DEDICATION

TO

The souls of my late parents: mother Fatima and Father Hamed Elneel may their souls rest in Allah's merciful

TO

My husband Aktham and our beloved daughters Noon and PalsamTO

My brothers and sisters

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Abstract

The effect of enzymes supplementation of maize-based and sorghum based broiler diets on the broiler performance, dry matter digestibility some carcass quality parameters and blood constitutes were investigated.

A total of 400 one day old broiler chicks were randomly distributed into 4 dietary treatments (maize based diet with enzymes, maize based diet without enzymes, sorghum based diet with enzyme and sorghum based diet without enzymes) in factorial arrangement complete randomized design experiment (100 birds/treatment).

A multi-enzyme system (Optimize) consisted of phytase and non-starch polysaccharides (NSP) enzymes (xylanse and β-Glucanase) used in the broiler diet supplementation with inclusion rate of 1g/kg feed.

Overall performance results showed that the mean live body weight gain (g/bird) for birds fed enzymes supplemented diets was significantly ($P<0.05$) higher compared to unsupplemented diets throughout the experimental period and the final live body weight followed the same pattern of weight gain. The total feed intake (g/bird) for birds fed unsupplemented sorghum based diet was significantly ($P<0.05$) lower compared to other dietary treatments. No significant differences among dietary treatment in feed conversion ratio during the six weeks experimental period, but it tended to improve for birds kept on enzymes supplemented maize-based diets.

The statistical analysis of the main effects showed that that the significant ($P<0.05$) improvement in total weight gain and final live body weight was due to enzymes supplementation rather than the grain source. Also it can be seen that the enzymes supplementation caused a significant ($P<0.05$) increased in total feed intake (g/bird).

Dry matter digestibility tended to improve for birds fed maize based diet supplemented with enzymes; however this improvement is statistically insignificant.

Dressing percentage of birds fed enzymes supplemented diets was significantly ($P<0.05$) higher compared to those birds kept on unsupplemented diets. Meat and fat relative weights showed no significant differences.

Carcass cuts relative weights showed no significant difference but it tended to be higher for birds fed enzymes supplemented diets for both grains.

Internal organ (liver, pancreas and spleen) relative weights showed no significant differences but it tended to be lower for birds fed unsupplemented sorghum diets.

Blood glucose, protein, phosphorus, calcium glutamate oxaloacetate transaminase (GOT) and glutamate pyravate transaminase (GPT) levels were significantly ($P<0.05$) affected by the dietary treatments. All these blood constituents except blood calcium were significantly ($P<0.05$) affected y the enzymes supplemented while blood calcium was affected by the grain source.

Sensory evaluation results showed no significant differences, but the yellowness degree of carcass of birds kept on maize-based diets tended to be higher.

Arabic Abstract