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وزارة الشؤون البلدية والزراعة
Ministry of Municipalities Affairs
and Agriculture



HPAI outbreak responses: An integrated One Health approach Kingdom of Bahrain

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17 – 19 December 2024

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Co-funded by
the European Union

The **susceptible population** refers to the poultry stocks (chickens, turkeys, ducks, etc.) that are vulnerable to infection by avian diseases. Factors that contribute to their susceptibility include:

- **Commercial Poultry Farms:** Bahrain has a well-established poultry industry with both small- and large-scale commercial farms producing eggs and meat.
- **Backyard Poultry:** In addition to commercial farms, there is a significant presence of small-scale, backyard poultry farms. These birds may have lower levels of biosecurity and are more susceptible to diseases, as they are in closer contact with wild birds and the environment.
- **Hatcheries and Breeding Farms:** Poultry hatcheries and breeding farms, where young birds are raised before being sent to commercial farms, can also be sources of disease spread. If these facilities do not adhere to strict health protocols, they can facilitate the introduction of diseases to other poultry populations.

Risk Factors for Introduction of Avian Diseases into Bahrain's Poultry Sector

1 Trade and Importation

- **Imports of Poultry Products:** Bahrain imports significant quantities of poultry meat, eggs, and day-old chicks from other countries.
- **Live Bird Imports:** Bahrain may import live poultry from neighboring countries or international markets.

2 Wildlife Interaction

- **Migratory Birds:** Bahrain, being located on a migratory bird route, is at risk of avian diseases being introduced by wild birds, especially during the migration seasons.
- **Environmental Factors:** Water bodies and wetlands in Bahrain can serve as habitats for wild birds, increasing the likelihood of contact between wild birds and domestic poultry, thus posing a risk for cross-species transmission of diseases.

Avian disease situations in poultry, non-poultry, including wild birds and mammals

	Poultry	Non-Poultry Birds & Wild Birds
Avian Influenza (HPAIV)	No outbreaks of HPAIV have been reported	Migratory wild birds passing through Bahrain can carry avian influenza, though the risk to domestic flocks is managed through surveillance and biosecurity measures, but no cases have been detected.
Newcastle Disease	A significant concern in Bahrain's poultry sector, Vaccination programs are enforced to control outbreaks.	Wild birds can carry the virus, though their role in spreading the disease to domestic birds is less frequent.
Salmonella	Strict monitoring and hygienic measures are implemented to prevent contamination in eggs and meat.	Wild birds can carry Salmonella bacteria, but the transmission to poultry is minimized through biosecurity protocols.
Avian Paramyxovirus and other Respiratory Diseases	Respiratory diseases such as avian paramyxovirus are monitored regularly, with vaccination and surveillance programs to prevent outbreaks.	may be asymptomatic carriers, posing a risk to local avian populations and domestic poultry.



Response measures to avian disease outbreak

Early Detection and Surveillance

Regular Monitoring

Surveillance in both commercial poultry farms and wild bird populations helps detect any early signs of disease.

Quarantine and Isolation

Affected Farms

Infected poultry farms or premises are immediately quarantined to prevent the spread of the disease to neighboring farms.

Culling and Disposal

Culling Infected Birds

In cases of highly contagious diseases like avian influenza or Newcastle disease, the infected birds are culled to limit further transmission.

Safe Disposal

Proper disposal methods, such as incineration or deep burial

Vaccination and Preventive Measures

Vaccination Campaigns

Poultry in affected areas are often vaccinated against.

Strengthening Biosecurity



National prevention and control for avian diseases (1)

Measures	Y/N	Description
1. Programme to control or eradicate disease	Y	Surveillance and Monitoring, Vaccination, Biosecurity, Culling and Disposal, Public Awareness and Education and Collaboration with International Bodies
2. Veterinary legislation	Y	The veterinary legislation in Bahrain is regularly updated to respond to emerging diseases and international health requirements, ensuring effective control of animal diseases and protection of public health.
3. Emergency preparedness and response plans	Y	Bahrain's emergency preparedness and response plans for avian diseases are dynamic, regularly updated, and involve a collaborative approach between local authorities, the veterinary community, and international organizations to ensure a rapid and effective response to any potential outbreaks.
4. Disease surveillance	Y	
5. Disease reporting	Y	
6. Detection and management of cases		
7. Measures to prevent introduction or spread of disease	Y	
8. Vaccination	Y	



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Laboratory capacity

- Bahrain has established a robust laboratory infrastructure to support the detection, diagnosis, and monitoring of avian diseases:
- Veterinary Diagnostic Laboratories:** veterinary laboratories are equipped with advanced diagnostic tools and technologies for the rapid identification of avian diseases such as avian influenza, Newcastle disease, Salmonella, and other poultry-related pathogens. The laboratories are staffed by trained veterinarians and laboratory technicians with expertise in molecular diagnostics, serology, and microbiology.
- Collaboration with International Bodies:** Bahrain's veterinary laboratories are linked with regional and international organizations, such as the World Organisation for Animal Health (WOAH), for guidance, sharing data, and ensuring that diagnostic standards meet international requirements.





Challenges and solutions in implementing national plan

Challenges	Solutions
Limited Resources and Infrastructure	Secure additional funding through government support, international aid, or public-private partnerships.
Biosecurity and Farm Management	Provide education and training on biosecurity measures to farmers, especially those in high-risk areas.
Disease Transmission from Wild Birds	Monitor migratory bird populations closely and establish early warning systems to track potential risks.



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Thank you



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