

## **Environmental Determinants of Highly Pathogenic Avian Influenza in China**

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## **Abstract**

**Background:** This study was initiated by the Project I. Avian flu early warning methodology development using geospatial data & space technologies which was included at UN/China Workshop on Tele-Health Development in Asia and the Pacific Region 2005 Guang zhou China. This project is in the category of Tele-epidemiology. Due to the destructive avian flu impact particularly to Asia, participants of workshop suggested to perform this project. **Objective:** To investigate the distribution pattern and environmental factors of highly pathogenic avian influenza (HPAI) in mainland China from 2004 to 2005. **Methods:** we used geographic information system and remote sensing techniques to determine spatial distribution pattern and identify environmental factors associated with HPAI. **Results:** spatial distribution pattern of HPAI was identified with nonrandom patterns and clusters. HPAI outbreak sites were usually closed to arterial water net systems and national highways with the median of distance of 3.270 kilometers and 7.789 kilometers respectively. Besides, the relationship between HPAI and land surface temperature (LST) was analyzed and showed LST could be an important determinant of HPAI outbreak, and over 80% of the outbreak sites had their LST ranging from 5 to 15 when HPAI occurred accordingly. **Conclusion:** The findings of this study provided useful clues for prevention and control of HPAI, and it could strengthen the understanding of HPAI epidemiology and some variables associated with HPAI can be used for the prediction of HPAI outbreaks.