



Carcass and Meat Traits of Myotonic and Savannah Kid Goats

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Objectives

Myotonic goats, also known as “fainting” goats, exhibit signs of inherited Myotonia congenita. Myotonia is characterized by muscle fiber membrane hyperexcitability due to a mutation in the gene that controls voltage dependent ion channel functions. This condition results in muscle tension and a fainting reflex and so could have an effect on the carcasses and meat quality. The objective of this research was to compare carcass and goat meat properties of Myotonic goats and non-myotonic goats.

Materials and Methods

Twenty-three goats (9 Myotonic and 14 Savannah) between 8 and 9 mo. of age were slaughtered using Halal methods. After chilling for 24 h at 2.5°C, carcasses were evaluated, fabricated and their right *Semimembranosus* was removed, weighed and vacuum packaged. The *Semimembranosus* muscles were stored at 3.3°C for 3 d before weighing and oven cooking to 75°C. Excess juices were drained after cooking and the muscles were chilled to 7°C before taking three core samples (1.25 cm) for Warner-Bratzler shear force. The data was analyzed using SAS 9.4. The means were separated using an ANOVA with a Tukey test and significance was determined at $P < 0.05$.

Results

Myotonic kid goats were smaller ($P < 0.05$), with average live weight (overnight shrink) of 19.76 kg and average hot carcass weight (HCW) of 9.58 kg compared to Savannah average live weight of 34.47 kg and HCW of 17.64 kg. The average dressing percentages for the Myotonic goats of 48.3 and for the Savannah goats of 50.8 were not different ($P = 0.09$). Carcass conformation scores of 237 for Myotonic carcasses and 208 for Savannah carcasses were not different ($P = 0.45$), but fat scores of 2.2 and kph of 4.2% in Savannah carcasses were higher ($P = 0.00$ and $P = 0.01$, respectively) than in Myotonic carcasses (0.89 and 2.5%). Boneless lean yields of the four major cuts (shoulder, arm, back, leg) were not different ($P = 0.47$) for Savannah (20.3%) than Myotonic (21.3%) goats. *Semimembranosus* weights before and after cooking and cooking yields were lower ($P = 0.00$) with Myotonic goats (0.23 kg, 0.14 kg, 60.3%) than Savannah goats (0.38 kg, 0.25 kg, 66.1%). There were no differences ($P = 0.18$) in core sample shear forces between *Semimembranosus* core samples from Myotonic (7.73g) and Savannah (6.87g) kid goats.

Conclusion

These results indicated that there were no advantages in productivity, yield, or meat quality traits of Myotonic kid goats over Savannah kid goats.