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[Iran (Islamic Republic of)]

### Effect of Emulsifiers and Saturated Fats on Growth Performance, Carcass Characteristic and Nutrient Digestibility of Broiler Chickens

Hassan Kermanshahi (1), Azam Zeinali (2), Nazar Afzali (3) and Abolghasem Golian (4)

(1, 2, 4) Department of Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran;

(3) Department of Animal Science, Faculty of Agricultural Sciences, University of Birjand, Birjand, Iran

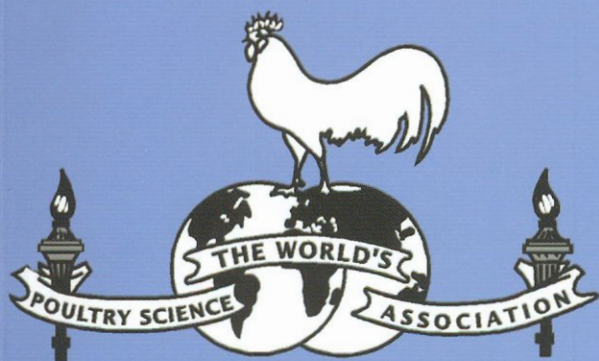
Corresponding author: [hassbird@yahoo.com](mailto:hassbird@yahoo.com)

An experiment was concluded to study the effect of emulsifiers and saturated fatty acids on growth performance, carcass characteristic and nutrient digestibility of broiler chickens. In a complete randomized design, 480 day-old Ross broiler chickens were randomly divided into 12 treatment groups, each in four replicates of 10 chicks per replicate. In this experiment, two fat sources (Animal fat as tallow, T and vegetable fat powder as ERP10TM, E) at a level of 5% each and two emulsifiers (Lecithin, L and Propylene glycol, PG) at 2 or 4 % dietary fat replacement were added to make 8 rations. Also, a mixture of 2.5% T and 2.5% E was blended with either L or PG at 2 or 4% dietary fat replacement to make 4 additional treatments. At the end of 3 and 6 weeks of the trial, carcass characteristics were measured. Chromic oxide was used for nutrient digestibility measurement. At week 2-3, L or PG increased feed intake (FI) when added to either T or E. FI decreased when the combination of T+E used with PG or L ( $P < 0.05$ ). The same trend was seen at other periods. Diet with 2.5% T + 2.5% E + 4% replaced L with T or E had the highest body weight and the lowest FI and feed conversion ratio. At week 3, fat digestibility was affected by experimental diets ( $P < 0.05$ ). At week 6, the highest nutrient digestibility observed in the diet with 2.5% T + 2.5% E + 4% L replaced with fat sources. Mixture of the two fat sources showed better effect on broiler performance. In conclusion, supplementation of the diets with 4% L was more effective than that of PG along with the mixture of two fat sources, T and E.

Keywords: Lecithin, Propylene glycol, "Tallow, Digestibility, Boiler chickens

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ABSTRACTS

[01-03]: Poultry Nutrition 1 (ID: 110042)

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### **Effect of Acidifiers and Saturated Fat Sources on Performance, Carcass Characteristic and Nutrient Digestibility of Broiler Chickens**

**Hassan Kermanshahi (1), Azam Zeinali (2), Nazar Afzali (3) and Abolghasem Golian (4)**

(1, 2, 4) Department of Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran;

(3) Department of Animal Science, Faculty of Agricultural Sciences, University of Birjand, Birjand, Iran

*Corresponding author: hassbird@yahoo.com*

The aim of this study was to evaluate the effect of acidifiers and saturated fat sources on performance, carcass characteristic and nutrient digestibility of broiler chickens. In a complete randomized design, 480 day-old Ross broiler chickens were randomly divided into 12 treatment groups, each in four replicates of 10 chicks per replicate. Two fat sources (Animal fat as tallow, T and vegetable fat powder as ERP10TM, E) at a level of 5% each and two acidifiers in powder form (a brand name of mixture of tri, di, and mono butyrine, C4 and citric acid, CA) at 0.15 and 0.30% of C4 and 0.5 and 1% of CA were used to replace fat sources to make 8 rations. The other 4 diets were prepared using a mixture of 2.5% T and 2.5% E blended with either C4 or CA at the above mentioned fat replacement levels of each acidifier. Results showed that average live body weight numerically was higher in chickens fed diet containing mixture of two fat sources, T+E and 1.0% CA. Supplementation of 0.3 % C4 to the diet containing E decreased feed intake ( $P < 0.05$ ). The lowest feed to gain ratio was obtained when two fat sources used with C4 or CA at 15-21 days of age ( $P < 0.05$ ). Nutrient digestibility improved when the two fat sources were mixed together and 0.3% C4 and 1.0% CA partly replaced these fat sources. In conclusion, the mixture of T+E along with 0.3% C4 or 1.0% CA manifested synergistic effects and improved broiler performance and nutrient digestibility.

**Keywords:** Fat sources, acidifiers, performance, digestibility, broilers