Effect of multi-enzymes oral administration on oxidative stress, antioxidant enzymes, and blood indices of growing rabbit males.

ABSTRACT

The present research aimed to study the impacts of diverse doses of multi-enzymes (ME) ZAD® oral administration on oxidative stress, some antioxidant enzymes, and blood indices of growing rabbit males. At 4 weeks (average body weight 527.64±15.78 g), forty-five weaned rabbit males from V-line (VL) were randomly distributed to three groups. The control group received orally 1.0 ml distilled water (0.0 ZAD®), the experimental groups administrated orally with 0.75, and 1.25 ml ZAD®/rabbit/day, respectively. The experimental period lasted for 6 weeks. The values of derived compounds of reactive oxygen metabolites were decreased significantly ($P \leq 0.01$) with ME oral administration (ZAD®) levels, however, the values of total antioxidant capacity, superoxide dismutase, and glutathione S-transferase were enhanced significantly ($P \leq 0.05$). The results indicated that improvement of the scavenging capacity of the antioxidant defense system against oxidative stress processes in the treatment groups. The parameter hematological values containing red blood cell counts, hemoglobin, packed cell volume and mean corpuscular volume were improved significant ($P \leq 0.05$) with V-line rabbits groups which treated with ME oral administration (ZAD®) comparing with the control group. Some values of hematological blood in treated groups as mean corpuscular hemoglobin, and Mean corpuscular hemoglobin concentration and platelets count did not differ from those of the control group. There were highly significant differences ($P \leq 0.001$) between treatments on white blood cell counts, lymphocytes%, and neutrophils (N): lymphocytes (L) also were significant differences ($P \leq 0.01$) between treatments on neutrophils%. The highest value of WBC count and L% ($12.11 \times 10^3/\mu L$ and 63%), respectively noted with rabbits received 1.25 ZAD®/rabbit/day, while recording the lowest value of N% and N: L (25.9% and 0.41), respectively.

Key Words: antioxidant-hematological indices-oxidative stress-rabbit**.**