



### Effect of soy isoflavones on growth performance and some carcass characteristics in young broiler chicks

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**Objectives:** Soybean isoflavones (ISF) possess weak estrogenic and antiestrogenic activities. They exist in conjugated or unconjugated (aglycone) forms; the aglycone ISF forms are Daidzein, Genistein, and Glycitein. Isoflavones have antioxidant activity and can affect immune system activity and fat deposition of carcass as well. There are limited reports regarding these components of soybean on broiler chicks. Hence, this study was conducted to examine if supplemental soy ISF in the diet could affect on growth performance and some traits of carcass including relative weights of immune and digestive systems' organs.

**Materials & Methods:** A commercial soybean isoflavone (ISF) product was purchased and supplemented with 0, 25, 50 and 100 mg of ISF/kg of diets. Two hundred and forty as-hatched day old Ross 308 chicks were allocated to 4 treatments with 3 replicates and 20 birds in each using a completely randomized design for a period of 3 weeks. Body weight and feed consumption were recorded weekly and at 21 day, two birds from each pen (one male and one female) were selected and euthanized by CO<sub>2</sub> asphyxiation, then the organs eviscerated and weighed. The collected data were analyzed by GLM procedure of SAS.

**Results & Conclusion:** According to the results, during the first week, dietary supplementation with 25, 50 or 100 mg of ISF/kg had no significant effect on feed intake, weight gain and feed conversion ratio (FCR). However, addition of 100 mg of ISF/kg of diet significantly decreased FCR and increased weight gain of the chicks in the period of 0-14 days of age ( $P < 0.05$ ). Weight gain and FCR of the chicks were highly affected by all levels of ISF and improve during 0-21 days ( $P < 0.0001$ ). Among the studied digestive organ weights, only relative weight of pancreas decreased due to addition of 100 and 25 mg of ISF/kg of diet ( $P < 0.01$ ). Addition of ISF levels had no significant effect on spleen, bursa of fabricius, breast and thigh weights. In conclusion, the study showed that ISF supplementation improved weight gain and feed conversion ratio of the chicks. The least dose of ISF (25 mg/kg diet) is recommended to get the beneficial effects on chick's performance.

**Keywords:** Isoflavone, Soybean, Performance, Carcass, Broiler Chicks

### Concurrent infestation with *Dermanyssus gallinae* and *Menopon gallinae*

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**Objectives:** *Dermanyssus gallinae*, the cosmopolite poultry red mite, is an economically important ectoparasite of domesticated fowl. It can cause reduced egg production, anemia and in severe cases, death. *Menopon gallinae* is found in the shaft feathers of birds. This louse can lead to weight loss and decreased egg production. Extremely heavy infestation can kill the poultry. Concurrent infestation with *Dermanyssus gallinae* and *Menopon gallinae* in a commercial laying chicken flock is presented here.

**Materials & Methods:** On October 2011, cases from a commercial laying flock with the history of reduced egg production at the age of 52 weeks were presented to the Veterinary Clinic, Faculty of Veterinary Medicine, Razi University. On clinical examination, the affected birds showed pale combs and heavy infestation with external parasites. Samples of external parasites from the body of infected bird and houses were collected for identification. Blood samples of 10 affected layers were collected for hematology. Hen-day production was recorded since 3 weeks before infestation until 4 weeks post treatment with carbaryl.

**Results & Conclusion:** Ectoparasites were morphologically diagnosed as *Dermanyssus gallinae* and *Menopon gallinae*. Hematological indices compared to reference values, showed the presence of mild anemia in a few affected layers, but mean PCV (30.5) was within the normal range. Birds, houses and all facilities were sprayed twice with carbaryl (sevinR), with the interval of one week, as recommended by the manufacturer. Following the treatment, there was 2% increase in egg production based on Hen-day production, and external parasites could not be seen on the birds and in the houses. As the farm was treated immediately, severe anemia could not occur. Based on obtained results, carbaryl can eliminate concurrent infestation of commercial layers with *Dermanyssus gallinae* and *Menopon gallinae*.

**Keywords:** *Menopon gallinae*, *Dermanyssus gallinae*, Laying Hen, Anemia