

TITLE: CASE REPORT: OCCURRENCE OF AVIARY TYPHUS (*Salmonella Gallinarum*) IN LAYING HEN BREEDING IN FREE-RANGE SYSTEM IN THE REGION OF RIO DE JANEIRO.

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ABSTRACT:

The increasing demand of hen eggs by the Brazilian population has pressured the rise in national production. Along with this factor, big retail and fast-food companies have been forcing producers to invest in animal well-being, preferring the purchase of eggs from hens bred in cage-free and free-range systems. In the free-range system, the laying hen have access to the paddock during the day and are free to express their natural behavior, such as sand bathing. However, this system makes the animals more exposed, since they can have contact with poultry that are reservoir for diseases like the Aviary Typhus. The present study had as objective to identify in free-range laying hen farms the etiological agent that caused septicemia and high mortality rate in an establishment located in the mountain region of Rio de Janeiro. A visit to the establishment was made, where a 50% mortality rate in a period of sixty days was reported by the property owner. During the physical exam it was observed prostrated, drowsy animals, with ruffled feathers and greenish diarrhea. Nine animals were selected and sent to the "Núcleo de Diagnóstico Avícola" (Center of Poultry Diagnosis) of Universidade Federal Fluminense (UFF). Blood was collected to make the quick serum agglutination test for pullorosis, having necropsy done next, where it was possible to observe macroscopic injuries, and nine liver swabs as well as nine ovary swabs were collected. The Isolation and identification were made in accordance with what is proposed by Koneman (2012), the strains identified as *Salmonella* spp. by the biochemical test were sent to the Enterobacteria Laboratory of Fundação Oswaldo Cruz to discover the serotype. Next, the colonies undergone the antimicrobial resistance phenotypic detection; Nalidixic acid (NAL 30 µg), Amoxicillin and clavulanic acid (AMC 30 µg), Ceftiofur (EFT 30 µg), Gentamicin (GEN 30 µg) e Enrofloxacin (ENRO 30 µg). From the sixteen samples that were collected for the quick serum agglutination test, 44% (7/16) showed positive results. All ovary samples had negative results in bacterial isolation. From the nine liver samples, 55.5% (5/9) were positive for *Salmonella*, four of those being from the serotype *Salmonella enterica enterica Gallinarum*. In the phenotypic resistance testing, all strains were resistant to the antimicrobials ENRO and NAL, however, they were sensitive to AMC, EFT, and GEN. After diagnosis, the State Animal Defense Service was notified and the whole unit was sent to sanitary slaughter, the bedding went through a fermentation process and afterwards used as fertilizer.

Keywords: hen, eggs, diagnosis, serology, aviary salmonellosis, *Salmonella Gallinarum*.