Surveillance for Avian Influenza in the European Union in 2016

EU Reference Laboratory for Avian Influenza, APHA-Weybridge, UK
Overview

• 2016 surveillance programme in
  • Poultry
  • Wild birds

• Additional epidemiological analyses at the EURL
Annual Report

on surveillance for avian influenza in poultry and in wild birds in Member States of the European Union in 2014

Animal & Plant Health Agency
Surveillance for AI in Poultry in EU

• Objectives
  – Inform the competent authority of circulating avian influenza virus with a view to controlling the disease
  – Primarily serological surveillance for detection of evidence of exposure to AI of subtypes H5 and H7
  – Complement early detection systems (scanning/passive surveillance)
Poultry 2016 – Results

- 18,138 poultry holdings sampled by 28 MS (in 2015 21,867)
- Number of holdings sampled varied by MS from 8 – 3,708
Poultry 2016 – Results

Number of poultry holdings sampled in 2015 and 2016
2016 Poultry - Results

Intensity of Surveillance 2016

- Low
- Medium
- High
- Very High

Non-EU Countries
No Submissions

H5 Positives
1, 2, 4-8, 63

H7 Positives
1, 3

Map of Europe showing the distribution of H5 and H7 positive cases across different intensity levels of surveillance.
124 (33) H5 seropositive holdings:

- Breeder Ducks: 74 (6) in CZ, FR and UK
- Breeder Geese: 18* (13) in CZ, DE, FR and PL
- Farmed Game birds (waterfowl): 10* (0) in CZ, DK and ES
- Fattening Ducks: 9 (7) in BE, DE and FR
- Fattening Geese: 6 (1) in DE, ES and UK
- Free-range Laying Hens: 3** (1) in NL and DK
- Others: 3 (4) in DE, ES and IT
- Conventional Laying Hens: 2** (0) in DE and NL
- Fattening Turkeys: 1 (0) in DE
- Backyard Flocks: 0 (1)

*One holding seropositive in both the Breeder Geese and Farmed Game Birds (waterfowl) category

**One holding seropositive in both the Free-range Laying Hen and Conventional Laying Hen category
## Poultry 2016 – Results

### Epidemiological follow up investigations following an H5 seropositive result

<table>
<thead>
<tr>
<th>H5 seropositive poultry holdings</th>
<th>Number of poultry holdings</th>
<th>% of total number of H5 seropositive poultry holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following H5 seropositive result, epidemiological follow-up visit 'Done'</td>
<td>119</td>
<td>96.0</td>
</tr>
<tr>
<td>Done: H5 detected by virological testing</td>
<td>7</td>
<td>5.6</td>
</tr>
<tr>
<td>Done: No detection by virological testing</td>
<td>112</td>
<td>90.3</td>
</tr>
<tr>
<td>Following H5 seropositive result, epidemiological follow-up visit 'Not done'</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>Not done: Sampling at slaughter</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Not done: Birds slaughtered/killed</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total number of H5 seropositive poultry holdings (by MS)</strong></td>
<td><strong>124</strong></td>
<td></td>
</tr>
</tbody>
</table>
Poultry 2016 – Results (2015 blue)

10 (7) H7 seropositive holdings:

• Farmed Game Birds (waterfowl): 4 (1) in DK and ES
• Free-range Laying Hens: 4 (3) in DK and NL
• Conventional Laying Hens: 1 (0) in DE
• Others: 1 (0) in IT
• Backyard Flocks: 0 (1)
• Breeder Geese: 0 (2)
# Poultry 2016 – Results

## Epidemiological follow up investigations following a H7 seropositive result

<table>
<thead>
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<tbody>
<tr>
<td>Following H7 seropositive result, epidemiological follow-up visit</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>'Done'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Done: H7 detected by virological testing</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Done: No detection by virological testing</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>Following H7 seropositive result, epidemiological follow-up visit</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>'Not done'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of H7 seropositive poultry holdings (by MS)</td>
<td>10</td>
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Poultry 2016 – Results

Summary

• Number of H5 seropositive holdings (124) was higher than 2015 (33), and higher than the 5 year average (44, 2011-2015).
• High proportion of detections in Ducks and Geese as in previous years.
• 119 H5 seropositive holdings underwent follow up testing and 7 were H5 virus positive.

• Number of H7 seropositive holdings (10) was similar to 2014 (7)
• Detections in Farmed Game Birds (waterfowl), Free-range Laying Hens, Conventional Laying Hens and Others.
• All 10 H7 seropositive holdings underwent follow up testing and 3 were H7 virus positive.

• Surveillance effective in detection of H5 and H7 virus exposure and infection where clinical indicators may not trigger detection by other methods.
Passive surveillance for AI in **wild birds** in EU 2016

Objectives *(2010/367/EU)*

Timely detection of HPAI of the subtype H5N1 in wild birds in order to protect poultry and safeguard veterinary public health.

a) Risk based passive surveillance  
b) Target species to be prioritised  
c) Areas close to water bodies and high density poultry holding areas targeted  
d) Epidemiologists, ornithologists and conservationists to be consulted  
e) Enhanced surveillance to be implemented if the epidemiological situation requires.
Passive surveillance for AI in wild birds in EU 2016

~83% more submissions in 2016 than in 2015
87% more than 5 year average (2011-2015)
Germany accounted for 47% of the total sampling effort in 2016. Germany submitted ~ 3.5 times more samples than in 2016.
Intensity of sampling by **PASSIVE** surveillance (birds found dead, injured or live with clinical signs) in EU MS in 2016
Passive surveillance for AI in wild birds in EU 2016

12,381 Birds sampled in 2016 - belonging to 22 Orders and 269 species

<table>
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<tr>
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<td>1045</td>
<td>622</td>
<td>518</td>
</tr>
<tr>
<td>Galliformes</td>
<td>513</td>
<td>442</td>
<td>200</td>
</tr>
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</table>
Proportion of birds sampled by passive surveillance that were Target Species

Under half of the birds sampled (47.6%) were identified as Target Species
Passive surveillance for AI in **wild birds** in EU 2016

The most frequently sampled species

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<th>Species</th>
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<tr>
<td><em>Anas platyrhynchos</em></td>
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<td><em>Aythya fuligula</em></td>
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Passive surveillance for AI in *wild birds* in EU 2016

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<tr>
<td><em>Anas crecca</em></td>
<td>347</td>
<td>74</td>
<td>32</td>
</tr>
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Detections of Avian Influenza by **PASSIVE** surveillance (birds found dead, injured or live with clinical signs) in EU MS in 2016
Wild bird passive surveillance detections

Detections of HPAI

Number of bird sampled by passive surveillance

Detections of LPAI H5 and H7

Number of bird sampled by passive surveillance

Animal & Plant Health Agency
Wild bird passive surveillance summary

- **HPAI H5N8 (2.3.4.4)** detected in 801 birds
  - 14 Member States and Switzerland
  - 57 species from 12 Orders
  - All detections made Oct-Dec

- **HPAI H5N5** detected in 5 birds
  - 4 Member States
  - 3 species from the Order Anseriformes
  - All detections in December

- **HPAI H5 (unknown N type)** detected in 37 birds
  - Germany (24), Sweden (12) and Austria (1)
  - 23 species from six Orders
  - All detections Nov-Dec

- Winter 2017/18??
Detections of Avian Influenza by **ACTIVE** surveillance (hunted birds and live without clinical signs) in EU MS in 2016
Wild bird active surveillance detections
Wild bird active surveillance summary

- **HPAI H5N8 detected in 25 birds**
  - Austria (2), Germany (20) and Finland (3)
  - 9 species from five Orders
  - All detections made Nov-Dec

- **HPAI H5 (unknown N type) detected in 7 birds**
  - Germany (3) and Sweden (4)
  - 7 species from 4 Orders
  - All detections made Nov-Dec

- **LPAI H5 detected in 16 birds**
  - Belgium (9) and Germany (7)
  - Four species from the Order Anseriformes
  - All detections made Sept-Dec

- **LPAI H7 detected in 9 birds**
  - Belgium (5), Germany (2) and Slovakia (2)
  - All Mallards (*Anas platyrhynchos*)
  - All detections made Dec-Jan
Additional epidemiological analyses:

- H5N8 Epidemic situation update (data to 30th Sept 2017)

Virus has continued to circulate in poultry and wild birds throughout the summer of 2017.
Additional epidemiological analyses:

- H5N8 Epidemic situation update (data to 30\textsuperscript{th} Sept 2017)

Detections of H5N8 HPAI in poultry and captive birds June to Sept 2017

Poultry and captive bird outbreaks have been detected in two spatial clusters over the summer period:

- Belgium, France and Luxembourg
- Northern Italy
Additional epidemiological analyses:

- H5N8 Epidemic situation update (data to 30\textsuperscript{th} Sept 2017)

Detections of H5N8 HPAI in wild birds May-Sept 2017
Additional epidemiological analyses:

- H5N8 Epidemic situation update (data to 30\textsuperscript{th} Sept 2017)

Maximum likelihood phylogenetic tree of the HA gene from the H5 HPAI epizootic in Europe
Acknowledgements

• Support and contribution from all participating National Reference Laboratories and competent veterinary authorities in Member States
Thank you for your attention