

**TITLE:** MICROBIOLOGICAL EVALUATION OF FREE-RANGING CHICKEN EGGS (*GALLUS GALLUS*) COMMERCIALIZED IN THE BRAZILIAN SEMIARID

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**ABSTRACT:**

In Brazil, the scale of egg production increases each year, much of it being absorbed by the domestic market, impelling the need for greater control of the bacteriological quality of the entire production chain. In addition to the nutritional aspect, the production of eggs, especially from free-ranging chickens, has been an alternative of generating income for family-farm producers. Therefore, the objective of this work was to identify the presence of microorganisms in free-ranging chickens (*Gallus gallus*) marketed in open fairs in the Brazilian semi-arid region. Samples of 128 eggs marketed at points of sale in the rural and urban areas of the Seridó microregion in the state of Rio Grande do Norte were used. The outer part (shell) was sanitized with 70% alcohol and by visualization in a ovoscope a small part of this shell was broken with a sterile forcep in the lower portion where the air chamber is located, forming a hole of approximately 1cm, without damaging the film between the shell and albumen to separate the albumen and yolk using a suction syringe. Then the aspirated material (albumen and yolk) was enriched in Brain Heart Infusion (BHI) broth in the proportion of 2 ml egg content in 3 ml BHI for 24 h and then seeded in Petri dishes containing the media defibrinated sheep blood agar 5%, MacConckey agar, and agar agar with a thickness of 90mm. The remainder of the syringe sample contents were used for pH evaluation. After cultivation, the plates were incubated at 37 °C in aerobiose for 24-48 hours to verify bacterial growth. The bacterial colonies were submitted to bacterioscopic examination by Gram staining method and identified by biochemical tests. Bacterial growth was observed in 40 eggs (31.3%), eight in albumen and 38 in yolk. Eighteen bacteria (45%) were Gram-positive and 22 (55%) Gram-negative. The isolated microorganisms were *Staphylococcus* spp. (27.5%), *Bacillus* spp. (15%), *Pseudomonas aeruginosa* (10%), *Klebsiella* spp. (7.5%), *Salmonella* spp. (7.5%), *Proteus mirabilis* (7.5%), *Citrobacter* spp. (7.5%), *Escherichia coli* (5%), *Providencia* spp. (5%), *Corynebacterium* spp. (2.5%), *Enterobacter* spp. (2.5%) and *Alcaligenes* spp. (2.5%). Thus, it is concluded that there is a wide variety of important bacterial isolates that may come from inadequate handling, storage and transport, which may have an impact on public health.

**Keywords:** Enterobacteriaceae, eggs, brazilian semiarid, public health

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