



Myostatin mRNA expression and its association with body weight and carcass traits in Yunnan Wuding chicken

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ABSTRACT. Myostatin (*MSTN*) is expressed in the myotome and developing skeletal muscles, and acts to regulate the number of muscle fibers. Wuding chicken large body, developed muscle, high disease resistance, and tender, delicious meat, and are not selected for fast growth. Broiler chickens (Avian broiler) are selected for fast growth and have a large body size and high muscle mass. Here, 240 one-day-old chickens (120 Wuding chickens and 120 broilers) were examined. Twenty chickens from each breed were sacrificed at days 1, 30, 60, 90,

120, and 150. Breast and leg muscle samples were collected within 20 min of sacrifice to investigate the effects of *MSTN* gene expression on growth performance and carcass traits. Body weight, carcass traits, and skeletal muscle mass in Wuding chickens were significantly ($P < 0.05$) lower than those in broiler chickens at all time points. Breast muscle *MSTN* mRNA was lower in Wuding chickens than in broilers before day 30 ($P < 0.05$). After day 30, breast muscle *MSTN* expression was higher in Wuding chicken than in broilers ($P < 0.05$). Leg muscle *MSTN* mRNA expression was higher in Wuding chicken than in broilers at all ages except for day 60 ($P < 0.05$). Correlation analysis revealed that breast muscle *MSTN* expression has a greater effect in slow growing Wuding chickens than in the fast growing broilers. In contrast, leg muscle *MSTN* mRNA level has a greater effect in broilers than in Wuding chickens. *MSTN* regulates growth performance and carcass traits in chickens.

Key words: Wuding Chicken; Myostatin gene; Body weight; Carcass traits