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HPAI outbreak responses: An integrated One Health approach

Iraq/Middle east

Dr. Thaer Sabri Hussein

Director of Epidemiology section

17 – 19 December 2024

Amman, Hashemite Kingdom of Jordan

Co-funded by the European Union

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Member's profile

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- A brief description of:
  - Susceptible population: Domestic Poultry, Wild Birds, Humans
  - Risk for introducing avian diseases, such as Highly Pathogenic Avian Influenza (HPAI), into a country or territory can be influenced by several factors:(Wild Birds, Poultry Trade and Biosecurity Measures)


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Avian disease situations

- Host species: March 2016 Layer(Poultry)
- Type of samples: brain, trachea, lung ,spleen, intestine, dead and infected poultry
- Subtype:H5N1
- Sequence information: Cleavage PQREKRRKRGLF i.e. (HPAI)
- Antigenicity: H5N1 clade 2.3.2.1.c viruses
- Subtype:Poultry Feb 2018 H5N8
- Sequence information: Cleavage PLREKRRKGLF i.e. (HPAI)
- Antigenicity: H5N8 clade 2.3.4.4 viruses

- Host species: May 2024 Bird (Wild)the gulls(non poultry)
- Type of samples: brain, trachea, lung ,spleen, intestine, dead and infected Gulls
- Subtype:H5N1

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Outbreak in Iraq

Date	City	Animal	Outbreak	Susceptible Cases	Death	Killed
Feb.2006 (H5N1)	Salumaniya + Maysan	Bird (Domastic)	3	4130	652	3478
Jan-july.2016 (H5N1)	Baghdad + Wasit	Bird (Domastic)	7+4	1,365,500	17815	1.349,900
Jan- Jun 2018(H5N8)	Babylon-Diyala- Baghdad	Bird (Domastic)	16	793,996	386,840	407,156
March2019 (H5N8)	Basrah	Bird (Domastic)	1	5000	2000	3000
May2020 (H5N8)	Ninawa	Bird (Domastic)	1	59700	21700	38000
Jan-April-May-Jun2021(H5N8)	Salah Aldeen+Basrah+Wasit	Bird (Domastic)	6	345,400	208,200	80,100
May 2024 (H1N5)	Salumaniya +Anbar	Bird (Wild)	3+3	77	58	-

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Results of reference laboratory (Weybridge)

15th April 2016

Animal & Plant Health Agency

OIE, FAO and EU Reference Laboratory for Avian Influenza and Newcastle Disease

APHA (Weybridge), New Haw, Addlestone, Surrey, KT15 3NB, United Kingdom.
Telephone: +44 (0)1932 341111 Facsimile: +44 (0)1932 357856 Website: http://www.defra.gov.uk/apha
Email Address: AIWRL@apha.gsi.gov.uk

Dr Basem AL-Adhadh
Central Veterinary Laboratory
Sheikh Omar St.
Baghdad
IRAQ

15th April 2016

Report 2 (Final)

Our Ref: AV000256-16
Sample Date Receipt: 15th March 2016

Your Ref:

Species	Sample Type	Sample
Layers	RNA	1
Layers	RNA	2
Backyard	RNA	3
Broiler	RNA	4
Broiler	RNA	5
Layers	RNA	6
Layers	RNA	7
Layers	RNA	8

Dear Dr Basem,

Molecular sequencing has been completed on the samples. Samples 1, 2, 3, 6, 7 and 8 have a cleavage site motif of PQRERRRKRGLF, whilst samples 4 and 5 have a cleavage site motif of PQREKRRKRGLF. All indicate HPAI H5 was obtained.
To provide more precise analysis we require material to isolate virus.

Best Regards

S. Essen

Steve Essen
Authorised Responsible Officer
15th April 2016
cc: EU Commission, OIE, FAO (EMPRES/LAB)

† - Test not UKAS accredited; opinion on or interpretation of result is outside the scope of UKAS accreditation.

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5th Feb. 2018

Animal & Plant Health Agency

OIE, FAO and EU Reference Laboratory for Avian Influenza and Newcastle Disease

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Telephone: +44 (0)1932 341111 Facsimile: +44 (0)1932 357856 Website: http://www.defra.gov.uk/apha
Email Address: AIWRL@apha.gsi.gov.uk

Dr Basem Adhadh
Central Veterinary Laboratory Baghdad
Sheikh Omar Street
Baghdad
IRAQ

5th February 2018

Report 2 (Final)

Our Ref: AV000059-18
Sample Date Receipt: 11th January 2018

Dear Dr AL-Adhadh ,

Molecular cleavage site sequencing has been completed on samples 1 and 2. Both have a cleavage site motif of **PLREKRRKRGLF** i.e. **HPAI**. This is the cleavage site seen with recent H5N8 and H5N6 clade 2.3.4.4 outbreaks in Europe.
Phylogenetically these 2 samples group most closely with the HA from recent H5N8 viruses such as A/herring gull/Poland/84/20116 (99.2%), and A/wild duck/Germany/BW_R8455/2016 (99.2%).

Best Regards

S. Esse

Steve Essen
Authorised Responsible Officer
5th February 2018
cc: EU Commission, OIE, FAO (EMPRES/LAB)

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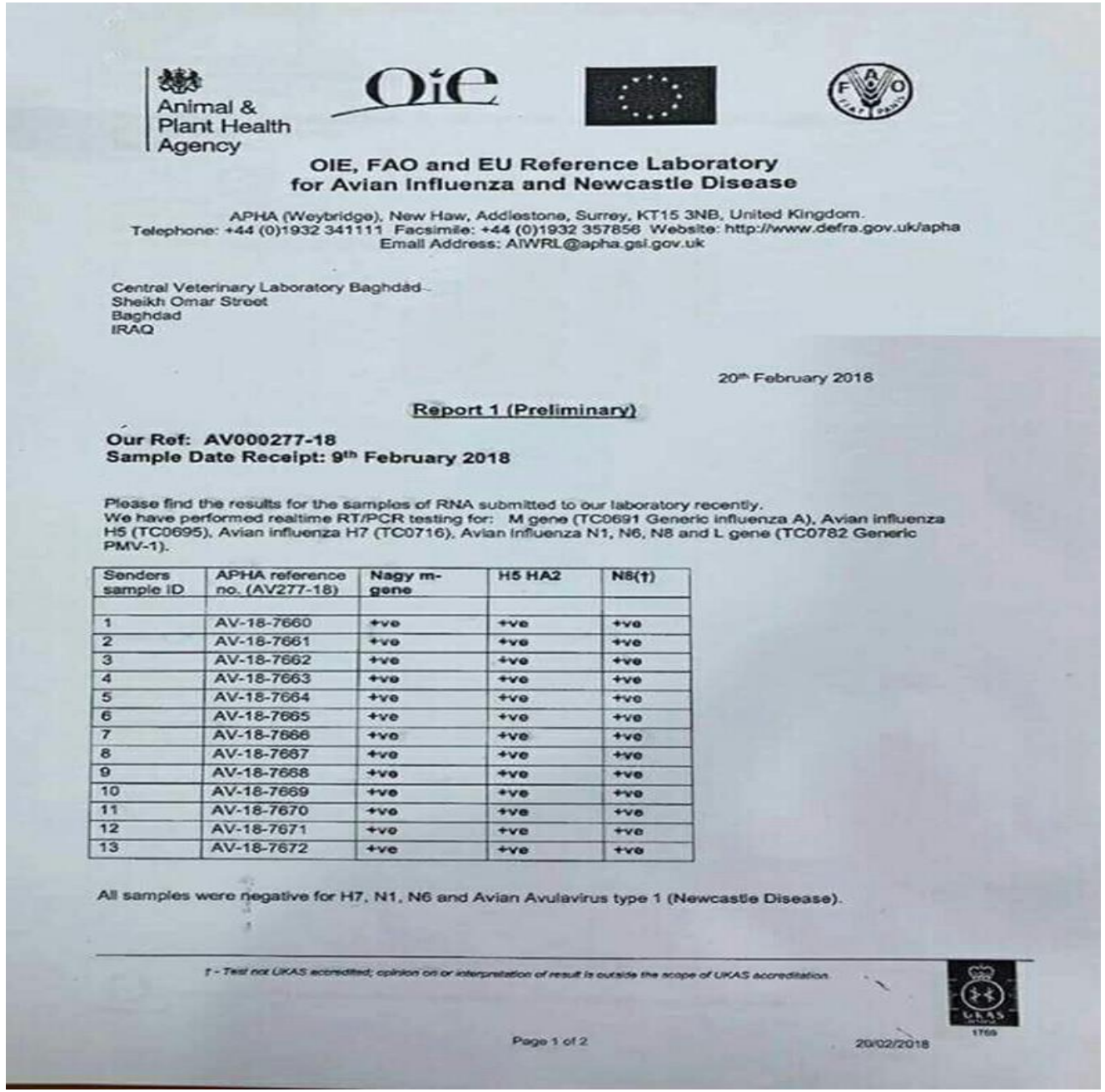
Results of reference laboratory (Weybridge) 20th Feb. 2018



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Email Address: AIWRL@apha.gsi.gov.uk

Central Veterinary Laboratory Baghdad
Sheikh Omar Street
Baghdad
IRAQ

20th February 2018

Report 1 (Preliminary)

Our Ref: AV000277-18
Sample Date Receipt: 9th February 2018

Please find the results for the samples of RNA submitted to our laboratory recently.
We have performed realtime RT/PCR testing for: M gene (TC0691 Generic influenza A), Avian influenza H5 (TC0695), Avian influenza H7 (TC0716), Avian influenza N1, N6, N8 and L gene (TC0782 Generic PMV-1).

Senders sample ID	APHA reference no. (AV277-18)	Nagy m-gene	H5 HA2	N8(†)
1	AV-18-7660	+ve	+ve	+ve
2	AV-18-7661	+ve	+ve	+ve
3	AV-18-7662	+ve	+ve	+ve
4	AV-18-7663	+ve	+ve	+ve
5	AV-18-7664	+ve	+ve	+ve
6	AV-18-7665	+ve	+ve	+ve
7	AV-18-7666	+ve	+ve	+ve
8	AV-18-7667	+ve	+ve	+ve
9	AV-18-7668	+ve	+ve	+ve
10	AV-18-7669	+ve	+ve	+ve
11	AV-18-7670	+ve	+ve	+ve
12	AV-18-7671	+ve	+ve	+ve
13	AV-18-7672	+ve	+ve	+ve

All samples were negative for H7, N1, N6 and Avian Avulavirus type 1 (Newcastle Disease).

† - Test not UKAS accredited; opinion on or interpretation of result is outside the scope of UKAS accreditation

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Outbreak in Iraq

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Response measures to HPAI outbreak

1. Addressing the administrative authority in the governorate for the purpose of activating Article 16 of Animal Health Law No. 32 of 2013 in the governorates in which cases of the disease are recorded.
2. Raising the maximum levels of monitoring and epidemiological investigation in poultry farms, home breeding, and markets selling chickens and other birds by means of rapid testing kits for Avian influenza and immediate reporting of any suspected case. Eliminating of source of pathogenic agent e.g., killing of infected and suspected cases.
3. Preventing the movement of poultry to and from the disease focus to other areas and cities within a radius of 3 km from the disease focus as a containment area.
4. Implementing biosecurity and biosafety measures in poultry farms. Investigation teams should not move from the infected area to other areas, while committing to wearing personal protective equipment and avoiding entering the fields. It is possible to use field workers to bring poultry randomly for the purpose of examining them or sending samples to the central veterinary laboratory.

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Response measures to HPAI outbreak

5.Vaccination, commercial Vaccine authorize and recorded in Veterinary Directorate.

6.Conducting awareness seminars for poultry farmers to raise awareness of the seriousness of the disease and to emphasize the implementation of biosafety and biosecurity measures.

7.Responding to the costs of measures by forming a committee called the Compensation Committee in the governorate.

8.Compensating for poultry project owners for the losses they incurred as a result of the measures according to Chapter Eight of the Animal Health Law No. 32 of 2013 and the costs are borne by the government according to the same law, the Compensation Chapter

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Response measures to avian influenza outbreak - surveillance

- Plan for disease surveillance post-outbreak:
  - Control and containment measures for avian influenza outbreak, according to the national control plan .
  - Monitoring the current focus of the disease through the mortality rate in the herd and submitting a daily report on the mortality for a period of 10 days.
  - Sending disease samples for laboratory examination from the infected herd
  - Continuous investigation in the control areas (10) km around the disease focus, as well as around governorates.
  - Type of surveillance (active)rapid test, RT-PCR
  - Target species(Domestic/Poultry) (Wild/non poultry)
  - Number of collected samples (Tens samples according focus of the disease)
  - Viruses detected (H5N1,H5N8)

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Reference: WOAH Terrestrial Code Chapter 4.19, Article 4.19.1.

National prevention and control for avian diseases (1)

Measures	Y/N	Description
1. Programme to control or eradicate disease	Y	Law No. 32 Y2013 /Veterinary Legislations.
2. Veterinary legislation	Y	Early warning/rapid response/compensation
3. Emergency preparedness and response plans	Y	TESTING/ BIOSAFETY AND BIOSECURITY/ LABORATORY INVESTIGATION / COLLABORATION WITH MULTISPECTRAL.
4. Disease surveillance	Y	Inspection (active surveillance)rapid test, RT-PCR
5. Disease reporting	Y	Immediate (daily) / weekly /monthly (report)

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Reference: WOAH Terrestrial Code Chapter 4.19, Article 4.19.1.

National prevention and control for avian diseases (1)

Measures	Y/N	Description
6. Detection and management of cases	Y	Rapid test, monitoring, investigation, lab. tests
7. Measures to prevent introduction or spread of disease	Y	Zoning, restriction of movement , stamping out
8. Vaccination	Y	Reassortant Avian Influenza (H5N1)
9. Measures to protect public health	Y	Awareness of farmer and citizens and notification report of disease to Ministry of Health
10. Communication and collaboration among all competent authorities	Y	Communications by phone (WhatsApp) and official letters

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Laboratory capacity

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- **A brief description of laboratory capacity for avian diseases**

  - **Disease covered: serological and molecular tests.**

  - **Type of diagnostic test: Real-time PCR, ELISA,HI.**

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Challenges and solutions in implementing national plan

Challenges	Solutions
A brief description of challenges in implementation of national action plan	A brief description of how your country overcome the challenges
illegal poultry movement	activated of laws
Wild bird immigration	Migratory birds dimensions from poultry farms in various ways
Biosafety and biosecurity	Emphasis on following Biosafety and biosecurity procedures
Awareness of farmer	Educating and holding awareness seminars
Delayed of compensations	Reduce administrative routine in compensation
Lacks of staffs and developments capacities	Recruitment and development courses

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Thank you
Thank you

Dr. Thaer Sabri Hussein

Director of Epidemiology section

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