ISSN: 2574-1241
DOI: 10.26717/BJSTR.2018.12.002234
Starciuc Nicolae. Biomed J Sci & Tech Res

BIOMEDICAL Journal of Scientific & Technical Research

Research Article Open Access

The Epidemiological Situation of Avian Salmonellosis in the Republic of Moldova

Starciuc Nicolae*, Juncu Olga and Osadci Natalia

Faculty of Veterinary Medicine, Department Clinics II, Moldova, Europe

Received: December 10, 2018; **Published:** December 18, 2018

***Corresponding author:** Starciuc Nicolae, Faculty of Veterinary Medicine, Department Clinics II, Moldova, Europe

Abstract

The goal of the proposed research was to establish the diversity of the pathogenic serotypes of *Salmonella spp*. in the poultry enterprises which produce meat and eggs for consumption and to determine the critical points of carcasses and eggs contamination which could lead to risks of toxic infections in humans. The samples for microbiological investigations were collected from the poultry carcasses and egg shells delivered to the Central Agricultural Market of Chisinau from different poultry companies in the country, including equipment, vehicles for poultry transportation and manure. The inseminations were performed on nutrient media like: bismuth sulfite agar and Salmonella Sighela Agar. The bacteriological investigations demonstrated that the majority of the examined samples showed the presence of colonies of *Salmonella spp*. The results demonstrated that in the samples taken from poultry products (carcasses, meat products and eggs) *Salmonella spp*. serotypes as S. Infantis, *S. enteritidis*, *S. typhimurium* have prevailed; however, in the samples taken from poultry equipment and vehicles, prevailed the serotypes as *S. enteritidis, S. Derby, S. gallinarum* and *S. Infantes*. The data gathered confirmed that some pathogenic serotype of *Salmonella spp*., in particular *S. enteritidis* and *S. typhimurium* persist in the poultry products and can be a source of risk of birds salmonellosis and human toxic infections.

Keywords: Carcasses; Lavages; Contamination; Microorganisms; Microbial Colonies

Introduction

It is known that poultry meat is often contaminated with pathogens that can be dangerous for humans. At present, the microorganisms of the genus *Salmonella spp.* and *Campylobacter* are the most common hazards associated with infected poultry consumption [1,4,6]. From approximately 20-25% of all cases of salmonellosis, it is estimated that *Salmonella spp.* illness appears consecutively of infected poultry consumption [3]. Another important source of toxic infections in humans is poultry eggs which can be contaminated with *Salmonella spp.* During the sale, as well as in contact with the external environment (air, equipment, packaging, staff, transport, etc.), the most frequently pathogenic serotypes of *Salmonella spp.* is *S. enteridis* the *S. galinarium* [2,5,7].

Taking into consideration the role of domestic and wild birds and their products (meat and eggs) in studying the incidence of bird's salmonellosis and food toxic infections in humans; therefore, the goal of our research was focused on establishing the spread of avian salmonellosis on the territory of the republic as well as determining the isolation methods of pathogenic serotypes of *Salmonella spp*.

Materials and Methods

As research material served meat samples taken from poultry carcasses sold in the commercial units of the Central Agricultural Market of Chisinau, delivered from different poultry farms in the republic. In total there were 45 samples collected and examined. Simultaneously, the egg samples for investigation (45 samples) were collected from the units specialized in the marketing of eggs in the Central Agricultural Market of Chisinau, delivered from poultry enterprises producing eggs. Also, were collected 35 samples of material for investigation from the poultry equipment, vehicles and faces. The inseminations were carried out using culture media as: bismuth sulfite agar (BSA), and Salmonella Sighiella Agar (SSA). Some investigations (serotyping) were performed at the Republican Veterinary Diagnostic Center.

Results/Observations

The monitoring of the *Salmonella spp*. colonies presence and their morphological structure was studied on the surface of the sample (poultry carcasses) as well as their inside samples. Some of

References

1. Amélie Rouger, Odile Tresse, Monique Zagorec (2017) Bacterial Contaminants of Poultry Meat: Sources, Species and Dynamics. J Microorganisms 5(3): 50.

2. Andiara Gonçalves-Tenório, Beatriz Nunes Silva, Vânia Rodrigues, Vasco Cadavez, Ursula Gonzales-Barron (2018) Prevalence of Pathogens in Poultry Meat: A Meta-Analysis of European Published Surveys. J Foods 7(5): 69.

3. Arnold ME, Martelli F, McLaren I, Davies RH (2014) Estimation of the rate of egg contamination from Salmonella-infected chickens. Zoonosis Public Health 61(1): 18-27.

4. Durul B, Acar S, Bulut E, Kyere EO, Soyer Y (2015) Subtyping of Salmonella Food Isolates Suggests the Geographic Clustering of Serotype Telaviv. Foodborne Pathog Dis 12(12): 958-965.

5. Gulay Firildak, Ahmet Asan, Erman Goren (2015) Chicken Carcasses Bacterial Concentration at Poultry Slaughtering Facilities. Asian Journal of Biological Sciences 8(1): 16-29.

6. Kottwitz LB, Leão JA, Back A, Rodrigues Ddos P, Magnani M, et al. (2013) Commercially laid eggs vs. discarded hatching eggs: Contamination by Salmonella spp. Braz J Microbiol 44(2): 367-370.

7. Mouttotou N, Ahmad S, Kamran Z, Koutoulis KC (2017) Prevalence, Risks and Antibiotic Resistance of Salmonella in Poultry Production Chain. In Tech; Rijeka, Croatia pp. 215-234.

ISSN: 2574-1241

DOI: 10.26717/BJSTR.2018.12.002234

Starciuc Nicolae. Biomed J Sci & Tech Res

Submission Link: https://biomedres.us/submit-manuscript.php