Bird menace

Ishan Kukreti
Correspondent,
Down to Earth
Avian Influenza Progression in India

- **Rajasthan** was the first state to confirm avian influenza in a five dead crows in Jhalawar on **December 29**. The mortality took place on December 25. In the first week of 2021, many states confirmed avian influenza –
  - **Kerala** (January 4 confirmation, incident reported 21/22 December),
  - **Himachal Pradesh** (January 4 confirmation, December 28 incident reported)
  - **Haryana** (January 7 confirmation, incidents reported since December 5),
  - **Uttar Pradesh** (January 9 confirmation, incident reported January 5),
  - **Gujarat** (January 9 confirmation, incident reported January 3)
  - **Maharashtra** (January 10 confirmation, incident reported January 7),
  - **Madhya Pradesh** (January 12 confirmation, incident reported January 6),
  - **Delhi** (January 11 confirmation, January 7 incident reported),
  - **Uttarakhand** (Confirmation January 12)
  - **Chhattisgarh** (January 17 confirmation, January 14 date of incident)
  - **Punjab** (January 20 confirmation, January 8 date of incident)
A global outbreak

The 19 infected countries

India recorded second highest avian influenza outbreaks in 2020, just behind Germany

- Poultry: hens, geese, ducks, pheasants, turkeys, and quails
- Non-poultry: Migratory and domestic birds

00 Number of Avian influenza outbreaks and detected strains (below) in 2020

- Hungary: 06, H5N8
- Romania: 01, H5N8
- Bulgaria: 02, H5N8
- South Africa: 03, Low pathogenic avian influenza virus
- Israel: 03, H5N8
- Saudi Arabia: 01, H5N8
- Iraq: 01, H5N8
- Kazakhstan: 08, H5N1, H5N6
- Vietnam: 08, H5N1, H5N6
- China: 05, H5N6, H5N8
- Taiwan: 02, H5N6
- Philippines: 02, H5N8

Source: World Organization for Animal Health
A mutating virus

- A new genetic variant of H5N8 that was first detected in Poland in December 2019.
- Since then has spread to European and Asian countries.
- A reassortment between the Eurasian and African strain.
- Affects only poultry, no human cases recorded so far.
Evolution of the Influenza Virus

Source: “Back to the Future for Influenza Preimmunity—Looking Back at Influenza Virus History to Infer the Outcome of Future Infections”, Viruses, 30 January, 2019
Economic cost

- **Humans are safe** for now, but the poultry sector will be hit.

MIGRATORY BIRDS VS POULTRY

- Migratory birds natural reservoir.
- Poultry acts as amplifier.
- Inter-country movement of poultry can create new outbreaks. Ex. From China to Tibet. West Bengal in 2008
- Poultry vulnerable -density and low genetic diversity.
Meat production and zoonotic

- Pathogens thrive on density.

- Immunity of poultry birds low

- Increased interaction between migratory birds and poultry
  - increase in poultry (no regulation on number of animals)
  - shrinking wetlands and nesting sites for migratory birds
  - spread by transportation.

- Poor surveillance:
  - Absence of passive and year round surveillance
  - The case of Haryana: It took a month to confirm H5N8.
Way forward

• Better surveillance.

• Making monitoring and surveillance an agenda for the states’ Wetland Authorities.

• Mapping hotspots.
Thank You

–Ishan Kukreti