

Effect of Ginger *Zingiber officinale* and Thyme *Thymus vulgaris* on Reproductive and Reproduction performance of broiler breeder chickens Ross308

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Abstract

This study was conducted at the poultry farm/ Animal Resource Department of Agriculture College / University of Tikrit . Two experiments was done to evaluate the effects of different levels of medical herbal plant powder or extracts including ginger (*Zingiber officinale*) and thyme (*Thymus vulgaris*) on reproductive performance of broiler preeder chicken .

Exp 1

The effect of aqueous extract of ginger and thyme were investigatated on semen traits of broiler breeder males. Two aqueous extract with two levels of 5% and 10% offered in drinking water (100 ml/bird/ day) . A total number of 45 cocks Ross308 of 22 weeks old were randomly divided in to five equal treatment groups (9 males each) and were housed in cages in an open system house. Treatment 1 received a tap water (control) . Treatments 2 and 3 received drinking water with 5%and 10% aqueous extract of ginger respectively , and treatment 4 and 5 received drinking water with 5%and 10% aqueous extract of thyme respectively. Semen was collected from all cocks 5 times per week for two consecutive week monthly for evaluated . Semen traits , seminal plasma, blood constituents (RBCs count , WBCs count , pcv% ,FSH,LH, Testosterone hormones, ALT,AST,MDA and GSH) .

The results obtained could be summarized as follows :

1. The present results indicate a significant ($P<0.05$) increase in semen volume , sperm concentration , motility and a significant ($P<0.05$) decrease in the percentage of dead sperm and abnormal sperm in males treated with aqueous plant extract, as compared with control .
2. There is a significant effect ($P<0.05$) for treatments periods length of ginger and thyme (10%) aqueous extracts in all semen traits and seminal plasma, the highest values being at 28-36 wk.old in control group , at 28-44 wk.old in T3 and T4 and in 28-51wk.old in T2.
3. The results indicated that cocks with aqueous extract of ginger and thyme improved blood picture (RBCs count, WBCs count and pcv%) . Also the results pointed to significant ($P<0.05$) decrease in concentration of cholesterol , protein and glucose in semen plasma in treatments groups compared to control group.
4. Addition of aqueous plant extract of ginger and thyme results Significant ($P<0.05$) decrease in ALT and AST enzyme activity and increase ($P<0.05$) in LH,FSH and Testosterone the concentration in treated groups compared to control group.

Exp 2

A total number of 30 males and 210 hens, broiler breeder chickens ROSS308 of 24 weeks old were used to study the effect of using ginger and thyme powder as feed additives on performances , egg number(EN), egg weight(EW), egg mass(EM), Fertility % and hatchability% ,

concentration of Malondialdehyde(MDA) and Glutathione(GSH) in blood plasma. The birds were randomly divided in to five equal treatments with three replicate (14 hens+ 2 cocks) each, and were housed in floor pens . Treatments (1)received the basal diet (control). Treatment 2 and3 received the basal diet supplemented with ginger at the levels (0.25&0.50)% for each respectively , and Treatment 4 and5 received the basal diet supplemented with thyme at the levels (0.25&0.50)% for each respectively.

The results obtained could be summarized as follows :

1. Addition of ginger and thyme powders (T2,T3,T4andT5) resulted significant ($P<0.05$) increase in EN by(4.81 , 10.65 , 4.35 and 4.58)% and EM g/ egg / bird / day , and EW by(1.51 , 3.74 , 1.83 and 4.64) g /egg respectively compared with the control group .
2. No treatment effects ($P<0.05$) were found in regards to feed consumption g/ bird / day, however feed conversion ratio was significantly enhanced by basal diets supplemented with ginger or thyme powders at ratio (0.25&0.50)% as compared with the control group .
3. The results showed improvements in fertility , total hatch and hatch of fertile eggs ($P<0.05$) when (0.25&0.50)% of ginger or thyme powders was added to the diets compared to the control group .

4. The highest values of MDA and the lowest values of GSM was recorded by control group compared to the others treatments .

In conclusion supplementation of ginger or thyme at rate 0.50% to the diet during laying period increased egg production and improved percentage of fertility and hatchability in broiler breeder chickens .