Abstract

Introduction and Aims: *Salmonella* is one of the most important pathogens that not only causes financial and economic damage to the poultry industry, but also some serotye of this bacterium, including the typhimurium, can be transmitted to humans and cause mild to severe diseases. The purpose of this study was to investigate the contamination of broiler chickens in Kerman region and to obtain risk factors which could lead to more contamination in poultry halls.

Materials and Methods: In a cross-sectional study, 110 poultry houses were surveyed in Kerman, Rafsanjan and Bardsir from June to July 2018. Information about the 28 variables that was thought to be related to the incidence of *Salmonella* infection was obtained by a questionnaire from poultry farmers and laborers. The incidence of *Salmonella* contamination was determined based on the results of a sampling of five freshly collected fecal samples in each poultry house. Fecal samples were tested using culture and PCR method. Multivariate regression analysis and Chi-square test were used to analyze the data.

Results: In the poultry houses in this study, the interval less than one month between the two breeding time (OR = 6.530), the number of fans less than 5 in each salon (OR = 4.094) and number of houses less than 4 in each farm significantly increased the probability of infection with *Salmonella spp*. (ORs were respectively 9.650, 29.427 and 7.140 for one, two and three houses) Also, the results of multivariate logistic regression showed that the use of bell drinking system (OR = 4.379) and presence of fewer than 5 fans in each salon (OR = 2.512) had increased significantly risk of infection with *Salmonella* typhimurium bacteria in the hall.

Conclusions: The results of PCR in this study showed that the molecular prevalence of poultry house infections with *Salmonella spp*. in Kerman and the suburbs was 48%, of which 24% were detected by typhimurium serotype. Strickly observing the health principles such as the appropriate interval between two breeding priodes and the use a sufficient number of ventilators can reduce the incidence of *Salmonella* infection in poultry and prevent of transmission to human.

Keywords: : *Salmonella*, Broiler chicken, Risk factors, PCR, Kerman

University of Zabol

Graduate School

Faculty of Veterinry

Department of Nutrion and animal breeding

The Thesis Submitted for the Degree of M.Sc

(In the field of Veterinary)

Title:

A study on *Salmonella* infection in broiler chicken in Kerman county and evaluation of its risk factors

Supervisors:

Dr. D. Saadati

Advisor:

Dr. M. Najimi

Dr. M. Jajarmi

By:

Atiyeh Firouz Abadi

Summer 2019