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Scientific Article

Characteristics of the carcass of young collared peccary (*Pecari Tajacu* Linnaeus, 1758) reared in captivity

Características da carcaça de catetos (*Pecari Tajacu* Linnaeus, 1758) jovens criados em cativeiro

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ABSTRACT - The collared peccary has potential for meat and leather production. Its production is a sustainable and profitable alternative to traditional livestock. The objective was to evaluate the weights and carcass yields of young collared peccaries and their morphometric characteristics while considering the sex factor. We used 12 collared peccaries, six males and six females, with an initial average weight of 10.8 ±1.07 kg and 156 ±11 days of age, fed with pig feed with 18% crude protein and fruits and vegetables. After slaughter, the carcasses were kept in a cold room at 4 °C for 24 hours. Morphometric evaluations of the carcasses were performed, such as external (ECL) and internal (ICL) carcass length, croup (CW) and thorax (TW) width, leg length (LL), and thorax depth (TD), and the carcass (CCI) and leg (LCI) compactness indices were calculated. Body weight at slaughter (BWS), empty body weight (EBW), hot (HCW) and cold (CCW) carcass weight, hot (HCY) and cold (CCY) carcass yield, pH, temperature, cooling loss (CL), loin eye area (LEA), and commercial cutting yields were estimated. There was a difference in LCI between sexes (P<0.05), with males presenting a higher proportion of muscles. BWS, EBW, and CCW presented differences between sexes (P<0.05), with males being heavier than females. Although there are no significant differences to qualify one sex or the other for slaughter, the characteristics and yields were satisfactory, resulting in a good quality final product.

Keywords: Collared peccary. Performance. Fat. Production. Yield.

RESUMO - O cateto é uma espécie com potencial para produção de carne e couro, sendo uma alternativa sustentável e rentável à pecuária tradicional. Objetivou-se avaliar os pesos e rendimentos de carcaça de catetos jovens e suas características morfométricas levando em consideração o fator sexo. Foram utilizados 12 catetos, sendo seis machos e seis fêmeas, com peso médio inicial de 10,8 ±1,07 kg e 156 ±11 dias de idade, alimentados com ração para suínos, com 18% de proteína bruta, além de frutas e verduras. Após o abate, as carcaças foram mantidas em uma câmara frigorífica a 4°C, por 24 horas. Foram realizadas avaliações morfométricas das carcaças como: comprimento externo e interno da carcaça, largura da garupa e do tórax, comprimento da perna, profundidade do tórax e calculados os índices de compacidade da carcaça (ICC) e da perna (ICP). Foram estimados o peso corporal ao abate (PCA), peso do corpo vazio (PCVZ), peso de carcaça quente e fria (PCF), rendimento de carcaça quente e fria, pH, temperatura, perda por resfriamento, área de olho de lombo e os rendimentos de cortes comerciais. Observou-se diferença no ICP entre os sexos (P<0,05), com os machos apresentando maior proporção de músculos. Para as variáveis PCA, PCVZ e PCF, também houve diferença entre os sexos (P<0,05), com os machos sendo mais pesados que as fêmeas. Embora não haja diferenças significativas para qualificar um sexo ou outro para o abate, as características e rendimentos foram satisfatórios, resultando em um produto final de boa qualidade.

Palavras-chave: Caititu. Desempenho. Gordura. Produção. Rendimentos.

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INTRODUCTION

Wildlife is an important source of animal protein for populations that have not intensified agricultural activities. Some wild species can contribute to generating products such as meat and leather, competing in production cost with domestic animals, and are considered renewable sources of highly profitable products (ODA et al., 2004).

In this case, the collared peccary (*Pecari tajacu*) is a species of great zootechnical potential for meat and leather production, as it easily adapts to captivity and consumes various foods. Its commercial breeding as a wild species in captivity is provided for in legislation by the Brazilian Institute of the Environment and Renewable Natural Resources – IBAMA under regulation IN 169/2008 (BRASIL, 2008).

Known as the bush pig or caititu, the collared peccary is listed in the order Artiodactyla and family Tayassuidae. Geographically, it covers territories from North to South America and can be found in all biomes of the Brazilian territory (TIEPOLO; TOMAS, 2011).

In recent decades, the consumer market has been well receptive to bushmeat consumption, both domestically and from abroad (ODA et al., 2004). Although there is an acceptance of this market concerning the consumption of

food from wildlife, there are still few studies on the quality of meat and carcasses (ALBUQUERQUE et al., 2009). Another factor contributing to the scarcity of studies on bushmeat, including collared peccary meat, is the absence of a consolidated production chain in South America, despite demand and some commercial breeding (SANTOS MORAIS et al., 2022).

Thus, carcass evaluations gain importance in the production chain, as these bases help improve the desired final product, meat, and supply quality (CÉZAR; SOUSA, 2007). Sex, slaughter weight, age, diet, and species can influence carcass quality and sensory characteristics (GUERRERO et al., 2013).

Thus, this study aimed to evaluate the carcass characteristics, tissue composition, and weights and yields of cuts of meat of young males reared in captivity, considering the sex factor.

MATERIAL AND METHODS

Ethical considerations, animals, and experimental design

All experimental procedures were conducted following the guidelines established by the Ethics Committee on the Use of Animals for Research of the Universidade Federal de Campina Grande, under license number 65/2013, SISBIO/ ICMbio no. 36263-5, and Universidade Federal do Rio Grande do Norte no. 039.032/2017.

The experiment was conducted in two stages. The first took place at the Center for the Multiplication of Wild Animals (CEMAS) of the Universidade Federal Rural do Semi-Árido, in Mossoró-RN, where the experimental test and part of the data collection occurred. The second stage was conducted at the Health and Technology Center of the Universidade Federal de Campina Grande, in Patos-PB, where data collection and experimental analyses were completed.

We used 12 collared peccaries (6 males and 6 females) with a mean age of 5 months (156 ±11 days) and a mean initial weight of 10.8 ±1.07 kg, distributed in a completely randomized design with two treatments (males and females) and six replicates per treatment. The sample size was determined by considering the total population of the breeding center, which was composed of approximately 60 animals, so the 12 selected individuals represented about 20% of the stock. The nutritional management was employed according to what was offered in the routine of the farm, providing feed for pigs with crude protein level 18% and 3,300 kcal/kg of digestible energy, based on corn, soybean meal, wheat bran, vitamins and minerals, as well as seasonal fruits and vegetables (Table 1). The animals were reared in a semi-extensive system and allocated into 20x20m paddocks equipped with feeders and drinkers.

Table 1. Percentage composition of the ingredients and bromatology of the feed supplied to the CEMAS animals.

Items	Composition (%)
Crude protein	18.000
Crude fibre	3.556
Total phosphorus	0.560
Ether extract	3.724
Calcium	0.750
Digestible energy (kcal/kg)	3.300

Experimental procedures, slaughter, and sampling

The trial lasted 90 days and was carried out two months after birth. During this time, the animals were weaned and separated into stalls, following the nutritional management of the breeding center until they reached the slaughter period. Before slaughter, the animals were subjected to a 12-hour solid fasting and water diet. Before slaughter and shortly after the end of the fast, the animals were weighed to obtain the body weight at slaughter (BWS).

All slaughter procedures, morphometric measurements, and carcass yields were adapted from the methodology applied to goats according to Cézar and Sousa (2007), since there is no methodology applied to collared peccaries. In the slaughter procedure, the animals were desensitized by cerebral concussion, suspended by the pelvic limbs, and the jugular vein and carotid artery were bled to obtain blood, which was collected and weighed. After skinning and evisceration, we performed the section of the head (section in the atlanto-occipital joint) and extremities (section in the metacarpals and metatarsals).

The gastrointestinal tract (GIT) was weighed full and empty (EGIT) to obtain the weight of the gastrointestinal tract content (GITC), calculated using the equation GITC = [GIT – WGIT]. The bladder (B) was also weighed full and empty to estimate its weight and contents. Empty body weight was estimated by the formula, EBW = BWS- [(GIT - EGIT) + urine].

The carcasses were weighed to obtain the hot carcass weight (HCW). The hot carcass yield (HCY) was then calculated using the equation HCY% = HCW/BWS x 100. The pH and temperature were measured using a digital pH meter, with a penetration electrode model Testo 205® inserted into the *Longissimus lumborum* muscle. The measurements were performed at two moments, at 0h *post-mortem* and 24h *post-mortem* in the cold carcass.

The second stage followed in the carcass evaluation sector located at the Rural Health and Technology Center - UFCG, Patos-PB, where the carcasses were packed in plastic bags and transported to a cold room at 4 °C, where they remained hanging by the tendons of the leg (common calcaneus) for 24 hours. At the end of the cooling period, the carcasses were weighed to obtain the cold carcass weight (CCW) and then determined the weight loss by cooling (CL) using the formula CL% = HCW - CCW/HCW X 100 and cold carcass yield (CCY) using the formula CCY% = CCW/BWS x 100.

Morphometric measurements were performed with the

carcasses hanging by hooks: external carcass length (ECL) (distance between the base of the neck and the tail), croup width (CW) (maximum distance between the two trochants of both femurs), croup perimeter (CP) (perimeter around the croup passing over the two trochanters of each femur), thorax width (TW) (maximum distance from the ribs), internal carcass length (ICL) (maximum distance between the cranial edge of the ischio-pubic symphysis and the caudal edge of the first rib at its midpoint), the leg length (LL) (distance between the cranial edge of the ischio-pubic symphysis and to the bones of the first row of the tarso-metatarsal articular, by the inner side of the leg), and the thorax depth (TD) (maximum distance between the sternum and the sixth dorsal thoracic vertebra).

Carcass compactness indices (CCI) were also calculated, expressed by (CCI kg/cm = CCW/ICL), and leg compactness indices (LCI), through the relationship between croup width and leg length, expressed by (LCI cm/cm = CW/ LL). A tape measure and a hypometer were used for the measurements.

After the morphometric measurements, the carcasses were sectioned in half, resulting in two half-carcasses, which were weighed individually. Then, the left half carcass was sectioned into six commercial cuts of meat, according to the standards proposed by Azerêdo (2016) for collared peccaries (*Pecari tajacu*), resulting in neck, shoulder, loin, breast, rib, and leg. The individual weights of each cut were recorded and, subsequently, the proportion of each cut from the left half -carcass in relation to its reconstituted weight was calculated to obtain the yield of commercial cuts.

In the left half-carcass, a cross-section was made between the 12th and 13th ribs, exposing the cross-section of the *Longissimus dorsi* muscle. Subsequently, a transparent film was placed on the surface, on which the contour of the muscle was traced to determine the area of the loin eye (LEA). The maximum width (A) and maximum depth (B) were measured using a ruler and later estimated by the formula [LEA = (A/2 x B/2) x R].

The left leg of each animal was vacuum-packed and frozen at -20 °C for tissue composition evaluation. The legs were gradually thawed for 24 hours at 4 ºC for dissection. The following tissue groups were separated using a scalpel, anatomical forceps, and scissors: subcutaneous fat (found between the skin and muscles), intermuscular fat (located between muscles), muscles (total weight after removal of all fat), bones (referring to all leg bones), and other tissues (lymph nodes, nerves, blood vessels, and tendons).

The weights and yields of the tissue groups were obtained after dissecting the leg tissues. The tissue percentage was calculated according to the reconstituted weight of the leg, later calculating the muscle:fat and muscle:bone ratios.

During the dissection, the leg muscularity index was estimated using the formula LMI = √(P5M/FL)/FL, where the P5M is represented by the weight of the five muscles (g) that surround the femur, namely: biceps femoris, semimembranosus, semitendinosus, quadriceps femoris, and adductor, and the femur length (FL; cm).

Statistical analysis

The experimental design was completely randomized with two treatments and six replicates per treatment. The following statistical model was used:

$$y_{ij} = \mu + \tau_i + \varepsilon_{ij,}$$

where: y_{ij} is the observed value of the studied characteristic, in the treatment i, and on replicate j; μ is the overall average of all observations in the experiment; τ_i is the effect of treatment i; and ε_{ij} is the error associated with the observation $y_{ij.}$

The data were submitted for analysis of variance (ANOVA), and the means were compared using the Tukey Test at the probability level of 0.05 using the SAS 9.1 statistical software (SAS Institute, Cary, NC, USA).

RESULTS AND DISCUSSION

Carcass characteristics

The analysis of the carcass characteristics of collared peccaries showed no significant differences between sexes (Table 2) for HCW, CCY, HCY, initial and final pH, initial and final temperature, and CL (P>0.05).

On the other hand, significant differences between sexes were observed for BWS, EBW, GITC, and CCW (P<0.05). Young male collared peccaries presented higher weights than females and ingested a greater volume of food, as verified by the gastrointestinal tract content.

A study conducted with capybara also found no difference in yields (PINHEIRO et al., 2007), corroborating our findings. This implies that males and females may have similar yields when slaughtered young under the same feeding conditions. Analyzing values found in adult collared peccaries, the CCY and HCW of 71.67% and 11,850 kg, respectively, were higher than those of this study, as expected, demonstrating a difference between ages. However, this difference was not observed in terms of sex (FIGUEIREDO, 2016).

Another species with differences between the sexes regarding BWS and CCW is goats, whose weights vary between 16 and 20 kg (MENEZES et al., 2009). These results show a higher body weight of males than females, a trend also observed in the cold carcass weight. However, Figueiredo (2016) found that BWS and CCW showed no significant differences between sexes when studying adult collared peccaries.

Although no significant difference between sexes was observed for HCY, the values obtained in the present study (62%) were higher than those found by Albuquerque et al. (2012) in adult collared peccaries supplemented with different levels of oil palm meal, presenting a HCY of 60.42%. Similarly, the results exceeded those reported by Silva et al. (2002) for adult male collared peccaries subjected to variations in crude protein levels, presenting a HCY value of 58.2%.

No significant difference (P>0.05) was observed for the HCY between males and females. However, HCY values were 62%, superior to those found for adult animals supplemented with different levels of palm oil meal, with yields of 60.42% (ALBUQUERQUE et al., 2012) and 58.2% for adult males submitted to different levels of crude protein (SILVA et al., 2002).

Table 2. Carcass characteristics of collared peccary (*Pecari tajacu*) reared in captivity.

Variables	Sex		EPM[f]	*P*-value
	Male	Female		
BWS (kg)	11.6[a]	10.0[b]	0.29	0.004
EBW (kg)	10.8[a]	9.50[b]	0.32	0.022
GITC (kg)	0.79[a]	0.49[b]	0.07	0.023
HCW (kg)	7.30	6.64	0.37	0.242
CCY (kg)	7.27[a]	6.27[b]	0.23	0.013
HCY (%)	62.80	62.4	0.59	0.678
CCY (%)	62.04	62.2	0.55	0.843
BY (%)	67.49	69.18	2.60	0.656
CL (%)	0.47	0.74	0.11	0.135
LEA (cm^2)	13.4[a]	11.7[b]	0.54	0.046
pH 0h	5.59	5.63	0.13	0.850
pH 24h	5.15	5.52	0.14	0.110
T (°C) 0h	37.3	37.5	0.28	0.691
T (°C) 24h	3.50	4.85	0.46	0.067

*Body weight at slaughter (BWS), empty body weight (EBW), gastrointestinal tract contents (GITC), hot carcass weight (HCW), cold carcass weight (CCW), hot carcass yield (HCY), cold carcass yield (CCY), biological yield (BY), cooling losses (CL), loin eye area (LEA), Temperature (T). *Standard error of the mean (SEM). **Different letters on the same line mean statistical difference between treatments (P<0.05).

The carcass yield of collared peccaries have been similar or higher in the literature when compared to other free -living wild artiodactyls (ALBUQUERQUE et al., 2012), such as *Alcelaphus buselaphuse Oryx beisa*, *Lama glama*, *Lama pacos*, *Lama guanicoe*, *Aepyceros melampus*, *Tragelaphus strepsiceros*, *Damaliscus dorcas phillipsi*, which indicates that male and female animals submitted to the same nutritional management conditions in confinement show the same development.

In addition, even at younger ages, young collared peccaries present a satisfactory carcass yield for the species, regardless of sex. Values lower than those obtained in this study were seen in adult white-lipped peccaries belonging to the same genus, with average yield values of 53.8% (RAMOS et al., 2009), and adult capybaras, with an average value of 51.3% (BRESSAN et al., 2002).

Compared to domestic species raised for meat production, the collared peccaries showed efficiency in carcass yield. This can be observed when analyzing the yield of adult sheep supplemented with mazoferm, which reached 46% (OLIVEIRA et al., 2017), a lower value than that recorded in the present study. Although they are distinct species, this comparison helps evaluate the productive potential of collared peccaries in commercial systems, showing that the yield of this wild species can be equivalent or even higher than that of domestic species.

On the other hand, pigs supplemented with different levels of cotton meal presented carcass yields higher than those found in our studies, reaching up to 77% (FERREIRA et al., 2019). However, it is worth mentioning that the animals in this study were not submitted to specific diets. This shows that collared peccaries have good results for the standards equated to other species, even without supplementation in their diet.

Sex did not influence (P>0.05) the substrate pH values at 0 and 24h post-mortem, presenting values within 5.5 and 5.8, which is considered a normal range (DELLA MALVA et al., 2016). This indicates that pre-slaughter management techniques were applied efficiently, avoiding animal stress.

The results corroborated with Bressan et al. (2004), who found no difference in pH between the sexes. We observed a pH variation of 5.1 in males and 5.5 in females. Sheep meat can be considered an average pH standard, around 5.6 for the species (OLIVEIRA et al., 2017).

Some facts can lead to a change in pH, such as stress, which alters glycogen stores, influencing the production of lactic acid post-mortem, which can reduce pH (LISBOA et al., 2010). The post-mortem pH observed in young collared peccary meat resembles pork, whose final pH reaches 5.3 (CALDARA et al., 2012).

When compared to the meat of wild species, capybara meat has a pH of 5.9 (BRESSAN et al., 2004; ODA et al., 2004), while white-lipped peccary meat has an average pH of 5.5 (RAMOS et al., 2009) and Figueiredo (2016) verified mean pH values of 5.7 for collared peccaries.

The values of cooling weight loss (CL) showed no difference between the sexes (P>0.05). However, the values can be considered satisfactory since Santa Inês sheep presented values between 2.71% and 3.43%, which is considered within the standard of the sheep breed (QUEIROZ et al., 2015; OLIVEIRA et al., 2017). As in white-lipped peccaries with a CL of 3.2% (RAMOS et al., 2009) and adult males with 6.43% (FIGUEIREDO, 2016), values are much lower in our studies.

The loss by cooling can be emphasized as an important characteristic in carcass assessment. The lower the values found, the better the indication of the carcass finish. Other important factors are a good distribution of fat, the adequate temperature of the cold room, which confers greater protection, as does the fat, uniformity during cooling, and that these carcasses are handled appropriately (CARVALHO et al., 2012). Thus, it can be inferred that the carcasses of young

collared peccaries have a good degree of finish.

LEA was different between the sexes (P<0.05), showing that males achieved higher indices than females, following characteristics related to performance such as body weight at slaughter, cold carcass weight, and the higher CCI found in males, indicating more significant muscle deposition.

Collared peccaries present values within the standards for traditional domestic species commercialized, such as whole male sheep slaughtered weighing more than 21 kg, with values between 12 and 13 cm^2 (QUEIROZ et al., 2015; OLIVEIRA et al., 2017) and male and female goats with slaughter weights between 16 and 20 kg, with averages of 7.57 cm^2 (MENEZES et al.,2009).

However, due to their age and development, young collared peccaries presented values below those found in adult collared peccaries with 24.30 cm^2 (FIGUEIREDO, 2016), adult capybaras weighing between 55 and 74 kg, with 35.53 cm^2 (BRESSAN et al., 2002), and pigs measuring 32.71 cm^2 and slaughtered weighing 79 kg (FERREIRA et al., 2019).

The results showed no significant difference between sexes (P>0.05) for ECL, ICL, LT, LG, LL, PT, and LCI measurements (Table 3). However, differences between sexes were observed in CCI (P<0.05), indicating that males express more muscle mass than females.

Few studies with animals of this species evaluate carcass characteristics and quality at the beginning of their young period (between 4 and 9 months). Thus, the findings were compared with adult animals of the same species and other wild and domestic species. However, it is worth noting that some parameters involving meat quality, such as age, sex, diet, genotype, slaughter weight, and behavior, can influence the specific characteristics of meat and carcass (SILVA; PIRES, 2000; GUERRERO et al., 2013).

Table 3. Carcass morphometry of collared peccary (*Pecari tajacu*) reared in captivity.

Variables	Sex		EPM[f]	*P*-value
	Male	Female		
ECL (cm)	37.5	37.0	0.792	0.7179
ICL (cm)	37.7	36.5	0.531	0.1793
Chest width (cm)	11.0	10.9	0.286	0.6892
Croup width (cm)	12.2	11.6	0.191	0.0571
Perimeter of the croup	42.3	43.5	1.866	0.3044
Chest depth (cm)	18.5	17.5	0.483	0.1739
Leg length (cm)	26.5	25.7	0.485	0.2518
CCI (kg/cm)	0.19[a]	0.17[b]	0.004	0.0091
LCI (cm/cm)	0.46	0.45	0.009	0.5275

External carcass length (ECL), Internal carcass length (ICL), Carcass compactness index (CCI), and Leg compactness Index (LCI). Standard error of the mean (SEM). **Different letters on the same line mean statistical difference between treatments (P<0.05).

Figueiredo (2016) found a difference between the sexes for ECL and LL when analyzing adult collared peccaries, with averages of 45.00 cm and 50.50 cm for ECL and 35.91 cm and 29.75 cm for LL, in males and females, respectively. These results differ from those found in the present study, which found no significant difference between the sexes. This absence of variation can be attributed to the fact that young animals are still in the growth phase, presenting similar development until they reach physiological maturity. This pattern is corroborated by Rosa et al. (2005), who observed an isometric muscle growth in some meat cuts between males and females of the Texel lamb breed.

The hormonal factor may also be correlated since testosterone levels in whole males can directly influence their characteristics, such as greater muscle fiber size, high feed conversion rate, and greater muscle deposition in the carcass (LOPES, 2010).

Studies with adult collared peccaries presented mean values greater than 37.5 cm, found in this study, in which whole male animals in the finishing phase, fed with diets based on palm oil meal, presented an average of up to 61.7 cm of external carcass length (ALBUQUERQUE et al., 2012).

Compared with domestic species, such as goats and sheep, an average of 55.44 cm is observed for animals over 1 year of age and of different genotypes reared in Caatinga pastures (FERREIRA et al., 2016). Goats of various ages and sexes have an average of 47.64 cm of ECL (MENEZES et al., 2009). This shows that wild species kept in the same diet conditions in relation to domestic ones can be equated in terms of development.

The CCI of male collared peccaries was higher in relation to females, 0.191, 0.171 cm/kg (P<0.05), respectively, corroborating studies in adult male and female collared peccaries reared in a semi-extensive system, in which this difference in index between the sexes was observed (PINHEIRO et al., 2007).

These indices may indicate a proximity with reports in domestic animals, as in the case of adult Santa Inês sheep supplemented with mazoferm (OLIVEIRA et al., 2017), with indices of 0.24 to 0.25 kg/cm, and in Santa Inês lambs, with values between 0.22 and 0.28 kg/cm (QUEIROZ et al., 2015).

Although there was no difference between sexes (P>0.05), the LCI indices were quite satisfactory, with 0.45 cm/cm, when compared to domestic species, such as adult sheep, which had values higher than 0.24 cm/cm (OLIVEIRA et al., 2017) and sheep and goats, of different ages and genotypes, with 0.42 cm/cm (MENEZES et al., 2009).

Commercial cut weights and yields

The weights of the cuts (Table 4) referring to the shoulder, neck, rib, and leg presented differences between

sexes (P<0.05), showing that the musculature of males may have a more significant and earlier development in some regions of the body. This occurs because sex can alter the growth of some structures, such as muscle, fat, and bones, causing different developmental rhythms (ROSA et al., 2005). Also, cuts such as the shoulder and leg have higher weights in relation to other cuts, but that decreases with the increase in carcass weight (CÉZAR; SOUSA, 2007).

However, the breast and loin cuts did not differ between sexes (P>0.05). Figueiredo (2016) observed no difference between cuts in a study with adult collared peccaries. This was attributed to the animals' weight similarity, in contrast to what was verified in our study.

Table 4. Weights and income from commercial cuts of young collared peccary (*Pecari tajacu*) reared in captivity.

Variables	Sex		EPM[f]	*P*-value
	Male	Female		
Weights (kg)				
Shoulder	0.66[a]	0.56[b]	0.02	0.005
Neck	0.43[a]	0.35[b]	0.02	0.045
Rib	0.60[a]	0.49[b]	0.02	0.004
Breast	0.39	0.34	0.02	0.228
Loin	0.45	0.39	0.02	0.126
Leg	1.10[a]	0.98[b]	0.03	0.030
Yields (%)				
Shoulder	18.2	17.8	0.47	0.609
Neck	11.7	11.3	0.45	0.521
Rib	16.4	15.7	0.46	0.311
Breast	10.6	11.0	0.40	0.513
Loin	12.5	12.5	0.45	0.985
Leg	30.3	31.4	0.46	0.133

*Standard error of the mean (SEM). **Different letters on the same line mean statistical difference between treatments (P<0.05).

Studies with goats showed that sex influenced the weight of the shoulder, neck, rib, and leg cuts through the influence of the weight at slaughter of male animals (MENEZES et al., 2009), corroborating this study with young males.

Although the cuts suffered an influence on their weights due to sex, it was found that no meat cuts (Table 4) suffered this influence (P>0.05) in relation to their yields. These values are similar to those of the white-lipped peccary species (RAMOS et al., 2009), which excels in some cuts, such as shank and loin, which are characterized as first cuts for their high muscle performance (CÉZAR; SOUSA, 2007).

Several studies have evaluated the percentage of leg yield in adult collared peccary, such as those conducted by Silva et al. (2002), who investigated different levels of protein in the diet, Albuquerque et al. (2012), who used supplementation with oil palm meal, and Figueiredo (2016). These studies reported 38.18%, 32.08%, and 24.70%, respectively. The results of the present study indicate that young collared peccaries have similar yields to those of supplemented adult animals. In some cases, they may exceed the values observed in pigs in the growth phase supplemented with cotton meal, which recorded a yield of 29.22% (FERREIRA et al., 2019).

Tissue composition of the leg

The variables resulting from the tissue composition of the leg (Table 5) showed no variations between the sexes regarding the weight of the leg, muscles, and fat of other tissues (P>0.05). However, a higher weight of the bones was observed in males compared to females (P<0.05), which corroborates studies conducted in Texel lambs, verifying the influence of sex on leg bone growth (ROSA et al., 2005), and Cézar and Sousa (2007), who explained that the order of growth follows with the formation bone tissue as primary, that is, earlier in relation to other tissues, such as muscle and adipose.

The muscle:bone and muscle:fat ratios showed no significant difference between sexes (P>0.05). However, they showed satisfactory values, which indicates a more substantial deposition of the musculature in the carcass. These ratios indicate good carcass quality since the carcass must have a high proportion of muscles, a low proportion of bones, and a due amount of fat, which guarantees a good juiciness and tenderness of the meat (MARQUES et al., 2013).

The leg muscularity index of young males (0.46) and females (0.47) is satisfactory compared to sheep, which presented values of 0.37 (SILVA et al., 2014) and 0,38 (OLIVEIRA et al., 2017). This index is a good reference for evaluating muscle composition in relation to fat and bone, reflecting muscle tissue development due to its correlation with the distribution and amount of mass in the carcass (OLIVEIRA et al., 2018).

Table 5. Tissue composition of the leg of young collared peccaries (*Pecari tajacu*) reared in captivity.

Variables	Treatments		EPM[f]	*P*-value
	Male	Female		
Tissue components (g)				
Leg	1097.0	98.0	37.14	0.055
Muscle	877.8	790.5	28.16	0.053
Bones	150.5[a]	135.3[b]	4.153	0.027
Fat	45.1	38.0	7.239	0.499
Other tissues	23.5	19.1	1.942	0.145
Yields (%)				
Total muscle	80.07	80.42	0.412	0.567
Total bone	13.77	13.81	0.440	0.952
Total fat	4.00	3.82	0.562	0.827
Other tissues	2.14[a]	1.94[a]	0.185	0.458
Ratios				
Muscle:bone	5.84[a]	5.84[a]	0.174	1.000
Muscle:fat	22.75[a]	22.87[a]	3.349	0.980
LMI	0.46[a]	0.47[a]	0.009	0.706

*Leg muscularity index (LMI). Standard error of the mean (SEM). **Different letters on the same line mean statistical difference between treatments (P<0.05).

CONCLUSION

The carcass characteristics of the young collared peccaries were satisfactory, with high musculature and low fat content. This indicates that slaughter from five months of age can result in optimal yields and an excellent-quality final product. These findings suggest that rearing young male and female collared peccaries in captivity is feasible and does not compromise their development. In addition, no significant differences between the sexes were observed, which reinforces the indifference regarding the choice of sex for slaughter.

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REFERENCES

ALBUQUERQUE, N. et al. Avaliação da carcaça e dos componentes não-carcaça de caititus (*Pecari tajacu*) alimentados com torta de dendê. **Archivos Latinoamericanos de Producción Animal**, 20: 55-60, 2012.

ALBUQUERQUE, N. I. et al. Propriedades da carne e perfil de ácidos graxos do pernil de catetos (*Tayassu tajacu*) alimentados com torta de babaçu (*Orbignya phalerata*). **Arquivo Brasileiro de Medicina Veterinária e Zootecnia**, 61: 1419-1427, 2009.

AZERÊDO, L. M. S. **Características morfológicas dos músculos nos diferentes cortes comerciais de carne de cateto (*Tayassu tajacu*) criados em cativeiro**. 2016. 58 f. Dissertação (Mestrado em Medicina Veterinária: Área de Concentração em Ciência e Saúde Animal) - Universidade Federal de Campina Grande, Patos, 2016.

BRASIL. Ministério do Meio Ambiente. **Instrução Normativa Nº 169/IBAMA**, de 20 de fevereiro de 2008. Brasília, 2008.

BRESSAN, M. C. et al. Influência do sexo e faixas de peso ao abate nas características físico-químicas da carne de capivara. **Food Science and Technology**, 24: 357-362, 2004.

BRESSAN, M. C. et al. Rendimento de carcaça e de cortes comerciais de capivaras (*Hydrochaeris hydrochaeris* L. 1766). **Ciência e Agrotecnologia**, 26: 1588-1593, 2002.

CALDARA, F. R. et al. Propriedades físicas e sensoriais da carne suína PSE. **Revista Brasileira de Saúde e Produção Animal**, 13: 815-824, 2012.

CARVALHO, S. et al. Características da carcaça de cordeiros alimentados com dietas contendo diferentes resíduos agroindustriais. **Agrarian**, 5: 409-416, 2012.

CÉZAR M. F; SOUSA W. H. **Carcaças ovinas e caprinas**: Obtenção, avaliação e classificação. 1. ed. Uberaba, MG: Agropecuária Tropical, 2007. 230 p.

DELLA MALVA, A. et al. Relationship between slaughtering age, nutritional and organoleptic properties of Altamurana lamb meat. **Small Ruminant Research**, 135: 39-45, 2016.

FERREIRA, R. C. et al. Biometria, morfometria e composição regional da carcaça de caprinos e ovinos de diferentes genótipos. **Revista Brasileira de Ciências Agrárias**, 11: 253-258, 2016.

FERREIRA, D. N. M. et al. Desempenho e características de carcaça de suínos em crescimento alimentados com torta de algodão e complexo enzimático. **Arquivo Brasileiro de Medicina Veterinária e Zootecnia**, 71: 1616-1622, 2019.

FIGUEIREDO, S. C. **Constituintes corporais comestíveis e não comestíveis de cateto (*Tayassu tajacu*, Linnaeus, 1758) criados em cativeiros no semiárido nordestino: efeito da idade e sexo**. 2016. 86 f. Tese (Doutorado em Medicina Veterinária: Área de Concentração em Ciência e Saúde Animal) – Universidade Federal de Campina Grande, Patos, 2016.

GUERRERO, A. et al. Some factors that affect ruminant meat quality: from the farm to the fork. Review. **Acta Scientiarum. Animal Sciences**, 35: 335-347, 2013.

LISBOA, A. C. C. et al. Avaliação da qualidade da carne de cabritos nativos terminados com dietas contendo feno de Maniçoba. **Revista Brasileira de Saúde e Produção Animal**, 11: 1046-1055, 2010.

LOPES, L. S. Aspectos fisiológicos e estruturais que influenciam o desenvolvimento do tecido muscular. **PUBVET**, 4: 830-836, 2010.

MARQUES, R. O. et al. Rendimentos de cortes, proporção tecidual da carcaça e composição centesimal da carne de caprinos jovens em função do grupo racial e do peso corporal de abate. **Arquivo Brasileiro de Medicina Veterinária e Zootecnia**, 65: 1561-1569, 2013.

MENEZES, J. J. L. D. et al. Efeitos do sexo, do grupo racial e da idade ao abate nas características de carcaça e maciez da carne de caprinos. **Revista Brasileira de Zootecnia**, 38: 1769 -1778. 2009.

ODA, S. H. et al. Efeito do método de abate e do sexo sobre a qualidade da carne de capivara (*Hydrochaeris hydrochareis*). **Food Science and Technology**, 24: 341-346, 2004.

OLIVEIRA, J. P. F. et al. Características de carcaça de ovinos Santa Inês alimentados com mazoferm substituindo o farelo de soja. **Revista Ciência Agronômica**, 48: 708-715, 2017.

OLIVEIRA, F. G. et al. Carcass characteristics of Santa Ines sheep with different biotypes and slaughtering weights. **Revista Brasileira de Saúde e Produção Animal**, 19: 347-359, 2018.

PINHEIRO, M. S. et al. Avaliação de carcaça de fêmeas e machos inteiros de capivara (*Hydrochaeris hydrochaeris*) criados em sistema semi-intensivo. **Asociación Latinoamericana de Producción Animal**, 15: 52-57. 2007.

QUEIROZ, L. O. et al. Características quantitativas da carcaça de cordeiros Santa Inês, abatidos com diferentes espessuras de gordura subcutânea. **Revista Brasileira de Saúde e Produção Animal**, 16: 712-722, 2015.

RAMOS, E. M. et al. Avaliação de características da carcaça e da qualidade da carne de queixada (*Tayassu pecari* [Link, 1795]). **Ciência e Agrotecnologia**, 33: 1734-1740, 2009.

ROSA, G. T. et al. Crescimento alométrico de osso, músculo e gordura em cortes da carcaça de cordeiros Texel segundo os métodos de alimentação e peso de abate. **Ciência Rural**, 35: 870-876, 2005.

SANTOS MORAIS, B. H. et al. Use of wildlife as an alternative protein source: Collared peccary meat. **Meat Science**, 192: 108895, 2022.

SILVA L. F.; PIRES C. C. Avaliações quantitativas e predição das proporções de osso, músculo e gordura da carcaça em ovinos. **Revista Brasileira de Zootecnia**, 29: 1253-1260, 2000.

SILVA, F. N. et al. Características da carcaça e análise químicobromatológica da carne de catetos (*Tayassu tajacu*) submetidos a quatro níveis de proteína bruta em condições de cativeiro. **Revista Caatinga**, 15: 57-60, 2002.

SILVA, N. V. et al. Características de carcaça de ovinos alimentados com subproduto da goiaba. **Archivos de zootecnia**, 63: 25-35, 2014.

TIEPOLO, L. M.; TOMAS W. M. Ordem Artiodactyla. In: REIS N. R. et al. **Mamíferos do Brasil**. 2. ed. Londrina, PR, 2011. 439 p.