

Analysis of Growth and Carcass Traits of Dumbi Sheep Breed Male Lambs Different Management Systems

Muhammad Akram Safi¹, Huma Rizwana¹, Hubdar Ali Kaleri², Asma Kaleri², Kamal-Uddin Mandokhial², Abdul Satar Safi², Rameez Raja Kaleri^{2,*}, Asad Ullah and Muhammad Rasheed²

¹Department of Livestock Management, Sindh Agriculture University, Tandojam, Pakistan

²Department of Animal Breeding & Genetics, Sindh Agriculture University, Tandojam, Pakistan

Abstract: Present research was performed on twelve male lambs of Dumbi sheep breed kept in 2 management systems at Faculty of Animal Husbandry and Veterinary Sciences, Department of Livestock Management, Sindh Agriculture University, Tandojam. Animals were divided into two different groups. A groups animal were kept in semi intensive with provision of open grazing and concentrates while, Bgroup animals were kept in intensive management system with provision of green fodder and concentrate. Study was performed till 8 weeks and lambs were observed weekly for average body weight and carcass characteristics of both groups were recorded. The results of current study showed that average body weight of group A was (8.33 kg) found significantly high ($P>0.05$) as compared to the group B (6.86 kg). Moreover carcass characteristics of Dumbi lamb was also observed higher in group A as compared group B. While during comparison of the economical values of both groups, it was observed that group A was found more economical than group B. It is concluded that semi-intensive management system was found better as compared to intensive management system.

Keywords: Dumbi lamb, body growth, carcass weight, management systems.

INTRODUCTION

The Livestock sector of Pakistan contributed 55.9 to% to the agriculture values and 11.9% with national GDP in (2013-14), it indicated that addition of gross values of livestock sector has been increased from Rs. 756.3 billion (2012-13) to Rs. 776.5 billion during the 2013-14, year [1]. Sheep are small ruminants animals reared for meat, fleece, wool and rarely for milk. Small ruminants are mostly kept indoor and outdoor for large and small scale farming. Presently Pakistan has 27 recognized sheep breeds classified into two main groups i.e. fat tail and thin fat tails sheep [2]. The Dumbi fat tailed sheep breed of Sindh commonly found in Dadu, Thatta, and different parts of Karachi and both sides of river Indus and also in Baluchistan provinces. Dumbi is medium size animal kept for the production of mutton, and wool [3]. The carcass is part of animals that remain after removing of feet, head, skin, kidney fat and kidney. There is large number of factors which affect carcass production as well as carcass quality of meat. Aim of present study was to observed growth, carcass weight and production of meat in Fat-tailed Dumbi sheep was performed in 2 management systems i.e. intensive and semi intensive, better systems of management can be recommended for the production of sheep animals [4].

MATERIAL AND METHODS

In this study 12 Dumbi sheep breeds male lambs having age of 3 month were brought in the study in 2 different management system at Sindh Agriculture University Tandojam, Faculty of Animal Husbandry and Veterinary Sciences, experimental station of department of Livestock Management Sindh in 2014. Before starting the experiment Dumbi sheep breed male lamb were examined physically for their stress free and normal health. The all Dumbi sheep breed male lamb were kept in 2 different pen with 6 male lamb were divided in both pens.

- A. Group contains 6 Dumbi sheep breed lamb with tag No (EL1, EL2, EL3, EL4, EL5, EL6) kept in semi intensive management system. In this system all the lambs were allowed for grazing in open area in the farm and concentrate ration
- B. with water supply was also provided to them at the farm.
- C. Group also comprising of six Dumbi sheep breed male with tag no. No (EL7, EL8, EL9, EL10, EL11, EL13). The animals of this B group were brought in another system having named intensive management system, where animals were not provided any area for their grazing activity in the farm. Animal was fed concentration ration with combination of green fodder and water as per their body requirement. The whole

*Address correspondence to this author at the Department of Animal Breeding & Genetics, Sindh Agriculture University, Tandojam, Pakistan; E-mail: rameezkaleri@gmail.com

research activities performed till the Eight week of experiment and lambs were dewormed during adaption 10 days about 2.5% Abendazol and also vaccination were performed.

Ration Formula for Concentrate

The formulation of ration was performed at the rate of 12% CP & 70% TDN.

Dumbi Sheep Male Lambs Weight

Before starting experiment initial body weight was taken and after that weekly observation was recorded till eight weeks.

Measurement of Body Growth and Carcass Characteristics

Weekly average body weight (kg), Final body weight (kg), Carcass weight (kg) & Dressing percentage (%):

Economics

To evaluate the economics of animal's feed, purchasing, vaccination and labour including miscellaneous cost were recorded to observe the profit and loss in both groups.

RESULTS

Growth of Dumbi Lambs (8 Weeks)

The data about body growth of Dumbi male lambs under intensive and semi-intensive management system.

The results showed that initial, weekly and average body weight of Dumbi lambs was observed highly significant ($P < 0.01$) statistically in A group system named semi-intensive management system where animals were fed green fodder and self-prepared concentrate mixture with grazing opportunity as compared to group B animals which were reared in system named intensive management which were provided green fodder + self-prepared concentrate mixture without grazing. Details are listed in Table 1.

Carcass Characters

The Results of Carcass Character of Male Dumbi Lambs

The results for carcass characteristics of Dumbi sheep male lambs including dressed carcass weight, weight of neck, shoulder, thorax, lion and flank, legs and kidney were observed highly significant ($P < 0.01$) statistically in animals of group A of semi-intensive management system as compared to animals of group B kept in intensive management system. Details are mentioned in Table 2.

Economics of Feeding Systems

After the completing of 8 weeks research work to observed the effect of 2 management systems on body growth and carcass character of male Dumbi lambs, the results of feeding economic showed that total cost of feed on lamb in both groups A and B were the same Rs. 840/lamb, but the weight gain was higher in animals of group A reared in semi-intensive management system as compared to animals of group

Table 1: Weekly Average Body Weight (kg/lamb) of Male Dumbi Lambs as Affected by Different Management Systems

Weeks	Average of body weight (kg / lamb)	
	Group-A (Semi-Intensive management system)	Group-B (Intensive management system)
0 week	6.08±0.139 h	5.79±0.068 cd
1 week	6.33±0.139 gh	5.85±0.091 d
2 week	6.58±0.139 fg	5.88±0.112 cd
3 week	6.83±0.139 ef	5.94±0.118 bcd
4 week	7.16±0.123 de	6.10±0.149 bcd
5 week	7.41±0.123 cd	6.18±0.127 abcd
6 week	7.66±0.123 bc	6.39±0.162 abc
7 week	8.00±0.111 ab	6.51±0.175 ab
8 week	8.33±0.083 a	6.86±0.207 a

S.E± 0.0832.

LSD 0.05 0.1652.

Mean with different superscripts in rows / columns are significantly different from one another.

Table 2: Average Values for Carcass Weight of Dumbi Sheep Breed Male Lambs in 2 Different Systems of Management

Characters	Average of carcass weight (kg / lamb)			
	Group-A (Semi-Intensive management system)	Group-B (Intensive management system)	LSD 0.05	P-Value
1. Initial body weight (kg)	6.08±0.139 a	5.79±0.068 b	0.149	0.0000**
2. Pre-slaughter weight (kg)	8.33±0.083 a	6.86±0.207 b	0.552	0.0020**
3. Dressed carcass (kg)	6.58±0.051 a	5.61±0.070 b	0.302	0.0011**
4. Weight of neck (kg)	0.86±0.031 a	0.71±0.018 b	0.080	0.0141**
5. Weight of shoulder (kg)	1.50±0.069 a	1.23±0.074 b	0.319	0.0303*
6. Weight of thorax (kg)	1.20±0.083 a	1.05±0.076 b	0.230	0.0583*
7. Weight of loin and Flank (kg)	1.10±0.028 a	1.01±0.083 b	0.013	0.0028**
8. Weight of legs (kg)	1.80±0.057 a	1.50±0.021 b	0.091	0.0021**
9. Weight of kidneys (kg)	0.12±0.003 a	0.11±0.096 b	0.007	0.0554*

*Significant at 0.05 probability level; **Significant at 0.01 probability level.
Mean with different superscripts in rows / columns are significantly different from one another.

Table 3: Comparative Economics of Rearing of Male Dumbi Lambs under Intensive and Semi-Intensive Management Systems

No.	Activities and particulars	Groups	
		A	B
A	Consumed feed per/animal in 8/weeks/kg	126	126
B	Ration (concentrate) kg	14	14
C	Ration (concentrate rate) KG-RS	32	32
D	Ration (concentrate) quantity (2 x 3) RS	448	448
E	Amount (green fodder 1 – 2 lamb/KG	112	112
F	Ration (green fodder rate) KG-RS	3.5	3.5
G	Ration (green fodder amount) 5 x 6 lamb-RS	392	392
H	FCR/ Lamb 4 + 7	840	840
I	Health related costRS	48	75
J	Cost of the labour RS	210	170
K	Cost of the miscellaneous RS	110	140
L	Cost of lambs initial RS	2480	2480
M	All costsRS	3688	3705
N	8 week lambs weight KG	2.25	1.07
O	Cost of lambs initial RS/KG	6.08	5.79
P	Lambs final body weight	8.33	6.86
Q	Price of sold animals	4225	3950
R	Earned profit (after selling lambs) Total/Rs 17– 13	537	245

A=Lambs fed Green fodder + self-made concentrate mixture + grazing.
B=Lambs fed Green fodder + self-made concentrate mixture.

B in intensive management system. While average lamb was sold in market at the price of Rs. 4225 and 3950/lamb, respectively. In this way after deducting the

all expenditure amount the net earned profit was found Rs. 537 in group A and in group B was Rs. 245/lamb, respectively. Details are in Table 3.

DISCUSSION

A system of management and feeding pattern plays an important part in development as well as in growth and carcass weight of animals particularly in sheep. In present research body growth of Dumbi lambs was higher in semi intensive as compared to the intensive management system. The finding of [5] who has reported high improvement in body weight and carcass weight of sheep. The investigation of [6] who stated that sheep animals grow faster in grazing with supplement of sufficient amount of energy and also higher body weight and carcass weight was found in his results. Similar statement repeated by [7] that has been verified that due to increased amount of energy supplement definitely brought major development and improvement in the growth of lamb sheep. Another study was performed by [8], the observations of Kousum are representing that grazing of sheep with efficient supply of concentrate has remarkably effect on the growth of sheep animals and its carcass weight after slaughtering. Results of [9] are not agreement in the current investigation, who has reported lower weight in Bornova lamb in grazing opportunity. The reported different between the results may be due to climatic, environmental and changes in the provision of energy supplement. Higher temperature is also affecting on the body growth and carcass weight of sheep and Atti has been also conducted in the hot environment, where animals may not be found easily place and time for grazing. The results of present study are in relation with the research performed by [10, 9, and 12], they had observed significantly higher body and carcass weight of sheep lambs in semi-intensive management system. According to the results of present research, it was observed that semi-intensive management system was observed better and profitable as compared to other system.

CONCLUSION

It is concluded that semi-intensive management system with green fodder feeding, self-prepared

mixture of concentrate and grazing has highly profitable effect as compared to intensive management system where lambs were not allowed to graze.

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