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Effect of dietary glycerin supplementation in the starter diet on broiler performance

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This study was conducted to evaluate the performance, carcass composition, and litter moisture of broiler chicks fed crude glycerin for 1–21 days. The study used 1056 male birds distributed in a completely randomized design, with six treatments (0, 3, 6, 9, 12, and 15% crude glycerin from 1 to 10 days), with eight replicates. After the 10th day, each treatment group was divided into two groups out of which one continued to receive the same glycerin level and the second group started to receive a glycerin-free diet. The parameters weight gain, feed intake, feed : gain, and livability during the first 10 days exhibited a quadratic response ($P < 0.05$), which predicted higher values at crude glycerin levels of 9.01, 9.02, 9.03, and 6.43%, respectively. From day 1 to day 21, the group receiving crude glycerin throughout the experiment showed a quadratic effect ($P < 0.05$) for weight gain, feed intake, feed : gain, and livability, with higher values at crude glycerin levels of 6.06, 7.97, 13.11, and 7.69%. As glycerin levels increased, the litter moisture increased linearly ($P < 0.05$) for both periods. The protein and fat deposition rates and dry matter of the carcasses were not affected ($P > 0.05$). Considering the period from day 1 to day 21, inclusion of up to 6.06% crude glycerin in the diet provided the best weight gain without affecting the birds' performance, the rate of protein and fat deposition on the carcass, or litter moisture compared with birds fed a glycerin-free diet.

Keywords:

biodiesel; byproducts; carcass composition; glycerol

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