GMPC-Thesis and Opinions Platform

eISSN:2747-5735

Investigation of risk factors for the introduction of highly pathogenic avian influenza H5N1 infection among commercial turkey operations in the United States, 2022: A case-control study

Kelly Patyk[1], Victoria L. Fields[1*], Andrea Beam[1], Matthew Branan[1], Rachel McGuigan[1], Alice L. Green[1], Mia K. Torchetti[2], Kristina Lantz[2], Alexis Freifeld[1], Katherine Marshall[1], and Amy H. Delgado[1]

[1]Center for Epidemiology and Animal Health, Animal and Plant Health Inspection Service, United States Department of Agriculture, Fort Collins, CO 80526, United States. [2]National Veterinary Services Laboratories, Animal and Plant Health Inspection Service, United States Department of Agriculture, Ames, IA 50010, United States.

[#] These authors have contributed equally to this work and share the first authorship.

Avian Influenza Summit
University of Arkansas
Fayetteville, Arkansas, USA
October 16-17, 2023

***Correspondence:**
Victoria L. Fields
victoria.fields@usda.gov

Abstract

The 2022–2023 highly pathogenic avian influenza (HPAI) H5N1 outbreak in the United States (U.S.) is the largest and most costly animal health event in U.S. history. Approximately 70% of commercial farms affected during this outbreak have been turkey farms. We conducted a case-control study to identify potential risk factors for the introduction of the HPAI virus into commercial meat turkey operations. Data were collected from 66 case farms and 59 control farms in 12 states. Univariate and multivariable analyses were conducted to compare management and biosecurity factors on case and control farms. Factors associated with increased risk of infection included being in an existing control zone, having both brooders and growers, having toms, seeing wild waterfowl or shorebirds in the closest field, and using rendering for dead bird disposal. Protective factors included having a restroom facility, including portable, available to crews that visit the farm and workers having access and using a shower at least some of the time when entering a specified barn. The study results provide a better understanding of risk factors for HPAI infection and can be used to inform prevention and control measures for HPAI on U.S. turkey farms.

Keywords: HPAI, Turkeys, United States, Risk-factors

Citation. Patyk, K., Fields, V. L., Beam, A., Branan, M., McGuigan, R., Green, A. L., Torchetti, M. K., Lantz, K., Freifeld, A., Marshall, K. and Delgado, A. H. Investigation of risk factors for the introduction of highly pathogenic avian influenza H5N1 infection among commercial turkey operations in the United States, 2022: a case-control study. Proceeding of The First International Avian Influenza Summit, University of Arkansas- October 16-17, 2023". GMPC TOP. 3(1). pp. 22. https://doi.org/10.51585/gtop.2023.1.0025