

History of Avian Influenza in Manipur

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Introduction:

Avian influenza refers to disease in birds caused by infection with avian (bird) influenza (flu) Type A viruses. Avian influenza A viruses have been isolated from more than 100 different species of wild birds around the world (*Avian Influenza in Birds*, 2022). Influenza A viruses are part of the *Orthomyxoviridae* family. The exact mechanism of bird-to-bird transmission is not currently well known. The virus is released in large quantities from infected birds in faeces and the respiratory tract. In birds, avian influenza strains are characteristically highly pathogenic avian influenza (HPAI) and low pathogenicity avian influenza (LPAI) (Alexander, 2007). Some diseases spread, though, may be implicated in migratory birds that could carry disease to different locations where subsequent infection of domestic birds leads to human transmission (Lazarus & Lim, 2014). The outbreak of avian flu in Manipur has become a major deterrent for the growth of poultry sector. Though this flu has been reported in 70 countries across 4 continents since the present wave commenced in Hong Kong in 1997, its outbreak in the neighbouring countries like China, Pakistan, Myanmar, Bangladesh and Afghanistan is more dreadful for India. Since Manipur is bordering with Myanmar, it is highly vulnerable to the entry of avian flu into Indian territory (Kumar *et al.*, 2008). An unusual mortality in poultry was reported from Chingmeirong, Imphal East district of Manipur where 132 birds died in a period of 6 days from 7 July, 2007 onwards. The birds were housed separately. After verification, the Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Govt. of India, notified the outbreak of HPAI in Manipur to the global community through Office International des Epizooties (OIE) (World Organization of Animal Health) on 25 July, 2007.

Avian Influenza in Poultry (Domesticated Birds)

The virus of Avian Influenza is present in the saliva, nasal secretions and faeces of infected birds. Some of the symptoms associated with it can include ruffled feathers, depression, closed eyes and diarrhoea. When avian influenza A (H5) or A (H7) virus outbreaks occur in poultry, depopulation (or culling, also called “stamping out”) of infected flocks is usually carried out. In addition, surveillance of flocks that are nearby or linked to the infected flock(s) and quarantine of exposed flocks with culling if disease is detected, are the preferred control and eradication methods (*Avian Influenza in Birds*, 2022). Influenza A viruses infecting poultry can also be divided on the basis of their pathogenicity. The very virulent viruses cause highly pathogenic avian influenza (HPAI) with mortality in poultry as high as 100%. In the whole world there have been only 19 reported primary isolates of such viruses from domestic poultry since 1959. Sometimes secondary infections or environmental conditions may cause exacerbation of LPAI infections leading to more serious disease (*Avian Influenza in Poultry*, n.d.). Poultry raised in backyards as free-ranging scavengers are known to be at risk of acquiring influenza viruses (Martin, V. *et al.*, 2006)(Gilbert, M. *et al.*, 2007) (Brown, J. D. *et al.*, 2007) because of their increased contact with wild birds, other poultry and birds introduced or returning from live bird markets, and other environmental exposures.

Avian Flu in Manipur:

The significance of poultry farming transcends mere economic contributions; it resonates with socio-cultural dimensions and nutritional sustenance. Manipur's poultry sector serves as a critical avenue for income generation, employment creation, and the empowerment of local communities, especially in rural areas. Furthermore, the sector's output is pivotal in bolstering food security and addressing nutritional requirements within the state (Singh *et al.*, 2022). According to the 17th Quinquennial Livestock Census, 2003 Poultry population of Manipur state was about 29.41 lakh. It was found that 56 per cent of the total poultry of the state were desi fowls reared under backyard conditions. The Poultry sector of Manipur witnessed the growth of organized commercial farming in recent years. Some of the factors responsible for the growth of organized poultry are changing consumption behaviour and lifestyle of the people, cheap source for animal protein, increased income due to high demand and easy access to various input services in the state, etc. The quick income-generating nature of poultry compared to other livestock is another major factor contributing to its growth. The



outbreak of avian flu in Manipur has discouraged many small-scale producers to become large scale producers in the poultry sector. Even though this flu has been reported in 70 countries across 4 continents since the present wave commenced in Hongkong in 1997, its outbreak in the neighbouring countries like China, Pakistan, Myanmar, Bangladesh, and Afghanistan is more dreadful for India and since Manipur is bordering with Myanmar, it is highly vulnerable to the entry of avian flu into Indian territory.

Though India had experienced an outbreak of avian flu in Maharashtra in February 2006, it was eventually controlled in August 2006, and no fresh outbreak was reported since then. An unusual mortality in poultry was reported from a small unit in the East Imphal district of Manipur (village Chingmeirong) where 132 birds died in a period of 6 days from 7 July 2007 onwards. After verification, the Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Govt. of India, notified the outbreak of HPAI in Manipur to the global community through Office International des Epizooties (OIE) (World Organization of Animal Health) on 25 July 2007. Control and containment operations were undertaken around the infected area in Chingmeirong village in Manipur. These included culling of birds; disposal of birds and infected materials; quarantine and restrictions in the operational area, clean-up, disinfection, and sanitation, followed by post-operation surveillance in and around the Chingmeirong village. Poultry was culled within a radius of 5 km and surveillance was carried out in a further radius of 5-10 km for 90 days, as per the protocol laid down by IOE to regain freedom from avian influenza (Kumar *et al.*, 2008).

The latest outbreak reported from Imphal was on 18.04.2015. During control and containment operations, about 21 thousand birds were culled. The country was declared free from Avian Influenza on 29.7.2015 after completion of disinfection and Post Operation Surveillance. As part of preparedness, Country wide surveillance is being maintained against the disease (Government of India, 2015). The Director, National Institute of High Security Animal Diseases (NIHSAD) informed the Department that they had received one dead chicken from the Joint Director, ICAR Research Complex, Manipur Centre, Lamphelpat, Imphal of Manipur on 18-04-2015 which had been found positive in RT-PCR and Real time RT-PCR for H5N1 AIV. Keeping in view the revised action plan, the intimation of the result was given to the state by NIHSAD, Bhopal for starting the control and containment operations so as to avoid the further spread of the disease. The Director, Veterinary and A.H. Services, Government of



Manipur was requested to send a report on the matter and take necessary measures as per Action Plan on Avian Influenza. The intimation was given to the Ministry of Health & Family Welfare by this Department. State Government carried out control and containment operation which is over on 29-04-2015 and the State issued the sanitization certificate for the said epicentre on 30-04-2015. During the operation, 20874 birds were culled while 940 had died out of a population of 21814 birds in 1 km. radius. The Department has issued the Post Operation Surveillance Plan (POSP) on 30.04.2015 which will be continued for a period of three months from the date of issue of sanitization certificate (*Status Note on Avian Influenza in Manipur and Telangana*, n.d.).

Conclusions:

Avian influenza could leave a lasting impact on the livelihood of the farmers engaged with the poultry sector since most of the farmers are small-scale. The overall impact of such disease outbreaks would not only affect the poultry farmers but also indirectly affect the hatcheries, poultry meat- based hotels, retail shops and dealers, etc. To minimize the impact of such disease outbreaks in the future, appropriate insurance mechanism provided by the Government may be developed in the State to encourage the growth of the Poultry sector. It may be suggested that proper dissemination of information to the public regarding the causes and transmission of the flu needs to be carried out. Poultry farmers need to be educated about the strict hygienic practices and the various disinfection procedures that are to be followed to minimize the risk of spreading the flu. Constant surveillance particularly in the border areas needs to be strengthened to check of entry of wild birds which may be carrying the disease.

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