

عنوان مقاله:

The Effect of Apple Pulp and Multi Enzyme on Performance and Blood Parameters in Native Laying Hens

محل انتشار:

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خلاصه مقاله:

This experiment was conducted to evaluate the effects of different levels of apple pulp and multi-enzyme on performance, egg traits and blood metabolites of native laying hens. In this experiment, 240 Azerbaijan province native laying hens aged from 28 to 40 weeks old were used in eight treatments and three replicates (10 birds per replicate) in a (4 × 2) factorial arrangement in a completely randomized design. The hens were fed apple pulp at 0, 5, 10 and 15% with two levels (0 and 0.05%) of multi-enzyme. The results showed that apple pulp or multi-enzyme and their combination significantly affected the performance, egg traits, blood biochemical parameters and immunity cells of native laying hens ($p < 0.05$). Multi-enzyme improved the amounts of egg weight, mass and production percentage. Inclusion apple pulp at 10% did not show any adverse effects on performance compared to the control. However, at 15%, egg weight and egg production percentage were reduced and the feed conversion ratio was increased. In the interaction effects, 10% of apple pulp with multi-enzyme showed positive effects compared to other treatments. Multi-enzyme increased the percentage of albumin, while it decreased the egg yolk percentage and egg specific gravity. In the combined treatments, albumin percentage was increased when apple pulp was used at 10%. On the other hand, inclusion of multi-enzyme in diets significantly reduced serum total protein and glucose, while by inclusion 10% resulted in a decrease in uric acid and an increase in blood glucose. The combined treatment showed the best effect on blood uric acid. In 10% of apple pulp group, the amount of heterophile and heterophile to lymphocyte ratio was increased. In conclusion, inclusion of 10% apple pulp and 0.05% multi-enzyme improved laying hens' performance, egg traits and blood parameters with no adverse effects.

کلمات کلیدی:

Native laying hens, Apple pulp, Egg traits, Performance

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