

Summary of the DVSc thesis No 12482, Faculty of Veterinary Medicine, Urmia University.

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Title of thesis: Comparison of the expression of *Myogenic* genes in Arian broiler Chickens with Ross 308 and Cobb 500

Summary:

The aim of current investigation was to study the growth performance, carcass traits, meat quality and expression profile of Myostatin (*MSTN*), Insulin-like growth hormone type I (*IGF-I*), Myogenin (*MyoG*) and Myogenic regulatory factor 4 (*MRF4*) genes in three commercial broiler strains including Ross 308 (Ross), Cobb 500 (Cobb), and Arian (Arian). A total of 240 one-day-old chicks representing the three broiler strains (80 per strain) were reared under an equalized standard management condition for six weeks. Broiler performance, organ weights, meat quality, and the expression level of the myogenic genes in the pectoral muscle were investigated. The lowest body weight, the lowest feed intake, the lowest weight gain and highest feed conversion ratio (FCR) was observed for Arian at the end of the study ($p < 0.05$). The meat quality was similar between strains ($p > 0.05$). The *IGF-I* expression level was significantly higher at 42 days of age in Cobb compared to Ross and Arian ($p < 0.001$). The *MRF4* expression level was significantly higher at 28 days of age in Cobb compared to Ross ($p < 0.001$). The *MyoG* expression level was significantly lower in Arian compared to Cobb at 42 days of age ($p < 0.05$). Furthermore, the *MSTN* expression level was significantly lower in Cobb compared to Ross and Arian at 42 days of age ($p < 0.05$). The remarkable differences in gene expression levels at the end of the rearing period was supported by higher growth performance and body weight of Cobb compared to Ross and Arian strain. The finding of current study will conveniently help to assess the performance of these broiler strains under similar rearing condition.

Keywords: Broiler chicken, IGF-I, MRF4, Myogenin, Myostatin