Title: *E.coli* research in trachea and cloaca of broiler chickens in São Jose do Vale do Rio Preto-RJ

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Abstract:
In aviculture the search for increasing productivity can facilitate the spread of infectious diseases by the high population density in poultry housing system. Although *Escherichia coli* and *Staphylococcus* spp. are part of the chicken normal microbiota, they can trigger inflamatory and septic symptoms in poultry under stressing conditions. Also enterotoxigenic strains can lead to food toxinfections in humans. In industrial livestock antibiotic feed additives for poultry feed are largely used to avoid bacterial infections and improve the animals' performance. Otherwise it can lead to the raise of positive selective pressure and the outbreak of resistant strains. The current work aimed to isolate *Escherichia coli* in an industrial poultry environment. Fifteen swabs from the trachea and fifteen swabs from the cloaca were collected from animals with thirty days of age from an industrial farm in São Jose do Vale do Rio Preto-RJ. The samples were transported in Nutrient Agar to the Veterinary Bacteriology Laboratory/UFRRJ and inoculated in EMB (Eosin Methylene Blue) and Mac Conkey Agar. Later on, isolates were submitted to the identification biochemical tests. Trachea samples yielded 12 isolates being 50% *Escherichia coli* (6/12), 25% *Citrobacter diversus* (3/12), 16 % *Serratia liquefaciens* (2/12) and 8 % of *Enterobacter agglomerans* (1/12). Avian enterobacteria is thought to gain entry to the chicken by inhalation of coliform-contaminated dust or by colonization of the upper respiratory tract through ingestion of food and water contaminated with feces. Isolates obtained from cloacal swabs were *Escherichia coli* 50% (6/12), *Enterobacter agglomerans* 25% (3/12), *Proteus mirabilis* 16% (2/12) and *Citrobacter amalonaticus* 8% (1/12). Despite bacterial isolation, the animals did not present any Colibacilosis symptoms or lesions. The MALDI-TOF technique (Matrix-Assisted Laser Desorption Ionization–Time of Flight Mass Spectrometry) and serological test will be executed to confirm the phenotypic identification and to identify toxigenic strains, respectively.

Keywords: Broiler, enterobacteria, resistance, *Escherichia coli,* toxinfection

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