

Carcase characteristics and meat quality assessments in goats subjected to slaughter without stunning and slaughter following different methods of electrical stunning

ABSTRACT

The study examined meat quality and carcass haemorrhage in goats subjected to different methods of pre-slaughter electrical stunning or slaughtered without stunning. Thirty-two Boer crossbred bucks were randomly assigned to low-frequency head-only (LFHO; 1 A for 3 s at a frequency of 50 Hz), low-frequency head-to-back (LFHB; 1 A for 3 s at a frequency of 50 Hz) or high-frequency head-to-back (HFHB; 1 A for 3 s at a frequency of 850 Hz) pre-slaughter electrical stunning or slaughter without stunning (SWS). All the 32 animals were bled to drain excess blood from the carcass. The slaughter was performed by a licenced slaughter man by severing carotid artery, jugular vein, trachea and oesophagus. At 12 h post-mortem, LFHO, LFHB and HFHB had lower ($p < .05$) glycogen and higher lactate and glycolytic potential values than SWS. A faster ($p < .05$) rate of pH decline was found in LFHO, LFHB and HFHB compared to SWS. No physicochemical parameters except cooking loss differed between treatments. Cooking loss was higher ($p < .05$) in LFHO, LFHB and HFHB compared to SWS at 7 and 14 d post-mortem. Incidences of carcass haemorrhages in electrically stunned goats were higher than SWS. Nonetheless, HFHB had lower ($p < .05$) haemorrhages than LFHB and LFHO. Electrical stunning prior slaughter increased carcass haemorrhages and cooking loss but did not affect other meat quality traits in goats.

Keyword: Current frequency; Electrical stunning; Goats; Haemorrhage; Meat quality