

**Short Communication**
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CODEN (USA):IJPTIL**Animal Influenza: Current Progress and Modern Approaches in the Disease Diagnosis**

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Corresponding Author: malikyps@gmail.com**ABSTRACT**

Infectious diseases are becoming more rampant these days and are also associated with colossal losses worldwide. The spread of infectious agents has been facilitated by urbanization, climate change, and globalization. In recent past, the world has witnessed several events of infectious diseases like SARS, MERS, Zika, Ebola, Swine flu and Bird flu. Sometimes complications are further intensified by the unavailability of effective prophylactic or therapeutic measures.

Since the first evidence of Influenza i.e. avian influenza (AI) in 1878 in poultry it has acquired the status of most important infectious disease of domestic and wild poultry birds. Over the last 10 years, H5N1 highly pathogenic avian influenza (HPAI) in poultry has spread across Asia, Europe and Africa. The continuing outbreaks of HPAI in several Southeast Asian countries that begun in late 2003 and early 2004 have been disastrous to the poultry industry in the region and have raised serious global public health concerns. In India, H5N1 outbreaks were first recorded in 2006, and have continued each year since then. Millions of India's chickens and ducks have been culled in efforts to contain and eliminate the virus. Economic losses to the Asian poultry sector are estimated at around \$10 billion, but despite control measures the disease continues to spread, causing further economic losses and threatening the livelihood of hundreds of millions of poor livestock farmers, jeopardizing smallholder entrepreneurship and commercial poultry production and seriously impeding regional and international

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trade and market opportunities. If serious adverse impacts on these poultry farmers are to be avoided, it is essential to develop and implement control strategies.

Avian Influenza can be suspected within any flock with sudden deaths followed by severe depression,

inappetence, and a drastic decline in egg production. The presence of facial edema, swollen and cyanotic combs and wattles, and petechial hemorrhages on internal membrane surfaces increases the likelihood that the disease is HPAI. Though, clinical signs vary constantly and are mostly non-specific, an absolute diagnosis is dependent upon the isolation and identification of the causative virus. The detection strategies based on laboratory methods includes viral gene detection by RT-PCR, and multiplex PCR. Among available diagnostic methods, nucleic acid based techniques are more reliable being rapid, more sensitive and specific as well as economically more feasible particularly in resource-poor settings. RT-PCR can detect the HA gene, even in specimens that were negative for virus by standard testing in eggs. This can be combined with sequencing of the HA cleavage site, which offers a sensitive way to access the virulence potential of AIV. Commercially available type A influenza antigen-capture enzyme linked immunosorbent assay kits designed for uses in human influenza have recently shown promise as a possible rapid diagnostic test for poultry.

Besides these, appropriate prevention and control strategies to be adapted for effectively checking the spread of AI needs to be strengthened via disease awareness, early detection, timely notification, depopulation and proper disposal of affected birds, stamping out, strict biosecurity, adequate hygiene and disinfection, isolation, quarantine, zoning, imposition of movement restrictions, control of live bird market. In view of a threat of global outbreak of AI and apprehensions of a human pandemic, the Department of Animal Husbandry, Dairying & Fisheries (DADF), Government of India had prepared an action plan to deal with eventuality, if any and also the Government of India, through the Ministry of Agriculture, Department of Animal Husbandry Dairying and Fisheries, involved in controlling HPAI at source in the affected states. During the presentation a comprehensive overview will be presented on the recent research advances on AI infection which is a major issue of public health concern.