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Carcass traits of sheep grazed crop-livestock system rangeland in the Caatinga biome

Anderson da Silva Sales Torres[1], Arthur Lucas Júlio Silva[1], Anderson José Braz Barbosa[1], Josefa Juliana Alves Cariri[1], Claudenilde de Jesus Pinheiro Costa[2], Evaristo Jorge Oliveira de Souza [1]

[1]Universidade Federal Rural de Pernambuco, Serra Talhada/Pernambuco, Brasil; [2] Universidade Federal Rural de Pernambuco, Recife/Pernambuco, Brasil. *bebelsilvasales@gmail.com

Crop-livestock system emerges as a solution to increase productivity in the semi-arid ecosystem. Thus, the aim of the present study was to evaluate the carcass traits of sheep grazed crop-livestock system rangeland in the Caatinga biome. The experimental period was carried out over two subsequent years (2022 and 2023). The experiment was conducted at the Federal Rural University of Pernambuco, Serra Talhada Academic Unit, in a thinned Caatinga site composed of Mororó tree (*Bauhinia cheilantha* Steud Bong) and enriched with Buffel grass (*Cenchrus ciliaris* L.) and Urochloa grass (*Urochloa mosambicensis* Salm-Dyck). The treatments were three crop-livestock systems implanted in the Caatinga, comprised of the sheep livestock integrated with (i) bean crop, (ii) maize crop, and (iii) herb-cotton crop. The control treatment was composed of sole Caatinga rangeland. Twenty non-castrated male lambs (Santa Inês × Dorper crossbreed) aged six months old were used in the study, and they had an initial average body weight (BW) of 24.64 ± 2.95 kg. The experimental design utilized was a completely randomized design with four crop-livestock systems and five animals per treatment were utilized. All variables were subjected to the analysis of variance followed by the Tukey test, using the GLM procedure of Statistical Analysis Systems. At the end of the experiment, the sheep were slaughtered (after a solid-food deprivation period of 16 h). Animals were weighed to obtain the slaughtered BW (SBW) Pre-slaughter procedures complied with good animal welfare practices and the slaughter was carried out conforming the Regulation of Industrial and Sanitary Inspection of Animal Products. The carcass was then skinned and gutted, the head was removed (at the atlanto-occipital joint), and removed (at the carpal and tarsometatarsal joints) to obtain the hot carcass weight (HCW) including the kidney and renal pelvic fat. Subsequently, the carcasses were cooled in a cold chamber at 4°C for 24h, after which the cold carcass weight (CCW) was recorded, in cluding the kidney and renal pelvic fat, which were subtracted to determine the hot (HCW) and cold (CCW) carcass weights. The hot carcass yield (HCY) was determined by the equation (HCY=HCW/ SBW×100), the biological yield (BY(%)=HCW/SBW×100) and cold carcass yield (CCY(%)=CCW/SBW×100). The integrated systems did not significantly affect the HCY, CCY, and BY ($P>0.05$). However, crop-livestock system resulted in greater ($P<0.05$) HCW and CCW. It is recommended crop-livestock system in the Caatinga biome to improve the carcass traits of sheep.

Keywords: biological yield; carcass weight; lamb; semi-arid ecosystem

Animal Experimentation Ethics Committee of the Federal Rural University of Pernambuco (approval no. 2436310322).

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