

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

ADDITIVES IN THE TREATMENT OF FRESH WASTE FROM COMMERCIAL LAYING HENS

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The addition of additives to commercial laying hens can be a quick and economical solution to alleviate respiratory diseases in poultry and humans, increase the performance of laying hens as well as the production profitability. Calcium sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), calcium oxide (CaO), silica dioxide or diatomaceous earth, aluminum sulfate, sodium sulfate, acidified clay, simple superphosphate, among others, have been additives used to treat waste and the poultry bed, with individual chemical functions. The present study was developed with the objective of determining the dry matter content, pH and ammonia volatilized in fresh waste from laying hens treated or not with different additives. A completely randomized experimental design was used in a 4X5 factorial design (3 treatments + 1 control x 5 periods) and four replicates. The treatments evaluated were: untreated waste, fresh waste treated with calcium oxide - virgin lime (500 g m^{-1}), fresh waste treated with calcium sulfate - agricultural gypsum (40% of bed weight) diatomaceous earth (200 g m^{-1}). The wastes were collected and analyzed before addition of the additives and at 4, 8, 12, and 16 days after addition. The analyzed variables were: dry matter, pH and volatilized ammonia. The data were submitted to analysis of variance to verify the effects of the studied factors (isolated and interactions). The Tukey test ($P < 0.05$) was used to compare the means. There was no significant effect of the treatments on the dry matter content of the waste, however, it was observed that the waste treated with calcium oxide showed higher pH and volatilized ammonia values than the other treatments. There was no effect of the periods evaluated on the analyzed variables. It is concluded that the incorporation of calcium oxide (virgin lime) in the fresh waste of commercial laying hens increases the pH and, consequently, the loss of nitrogen through the volatilization of the ammonia into the environment.

Keywords: Conditionate, volatilize, well-being

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