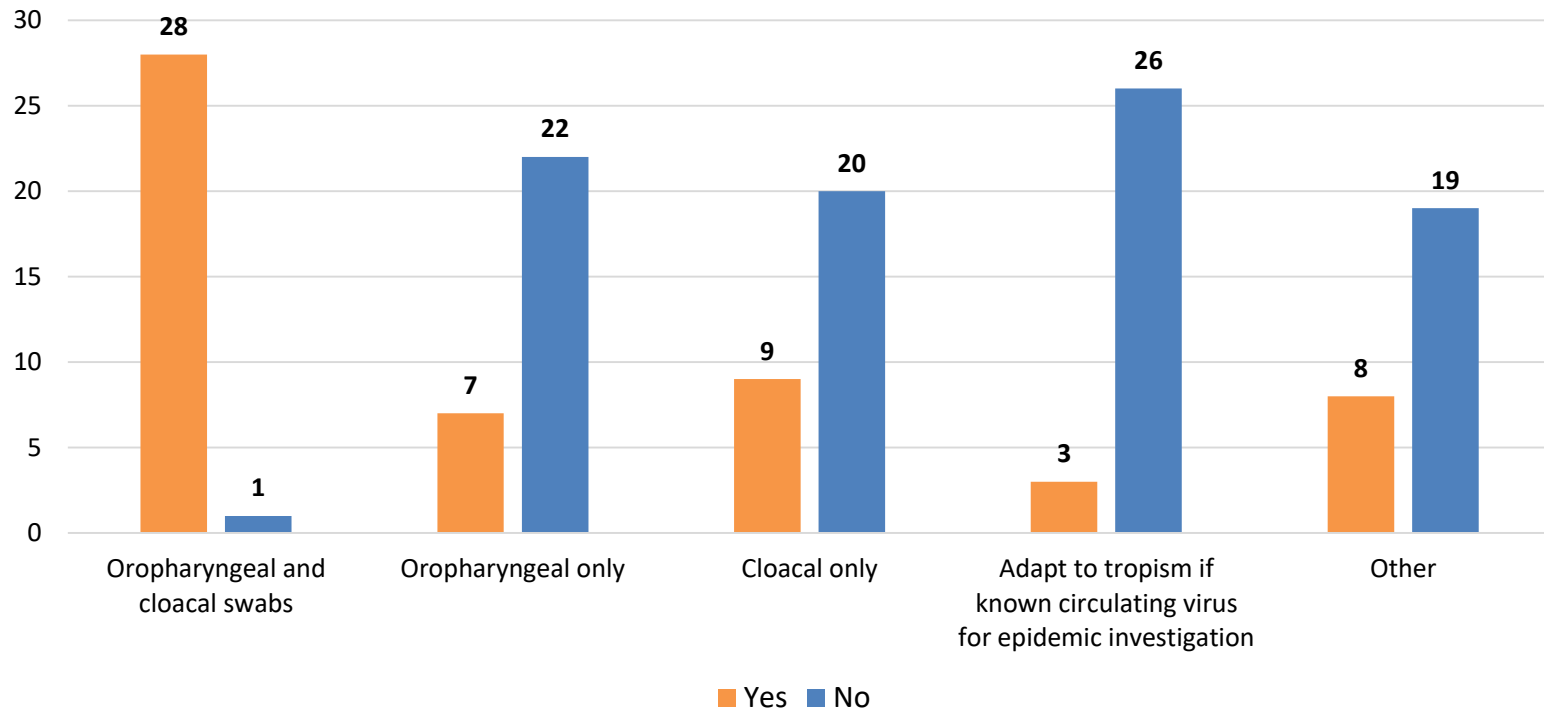


■ Yes
■ No
■ Sometimes

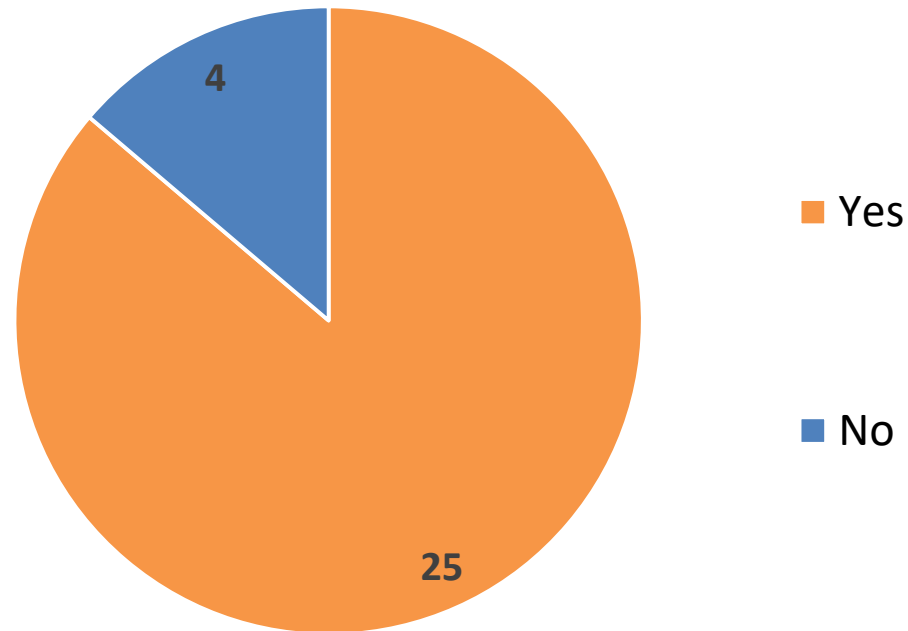
AI 1.6 Do you use Next Generation Sequencing for influenza type A detection and/or characterization? If yes, please indicate used platform.



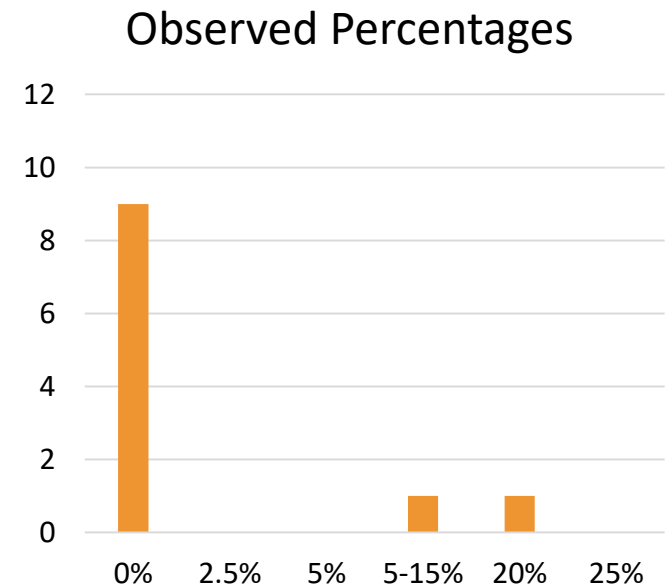
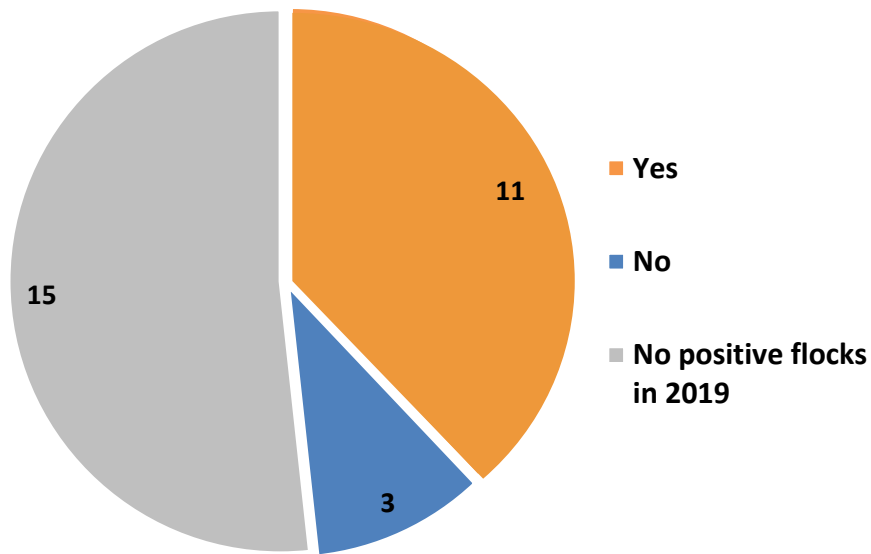
AI 1.7. Which type of swabs are generally submitted to the lab and tested?



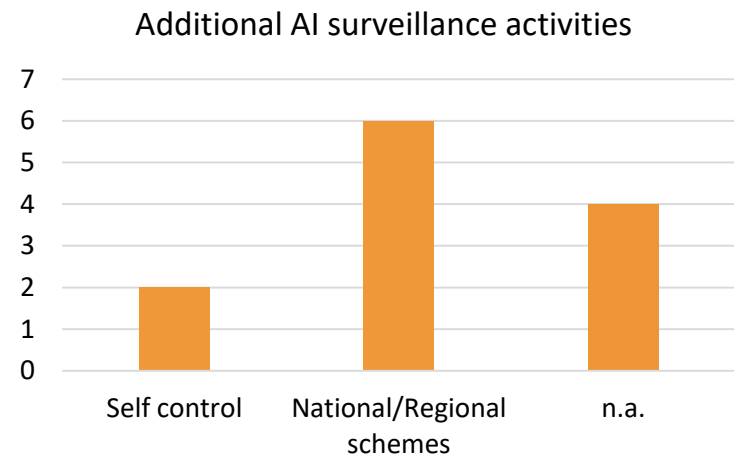
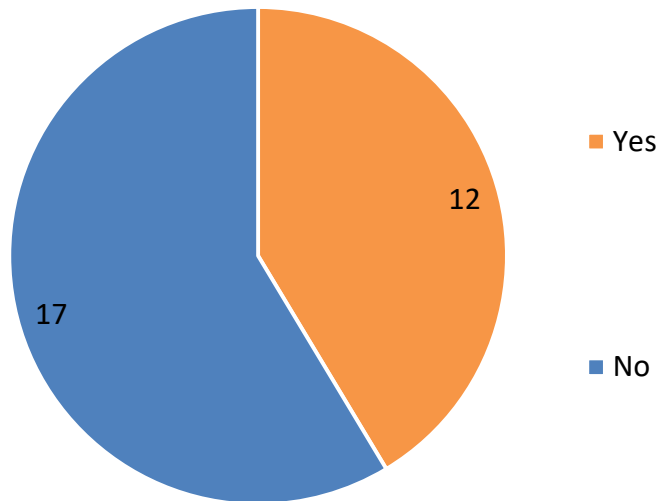
AI 2.1 Were laboratory investigations performed in response to the detection of sero-positive flocks for H5 or H7 under formal EU surveillance programmes? Yes/No. Please feel free to provide details



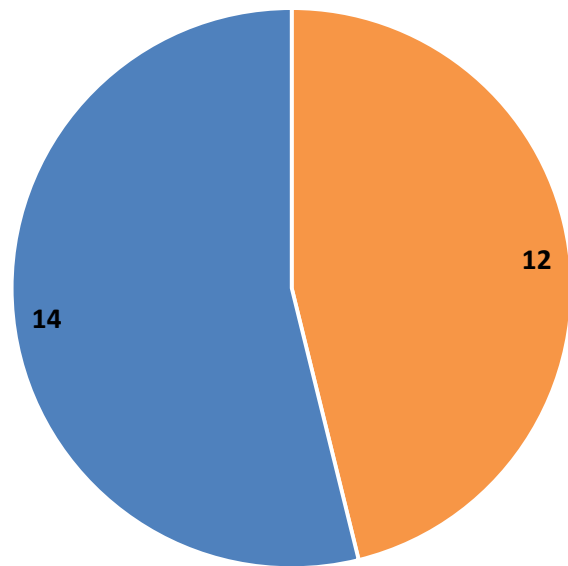
AI 2.3. Do you know the approximate percentage of positive results obtained by PCR or virus isolation after collection of samples in response to sero-positive flocks for H5 or H7?



AI 2.2. Was any other active surveillance action performed in poultry (e.g. regional surveillance activities in DPPA or monitoring after and AI outbreak) in addition to formal EU programmes?



AI 2.4. Do you conduct any diagnostic tests alternative to serological assays when implementing mandatory surveillance activities for AI?



■ Yes

■ No

Alternative tests	Number
M-gene RRT-PCR	4
M-gene RRT-PCR on duck samples	2
M-gene PCR on backyard poultry	1
AGID tests and M-gene PCR	1
HI with H5N8 2.3.4.4	1
H9 HI test	1
Luminex multiplex serological assay	1

Avian Influenza virus-positive samples in 2019 per MS

Country	RT-PCR positive samples
Austria	1
Belgium	468
Bulgaria	51
Croatia	2
Denmark	75
Estonia	5
Finland	1
France	31
Germany	108
Ireland	1
Italy	30
The Netherlands	22
Norway	34
Poland	6
Slovenia	3
Spain	13
United Kingdom	87
Total	938

1163 in 2018 (19.4% reduction)

HPAI H5 viruses isolated/detected in 2019

MS(s)	Bird species	Subtype	Amino Acids at the HA0 cleavage site	Availability of virus isolate
Bulgaria	Mule ducks	H5N8	PLREKRRKRGLF	Yes
Bulgaria	Chicken (hens)	H5N8	PLREKRRKRGLF	Yes
Poland	Turkey	H5N8*	PLREKRRKRGLF	Yes
Denmark	Common buzzard	H5N6	PLREKRRKRGLF	No

*2019/2020 strain



● Summary - HPAI situation in 2019

- 1 MSs reported isolation/detection of H5N6 (compared to 7 MS in 2018)
- 2 MSs reported isolation/detection of H5N8 (same as 2018)
- No other HPAI subtypes detected
- Cleavage site was the same for all the HPAI isolates sequenced in 2019: PLREKRRKR/GLF (Of flu document still actual)

H5 LPAI viruses isolated/detected in 2019

LPAI Subtype	Number of detection(s)	MS(s)
H5N*	17	
Mallard	8	Denmark (1), Germany (6), Norway (1)
Eurasian teal	1	Denmark (1)
Eurasian wigeon	1	Denmark (1)
Northern shoveler	1	Denmark (1)
Great sandpiper	1	The Netherlands (1)
Wild duck	5	Germany (4), Italy (1)
H5N1	3	
Chicken	1	Denmark (1)
Mallard (domestic)	1	Denmark (1)
Goose	1	Germany (1)
H5N2	4	
Mallard	4	UK
H5N3	17	
Mallard (domestic)	1	France (1)
Mallard	1	UK (1)
Chicken	15	UK (15)
H5N6	1	
Mallard	1	Belgium
Total	42	

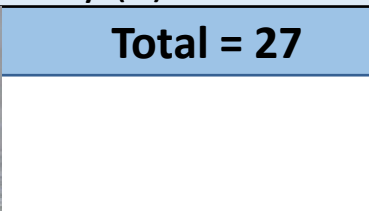
H7 LPAI viruses isolated/detected in 2019

LPAI Subtype	Number of detection(s)	MS(s)
H7	1	
Teal	1	Italy (1)
H7N3	3	
Chicken	1	Italy (1)
Mallard	2	Belgium (2)
H7N7	1	
Captive Mallard	1	Denmark (1)
Total = 5		

Summary of wild bird species with LPAI H5/H7 - RT-PCR positive results

Species	MS(s)	Subtype	Number of RT-PCR positive samples
Barnacle Goose	Germany	H5N1	1
Eurasian Teal	Denmark (1)	H5N*	3
	Italy (2)	H7N*(2)	
Great sandpiper	The Netherlands	H5N*	1
<i>Anas sp.</i>	Germany (4)	H5N*(4)	5
	Italy (1)	H5N*(1)	
Eurasian wigeon	Denmark	H5N*	1
Northern shoveler	Denmark	H5N*	1
Mallard	Belgium (3)	H5N6 (1), H7N3 (2)	16
	Denmark (1)	H5N*	
	Norway (1)	H5N*	
	UK (5)	H5N2 (4), H5N3(1)	
	Germany (6)	H5N*(6)	

Total = 27

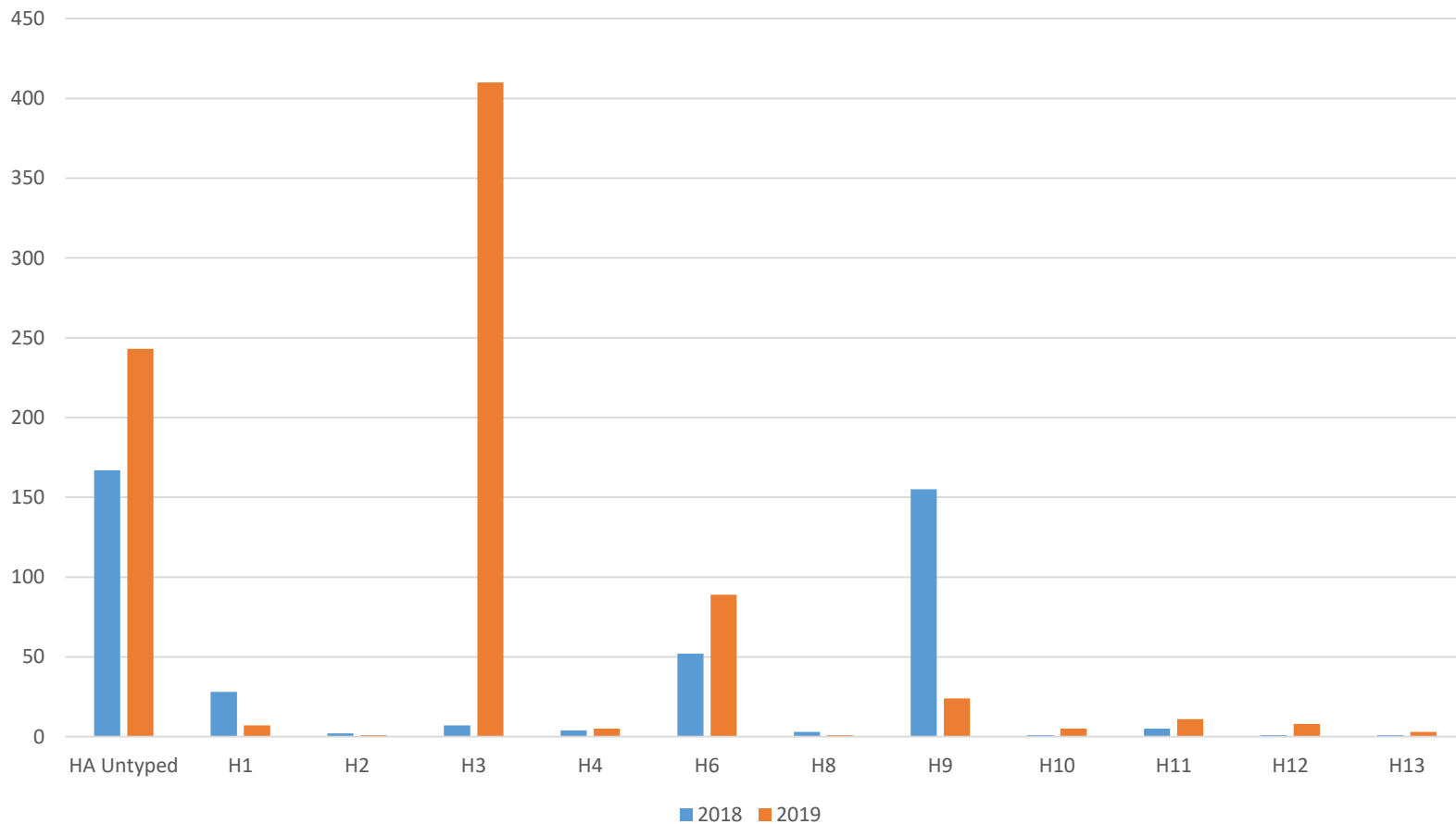


● Non H5-H7 LPAI viruses isolated/detected in 2019

LPAI Subtype	Number of detection(s)	LPAI Subtype	Number of detection(s)
H*N*	242	H6N2	15
H*N1	1	H6N5	56
H*N2	2	H6N8	1
H*N5	1	H8N4	1
H*N6	8	H9N*	11
H1N*	3	H9N2	12
H1N1	2	H9N6	1
H1N6	2	H10N7	5
H2N*	1	H11N*	5
H3N*	12	H11N2	2
H3N1	392	H11N9	3
H3N8	5	H12N*	7
H3N9	1	H12N5	1
H4N2	2	H13N2	1
H6N*	16	H13N6	1
H6N1	1	H13N8	1

Total= 814

● Non H5-H7 LPAI viruses isolated/detected in 2018/19



Wild Bird species with **NON-H5/H7** - RT-PCR positive results

Species	Number of RT-PCR positive samples
Wild Bird (Unspecified)	79
Mallard	49
Eurasian widgeon	17
Eurasian teal	16
Wild duck	11
Swan	6
Pigeon	4
European herring gull	3
Ruddy turnstone	2
Sparrowhawk	2
Barnacle Goose	1
Black-headed gull	1
Great black-backed gull	1
Mandarin duck	1
Merlin	1
Northern shoveler	1
Total	195

117% increase from 2018

Wild Bird species with **NON-H5/H7** - RT-PCR positive results

Species	Number of RT-PCR positive samples
Wild Bird (Unspecified)	79
Mallard	49
Eurasian widgeon	17
Eurasian teal	16
Wild duck	11
Swan	6
Pigeon	4
European herring gull	3
Ruddy turnstone	2
Sparrowhawk	2
Barnacle Goose	1
Black-headed gull	1
Great black-backed gull	1
Mandarin duck	1
Merlin	1
Northern shoveler	1
Total	195

46% of wild birds not identified as species!