Impact of Thyme Oil and Lactobacillus acidophilus as Natural Growth Promoters on Performance, Blood Parameters and Immune Status in Growing Rabbits.

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ABSTRACT

Present study was conducted to evaluate the effect of thyme oil and *lactobacillus acidophilus* (supplement) as growth promoters in rabbit. 72 weaned V-Line male rabbits were randomly allocated into 4 equal groups. The first group (G1) was without any additives and consider as control group. The second group (G2) treated with the addition of *lactobacillus acidophilus* in drinking water in a concentration of $10^8$ cfu/ml. The third group (G3) treated with the addition of thyme oil in drinking water in a concentration of 1 ml/liter. The fourth group (G4) treated with the addition of both *lactobacillus acidophilus* and thyme oil in drinking water in a concentration of $10^8$ cfu/ml plus 1ml/L, respectively. The obtained results showed that, all treatments had significant improvement effects on the measured parameters (performance characteristics, cecum characteristics, RBCs, WBCs, kidney function, trigly-cerides, total cholesterol, sheep RBC's titer, liver antioxidant markers and hormones markers) when compared to the control group. The live body weight of G3 and G4 groups were higher (2116 and 2058 g) than those found in G2 and G1 groups (1958 and 1850 g) respectively. In addition, the body weight gain of G3 and G4 groups were higher (1364 and 1307 g) than those found in G2 and G1 groups (1207 and 1100 g). Moreover, the daily weight gain of G3 and G4 groups were higher (32.49 and 31.13 g/d) than those found in G2 and G1 groups (28.74 and 26.19 g/d). In addition, feed conversion ratio of G3 and G4 groups were higher (3.41 and 3.61) than those found in G2 and G1 groups (3.66 and 4.67). While G4, G2 and G3 groups had a significant enrichment effect on the intestinal beneficial bacteria. In conclusion, in present experiment inclusion thyme oil and/or *lactobacillus acidophilus* in the drinking water that stimulated body weight gain and increased feed conversion rate, and can be used as growth promoters in rabbit nutrition successfully without notable side effects on growing rabbits. Furthermore, it showed a significant positive effect on the physiology for treatment groups G3, G4 and G2 respectively compared to the control group.

**Key words**: Immunity, *Lactobacillus acidophilus*, Performance, Probiotic, Rabbit, Thyme oil
The aim of the present genome-wide association study (GWAS) was to identify single genetic mechanisms that control lactose traits variation in Egyptian buffalo. Traits, such as TPD52 and ZBTB10 on chromosome 15; AADAT and GALNTL6 on chromosome 3 and COL8A1 and PLOD2 on chromosome 1. Our findings provide the basis to uncover the regions harbored many candidate genes with biological roles associated with milk production and quality. The GWAS revealed key markers and candidate genes affecting lactose traits which facilitate the exploration of the genetic architecture of the trait. The work was performed in 1481 animals. A total number of 114 animals with high and low lactose traits were used in the present study. Genotype data were collected and were used to perform the analysis. A total of 205,480 SNPs from three populations were used. GWAS analysis was performed using a single marker regression. The GWAS revealed a large number of markers with a high association value with the trait. The findings of the current study will be helpful to breeders to improve and select animals in the future.