

Effects of mushroom by-product on the growth performance, fecal index and blood antioxidant in goat kids ⁽¹⁾

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Abstract

This study was aimed to evaluate the effect of adding mushroom by-product to the daily diets for goat kids on growth performance, fecal index, and blood antioxidant, and thereby improve the reuse of agricultural by-product. Forty 4-wk-old Alpine or Saanen hybrid kids were randomly assigned to 4 diet treatment groups, with each treatment group replicating (row) in 5 and 2 goat kits per row. The diet control group included the basal corn-soybean meal (comparison group), including 4 diets added with dried and pulverized 3% *Pleurotus Eryngii* by-product, and 3% *Flammulina enoki* by-product, 1.5% *Pleurotus Eryngii* by-product, and 1.5% *Flammulina enoki* by-product. The experiment lasted 12 weeks. For the first 0-4 week, kids (5-8 week of age) received 1,000mL of milk replacer (150 g reconstituted milk) daily, adopting concentrated feed and water ad libitum. The experiment conducted tests on the growth performance, fecal index, blood traits, and lipid metabolism in blood of goat kids. The results showed that the total polyphenol compounds (TPC), reducing power and free radical scavenging capacity (DPPH) scavenging rate of *Flammulina enoki* by-product were higher than those of *Pleurotus Eryngii* by-product. The treatment group fed the diet of 1.5% *Pleurotus Eryngii* by-product and 1.5% of *Flammulina enoki* by-product during the 0-12 week period showed significantly higher weight gain than those from the control group ($P < 0.05$). However, there is no significant difference in feed intake and feed conversion rate among the treatment groups during the 0-4, 5-8, and 9-12-week periods. During the 9 and 12 wk, kids fed 3% *Flammulina enoki* by-product and mixture diet of 1.5% each of the two by-products showed significant decrease in the fecal index than that of the control group ($P < 0.05$). The treatment group fed diet adding mushroom by-products showed significantly higher content of IgM concentration in blood at the 4th and 12th week than the control group ($P < 0.05$). In sum of the above, supplementing 1.5% each of the two mushroom types to the diet of treatment groups will result in optimal effect in weight gain while the mushroom by-product could improve the health and growth performance in kids.

Key words: Mushroom by-product, Growth performance, Goat kids.

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