CARCASS CHARACTERISTICS OF KANNIADU GOAT UNDER DIFFERENT SYSTEMS OF MANAGEMENT*

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Abstract

An experiment was conducted to evaluate the carcass characteristics of Kanniadu kids under different housing systems viz., intensive, semi-intensive and extensive system of rearing. Twenty-four weaned Kanniadu kids were selected at random and they were allotted to three different treatments, comprising of eight animals in each group. The dressing percentage of intensive and semi-intensively reared kids was significantly (P < 0.05) higher than those reared under intensive system. The primal cuts percentage did not differ significantly for leg, rack, neck and shoulder, breast and shank between systems. There was a significant (P <0.01) difference between systems for the loin. The meat percentage in carcass did not differ significantly between systems. For the bone and fat, there was a highly significant (P < 0.01) difference between systems. Kids reared under extensive system produced lean meat compared to other systems without any significant difference in meat yield.

Key words: *Intensive, semi-intensive, extensive system, carcass traits, Kanniadu goat.*

Goats play a vital role in the rural economy and form the potential resources for meat production in the rural livestock production of developing countries. Almost all the goats in Tamil Nadu are classified as non-descript/ feral goats with poor production potential. They are mainly reared for meat. Recently ICAR has given recognition for one goat breed popularly known as Kanniadu and which are the native breeds of southern districts of Tamil Nadu. Even though their distribution characteristics and production performance has been documented, carcass characteristics are not fully exploited especially under different management conditions. Hence the present study was conducted to compare the carcass characteristics of Kanniadu goat under three different systems of management.

Materials and Methods

Twenty four weaned Kanniadu kids were selected at random and they were allotted to three different treatments comprising of eight animals in each group.

The first group was maintained under intensive system with a floor space area of one square metre per animal in a covered shed. Inside the animal shed, provisions for hanging fodder, feeding and watering were made hygienically following standard managemental procedures. The animals in second group was reared under semi-intensive system in which provision of a covered area of one square metre and run with an open space of two square metre per animal was provided. The provisions for proper feeding and watering were made suitably. The third group was subjected to extensive system of rearing and

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they were housed only during the night in a covered shed with a floor space of one square metre per animal.

The kids reared under intensive and semi-intensive systems were fed with an equal amount of concentrates according to their body weight. In addition, kids were also fed with fodder and tree leaves *ad libitum*. Kids under extensive system of management were allowed to graze daily and they were not provided with any concentrate or additional supplementation of fodder. Deworming was carried out once in a month and dipping was done once in three months for all the animals during the experimental period. All the experimental animals were sacrificed at the end of the trial period. Data on live weight before slaughter and hot carcass weight were recorded individually for all groups to arrive at the dressing percentage.

The weighst of edible and non-edible offals were recorded and percentage arrived from its live weight. The weight of primal cuts and meat, bone and fat were separated from each carcass weighed and expressed as percentage of the carcass weight. Data obtained in the study were analysed statistically (Snedecor and Cochran, 1994).

Table . Carcass characteristics of Kanniadu goat under different housing systems

Parameters	Intensive	Semi-intensive	Extensive	`F' value
Dressing percentage	$45.17^{b} \pm 0.19$	$44.84^{b} \pm 0.49$	$39.60^{a} \pm 1.89$	4.602^{**}
Primal cuts (%)				
Leg	31.94 ± 0.19	32.54 ± 0.49	32.35 ± 0.18	1.04^{NS}
Loin	$15.43^{b} \pm 0.16$	$15.83^{b} \pm 0.36$	$13.60^{a} \pm 0.60$	8.61**
Rack	15.35 ± 0.14	15.74 ± 0.30	15.58 ± 0.08	0.96^{NS}
Neck and Shoulder	21.50 ± 0.54	21.03 ± 0.85	22.04 ± 0.05	0.95^{NS}
Breast and shank	15.49 ± 0.03	14.98 ± 0.48	15.48 ± 0.06	2.49^{NS}
Edible offals (%)				
Blood	2.96 ± 0.03	2.94 ± 0.03	2.97 ± 0.01	0.24^{NS}
Liver	1.78 ± 0.01	1.80 ± 0.01	1.79 ± 0.01	0.40^{NS}
Kidneys	0.30 ± 0.01	0.31 ± 0.01	0.31 ± 0.01	0.18^{NS}
Heart	0.46 ± 0.01	0.48 ± 0.01	0.47 ± 0.01	0.25^{NS}
Spleen	0.20 ± 0.01	0.21 ± 0.01	0.20 ± 001	0.14^{NS}
Non-edible offals (%)				
Head	5.81 ± 0.10	5.66 ± 0.05	5.82 ± 0.06	1.35^{NS}
Feet	3.69 ± 006	3.16 ± 0.41	2.84 ± 0.15	1.64^{NS}
Stomach and intestine	$7.10^{a} \pm 0.08$	$7.16^{a} \pm 0.09$	$7.77^{b} \pm 0.10$	21.00^{**}
Skin	7.41 ± 0.08	7.23 ± 0.08	7.17 ± 0.04	3.33^{NS}
Meat	63.60 ± 0.89	63.71 ± 0.43	61.60 ± 1.16	2.044^{NS}
Bone	$24.82^{a} \pm 0.82$	$27.70^{b} \pm 0.51$	$32.95^{c} \pm 1.02$	25.593**
Fat	$11.47^{c} \pm 0.31$	$8.57^{b} \pm 0.15$	$5.30^{a} \pm 0.22$	168.47**

*NS – Non-Significant, * Significant at five per cent level ($p < 0.05$)*

*** Significant at one per cent level ($p < 0.01$), Means bearing different superscript in a row differ significantly*

Results and Discussion

Carcass characteristics of the Kanniadu goats under different housing systems are furnished in the Table. It was observed that Kanniadu kids reared under intensive and semi-intensive system had significantly (P<0.01) higher dressing percentage than animals reared under extensive system. There was no significant difference between intensive and semi-intensive system of rearing in dressing percentage. The result of present study was in agreement with the findings of Misra and Prasad (1996), who observed that there was no significant difference between intensive and semi-intensive system, but kids under extensive system had significantly lower dressing percentage than other two systems. Similar observations were also reported by Saini *et al*. (1988) in Barbari and Jamunapari kids, Paramasivam *et al*. (2002) in Barbari kids. Amount of gut fill was higher in grazing groups due to higher roughage intake which could have been the probable cause of lower dressing percentage in extensively reared kids.

There was no significant difference between treatments in percentage of edible offals. Among the edible offals, the blood had the highest value followed by liver, lungs, heart, kidney and spleen in all the three systems of rearing. This was in close agreement with Ameha Sebsibe and Mathur (2000) who stated similar proportion of edible offals in stall fed Barbari kids. The yields of non-edible offals as percentage of body weight did not significnatly differ among the three systems of rearing. The empty gut percentage was significantly (P<0.01) higher in extensive system than the other two systems. This finding was in agreement with Moniruzzaman *et al*. (2002) and Paramasivam *et al*. (2002).

The yield of primal cuts such as leg, rack, neck and shoulder, breast and shank as percentage of carcass weight did not significantly differ among the different systems of rearing. In case of loin cuts, both intensive, and semi- intensive system had a significantly (P<0.01) higher percentage than the extensive system. The above findings are in accordance with Misra and Prasad (1996) who stated that accumulation of more fat in loin area could lead to increased percentage of cuts under intensive and semi- intensive systems. Similar reports were also made by Sahu and Prasad (1988); Ameha Sebsibe and Mathur (2000). Among the primal meat cuts, the leg portion contributed the highest percentage followed by neck and shoulder, breast and shank and loin which was in close agreement with Reddy and Reddy (2001) and Sen *et al*. (2002).

The yield of bone and fat percentage differed significantly (P<0.01) between the systems. But there was no statistical difference for meat yield between the systems. Kids reared under intensive system recorded higher fat percentage (11.47) followed by semi-intensive (8.57) and extensive system (5.30). Extensive system had higher bone percentage (32.95) followed by semi intensive (27.70) and intensive system (24. 82). The above findings are in accordance with Anous and Mourad (2001).

It was concluded that kids reared under extensive system produced lean meat compared to other systems without any significant difference in meat yield.

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