Heritability Estimates for some Performances Traits of Baluchi Sheep

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Abstract: Present study was carried out to estimates the genetic parameters of Baluchi sheep during the year 2015 at Bhagnari cattle Cum Baluchi Sheep Farm Usta Muhammad, Baluchistan. The recorded data including (lactation yield and lactation length) was collected for the period 2005 to 2014.The results of current study revealed that average milk yield and lactation length was found 95.1±11.122kg and 123.60±8.44days of Baluchi sheep. The results for heritability and correlation estimates for lactation yield and lactation length was observed 0.113, 0.126 and 0.26, respectively. There was positive and low heritability and correlation was worked out for lactation yield and lactation length. Due to low results heritability and correlation estimates of some performance traits of Baluchi sheep, it was concluded that improvement can be achieved by process of mass selection.

Keywords: Baluchi sheep, heritability, correlation, milk yield, lactation length.

INTRODUCTION

Sheep is a small ruminant has higher range of adaptability for harsh environmental conditions of Baluchistan. There are 28 sheep breeds in Pakistan among them Baluchi sheep is fat tailed sheep breed and reared for milk meat and wool purpose [1]. Baluchi sheep commonly found in Kalat and some part of Quetta. In dairy production milk pays a major part in the economy of country with provision of nourishment to the people throughout the world [2]. Heritability is an important component that is used to predict genetic progress from selection to improve a particular trait, while the correlation estimates is major genetic parameters that paly key role for the selection of particular traits, [3,4]. Heritability determines the possible amount of genetic progress for a selective trait. It is real factor that number of environmental and genetic factors effects on production of dairy animals [5]. Keeping in the view importance of genetic parameters this study was designed to estimate the heritability and correlation between some performance traits of Baluchi sheep.

MATERIAL AND METHODS

The data regarding the performance traits including lactation yield and leg length of Baluchi sheep was collected for the period of 10 years from (2005 to 20014) and maintained at Bhagnari cattle Cum Baluchi Sheep Farm Usta Muhammad, Baluchistan.

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The estimation of genetic parameters heritability and correlation estimates for some performance traits of Baluchi sheep were worked out using the formula prescribed by (Becker 1985).

RESULTS

The Year Wise Results for Lactation Yield and Lactation Length of Baluchi Sheep

The year wise results for some performance traits of Baluchi sheep are presented in Table **1**. Results showed that higher lactation yield and lactation length of Baluchi sheep was observed in year of (2006) 110.54±2.03 and 135.13±2.01, while lactation yield and lactation length of Baluchi sheep was found lower in the year of (2012) 79.07±0.17 and 108.08±1.05, respectively.

Table 1: Year-Wise Lactation Yield and Lactation Length of Baluchi Sheep

Years	Lactation yield (kg)	Lactation length (days)
2005	105.5±1.54	125.23±1.23
2006	110.54±2.03	135.13±2.01
2007	95.23±1.97	131.34±2.01
2008	85.13±1.37	125.98±1.72
2009	95.12±1.29	118.12±1.61
2010	105.04±2.27	127.37±0.83
2011	81.51±0.93	110.57±1.03
2012	79.07±0.17	108.08±1.05
2013	87.17±1.83	127.61±1.25
2014	109.31±1.29	130.21±1.09
Mean±SD	95.1±11.122	123.60±8.44

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Results for Heritability and Correlation Estimates of some Performance Traits of Baluchi Sheep

The results for heritability and correlation estimates of some performance traits of Baluchi sheep was observed low and positive details are given in Table **2**.

Table 2: Results for Heritability and Correlation Estimates

Traits	Heritability estimates (h^2)
Lactation yield	0.113
Lactation length	0.126
Traits	**Correlation estimates**
Lactation yield x Lactation length	0.296

DISCUSSION

It has been stated that genetic parameters are key factors for predicating the production of milk.

In present study results for year wise lactation yield and lactation length showed a little bit variation between said performance traits of Baluchi sheep at Bhagnair cattle cum Baluchi sheep Farm, Usta Muhammad Baluchistan. Reason behind these uneconomical results may be poor management practices as well as feeding facilities. In our results the results for heritability and correlation estimates were found low to positive. The results of current research are lower than the results of [7-9], they have reported higher and positive results for heritability and correlation estimation between some performance traits of Manchega and Armani dairy awes. The prescribed difference among researches may because of different climatic conditions and availability of green fodder and better manage mental conditions of Farm. The results of [10, 11] are partially supporting our study, they had reported medium and positive results for heritability and correlation estimates between some performance traits of Spanish and French dairy sheep. The results of current research are in agreement with the research conducted by [12-14], who had reported low to medium and positive results for heritability and correlation estimates between some performance traits of Lacuane ewes, Tsigai and in Kankrej breed. The variation between the researchers may due to involvement of different environmental and genetically factors such as fluctuation of temperature hotness to coldness cause lower milk production and genetic potential of animals. Due to lower results of heritability and correlation in current study it was suggested to made selection for improvement of herd with availability of better feeding and management conditions. It has been reported that low value of heritability and correlation can be improved by the process of selection as well as different managental and feeding techniques also reported that genetic potential of animal can also play important role in the herd improvement program.

CONCLUSION

Due to lower results for heritability and correlation estimation, It is concluded that improvement can be achieved through mass selection.

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