



Meat Goat Performance, Carcass Traits, and Meat Characteristics of Kid Meat Goats Supplemented with Sunn Hemp or Concentrates on Pasture

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Keywords: carcass traits, goat, shear force, sunn hemp
Meat and Muscle Biology 3(2):26

Objectives

Feed is a large input cost to a goat operation (Gillespie et al., 2013) so the optimal time to supplement pasture grazing impacts the economic return on the feed investment. The objective of this study was to compare growth, carcass traits, and goat meat properties of weaned kid goats on pasture with access to sunn hemp followed by concentrate feed 50 d prior to slaughter or supplementation with concentrates and switching to sunn hemp 50 d prior to slaughter.

Materials and Methods

Savanna ($n = 23$) and Savanna-Kiko ($n = 14$) kid meat goats from the Louisiana State University meat goat herd were ranked by weight within each breed into groups of the four heaviest goats, next four heaviest goats and continuing until all goats were assigned into four groups. The two treatments were sunn hemp and native pasture or native pasture supplemented with 16% crude protein feed daily at 3% of the average group body weight with two replications of each treatment. After 50 d, the animals were switched to the opposite treatment. Goats were weighed weekly and linear dimensions were measured prior to overnight fasting and humane slaughter at Day 100 at an average live weight of 27.2 kg. Temperature and pH of the *M. Semimembranosus* were measured after hide removal and 1 h, 3 h and 24 h after stunning. Carcasses were chilled overnight at 2°C before determination of carcass characteristics, the *M. Longissimus dorsi* area and body wall thickness at the 13th thoracic vertebrae, and

L*, a*, and b* color of the *M. Rectus abdominis* flank muscle and *M. Longissimus dorsi*. Right sides were fabricated into USDA IMPS food service style cuts with an additional transverse cut between the fourth and fifth ribs. Consistent with previous experiments, *M. Semimembranosus* muscles were vacuum packaged and held at 4°C for 7 d before grilling on a conveyor oven to an internal temperature of 75°C. Cook yield was determined as cooked weight divided by raw weight. Three 1.27-cm cores were removed parallel to the muscle grain for Warner-Bratzler shear force. Data were analyzed with effects of treatment, breed, replication, and interactions by R-studio aov function with separation of least squares means and significance set at $P < 0.05$.

Results

Savannah goats were heavier than Savannah-Kiko goats through the 100-d trial and finished on concentrate compared with those finished on sunn hemp, but average daily gain was not different ($P > 0.05$) with feed or breed. The only difference among the carcass traits were dressing percentages of 50.81% with the concentrate and 48.13% with sunn hemp ($P < 0.05$). Boneless lean yield and shear force were not different ($P > 0.05$) with treatment or breed.

Conclusion

The minor differences in results did not clearly distinguish between the supplementation methods to improve growth, carcass traits, or meat characteristics of the two types of kid meat goats.