



I-INTERNATIONAL MEETING OF ANIMAL SCIENCE IN SEMI-ARID REGIONS

Universidade Federal do Agreste de Pernambuco – UFAPE
July 03rd to 05th, 2024, Garanhuns-PE

Área do trabalho: Nutrição e produção de não-ruminantes

EVALUATION OF ORGANS BIOMETRY OF LAYING HENS FED WITH SYMBIOTIC VERSUS ZINC BACITRACIN

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The aim of this study was to evaluate the effect of replacing zinc bacitracin with symbiotic from the rearing, and production phases on the development of laying hens in the final phase of laying. An experiment was conducted with laying hens aged 70 to 90 weeks, in a completely randomized design, consisting of six treatments, with six replicates, three replicates containing 5 birds, and three replicates containing 6 birds, totaling 198 laying hens. The experiment was conducted at the Department of Animal Science of the Federal Rural University of Pernambuco (UFRPE), approved by the local Animal Use Ethics Committee (License number 060/2019). The treatments consisted of four experimental diets, two basal diets, the first composed of corn and soybean meal (RMS) and the second composed of corn, soybean meal, and meat and bone meal - without additives (FCO), and two other diets with inclusion of additives to the FCO diet, with 0.05% zinc bacitracin (BAC) and with 0.1% symbiotic additive, the latter provided to three groups of birds, one with birds that had already been receiving the symbiotic since the rearing phase, i.e., from one day of age (SIMC), another that had been consuming it since the rearing phase, i.e., from 6 weeks of age (SIMR), and another that started consuming the symbiotic at 17 weeks of age, the beginning of production (SIMP). At the end of the 90th week, one bird per replicate was euthanized to collect the organs to obtain weight and length, the evaluated organs were the spleen, cecum, heart, intestine, oviduct, liver, and pancreas. The variables were analyzed by PROC GLM of the SAS OnDemand program, and the means were compared by the Orthogonal Contrast test ($P \leq 0.05$). The contrasts consisted of C1: RMS vs FCO; C2: FCO vs BAC; C3: BAC vs SIMC; C4: BAC vs SIMR and C5: BAC vs SIMP. In contrast 1 (RMS vs FCO), there was a significant difference ($p < 0.05$) for pancreas weight (PAN), showing a higher mean in the treatment only of those birds fed with the corn and soybean meal-based diet compared to those birds that consumed the diet containing FCO. In C2, there was a difference in cecum length (CEC), where BAC showed a smaller CEC size. There was a significant difference ($p < 0.05$) only for relative liver and pancreas weight. In contrast 4 and 5 (BAC vs SIMR and SIMP, respectively), there was a significant difference for relative liver weight (FIG), where the means show that the treatments with symbiotic addition in rearing and production (SIMR/SIMP), and the birds had heavier livers compared to those subjected to diets with the zinc bacitracin antibiotic. It is concluded that the symbiotic stands out as a good substitute for zinc bacitracin, as it provides better organ health. And considering the set of data obtained, the rearing phase would be the best time to insert the symbiotic to keep the laying hens healthy until 90 weeks of age.

Palavras-chave: Prebiotic, Probiotic, Gut health, Microbiota.