

Evaluation of the effectiveness of Poulvac ST and Lincospectin440 in reduction of Salmonella Minnesota in experimentally challenged chickens

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Brazilian companies producing chicken meat have reported an increase in the prevalence of *Salmonella* Minnesota (SM) on farms and in slaughterhouses. The objective of this experiment was to evaluate the ability of the Poulvac ST vaccine (PVST) and LincoSpectin 440 (LS440) via feed, reduce contamination by SM, in the liver of challenged chickens. This study involved 180 1-day-old Cobb broiler chicks. Birds were housed in 3 rooms, each room contained two separate boxes of 1.8 m² each. The litter used was shavings, treated with formaldehyde, as well as the equipment. Feed and water were provided *ad libitum* to the 28th day. Treatments were named T01 (birds vaccinated with PVST), T02 (birds vaccinated and then medicated) and T03 (birds medicated with LS440). All rooms had their own positive control (birds only challenged without vaccination or medication). In the groups with vaccination (T01 and T02), PVST was administered in two doses according to the label recommendation. The first dose on the first day by spray and the second oral dose at 14 days of age. In the medicated groups (T02 and T03), LS440 was incorporated into the feed between 21 and 28 days with inclusion of 200g/ton (88ppm). The challenge was performed with a field-isolated SM strain. The culture was made resistant to antibiotics (nalidixic acid and novobiocin) to inhibit interference from competing microbiota. All birds were inoculated individually with 1.0 mL (concentration of 1.0×10^6 CFU/mL), orally, on the 21st day of life. Efficacy was evaluated by bacteriological examination of the liver at 28 days. The liver of each of the 30 birds/pen was collected individually for analysis of *Salmonella*. At 28 days, for all treatments, a statistical difference was observed for the variable presence/absence of SM in the liver between the positive control groups and the treated/vaccinated groups by Chi-Square test (p-value 0.05). The percentages of presence compared to the control were 13.33% against 43.33% in T01, 0.00% against 46.67% in T02 and 16.67% against 43.33% in T03. It is concluded that both the vaccine (T01) and the antimicrobial (T03) used alone were able to significantly reduce the positivity for SM in the liver and when used together in a single protocol this effect was synergistic (T02).