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Nusrat Nabi Khan
Division of Animal Genetics and Breeding, SKUAST-Kashmir, Jammu and Kashmir, India

Mubashir Ali Rather
Department of Sheep Husbandry, Kashmir, Jammu and Kashmir, India

Ambreen Hamadani
Division of Animal Genetics and Breeding, SKUAST-Kashmir, Jammu and Kashmir, India

Saba Bukhari
Division of Animal Genetics and Breeding, SKUAST-Kashmir, Jammu and Kashmir, India

Ruksana Shah
Division of Animal Genetics and Breeding, SKUAST-Kashmir, Jammu and Kashmir, India

Corresponding Author:
Nusrat Nabi Khan
Division of Animal Genetics and Breeding, SKUAST-Kashmir, Jammu and Kashmir, India

Wool quality traits of sheep reared in Karnah tehsil of J&K

Nusrat Nabi Khan, Mubashir Ali Rather, Ambreen Hamadani, Saba Bukhari and Ruksana Shah

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Abstract
A study was conducted to estimate wool quality traits of sheep reared in Karnah tehsil of Jammu and Kashmir. Accordingly, 100 wool samples were collected and analyzed for crimps per inch (CPI), staple length (SL) (cm), clean wool yield (CWY) (%), fibre diameter (FD) (µ) and medullation (M) (%). Overall estimates of 7.82±0.28, 3.23±0.117 cm, 21.77±0.05µ, 70.83±0.04% and 3.40±0.37% for CPI, SL, FD, CWY (%) and medullation (%) with CV (%), 35.81, 32.82, 2.30, 0.51 and 108.24 respectively was obtained in the present study. All wool samples were black. To conserve the precious indigenous germplasm of Jammu and Kashmir, random crossbreeding with Kashmir Merino breeds should be checked.

Keywords: crimps per inch, staple length, clean wool yield, fibre diameter, and medullation

Introduction
Jammu and Kashmir possess rich diversity native sheep genetic resources, among which six breeds have been registered [1]. Sheep are widely distributed in Karnah tehsil of Kuparwa district of Kashmir valley [1]. The sheep of this region are known for the production of good quality carpet wool with fibre diameter and a staple length of 9.36 cm and 29.70µ, respectively [1]. These are robust [1], medium to large sized animals having a deep body, pendulous and medium sized ears [1]. A long face and prominent nose are observed in individuals of this region [1, 2]. Rams are horned and ewes are polled [2]. The indigenous animals of this region are under the constant threat of extension due to indiscriminate cross breeding with Kashmir Merino. The present study was conducted by randomly collecting 100 wool samples collected from sheep home tract to estimate its wool quality traits. The study will be useful to formulate strategies for further characterization and conservation of these sheep. Since the sheep husbandry sector holds high value in J&K, its upliftment in terms of the improvement of the indigenous germplasm can go a long way in the socio-economic improvement of the people associated with this sector.
A number of studies have been conducted to study various sheep breeds in the Valley but the emphasis has often been only on the crossbred sheep [5, 6] and the indigenous breeds have not received as much attention as they should have [4, 8]. Keeping this in view, this study was undertaken to study the wool quality traits of Sheep reared in Karnah Tehsil of J&K

Material and Method
The 100 wool samples of sheep irrespective of sex and age were collected randomly from different villages of Karnah Tehsil, of Kupwara districts. The wool samples were packed and dispatched to Fleece Testing Laboratory, Nowsherah, Srinagar, for analysis. The traits considered for the the study were crimps per inch (CPI), staple length (SL) (cm), clean wool yield (CWY) (%), fibre diameter (FD) (µ) and medullation (M) (%). The mean, standard error and standard deviation were computed by Harvay (1990) whereas the coefficient of variation was computed in excel (2007) spread sheet. The wool colour was obtained by visualizing the wool in day light.

Results and Discussion
A total of 100 wool samples of Karnah sheep in its breeding tract were studied to estimate its

wool traits. The average estimates for CWY (%), FD (µ), SL (cm), Medullation (%) and CPI are presented in Table 1 and the wool traits of various sheep as reported by other authors are given in Table 2.

Colour: All wool samples were black in colour. White wool is also reported in Gurez and Poonchi sheep by [3, 4] respectively.

Clean wool yield (CWY%): The overall average of 70.83±0.04 with range of 65-74 for CWY (%) was observed in the present study. However, the trait was reported as 28.31±0.17 in Gurez sheep [3], 69.33±0.02 in Kashmir Merino sheep by [5, 6] in Corriedale sheep. It is observed from the present study the trait is within the range which is reported in literature for different sheep breeds.

Fibre diameter (FD) (µ): FD is an important wool trait used to determine it end use. As was reported breed produced carpet wool with 29.70 µ fibre diameter. However, the FD of 21.77±0.05 µ with a range of 21.1-23.1 µ was obtained in the present study. The lower FD obtained in the present study can be attributed to continuous and indiscriminate crossbreeding carried in the Karnah area. More or less similar FD was reported in Kashmir Merino and Corriedale by [5]. in Corriedale and [7] in Kashmir Merino sheep. Higher estimates of FD were reported by [2] in Karnah, [8] in Gurez, [3] in Gurez sheep, [9] in Poonchi and [4] in Poonchi sheep.

Staple Length (SL) (cm): The overall estimate of 3.23±0.11 cm with range and coefficient of 1.9-5.6 cm and 32.82 (%). A low estimate for SL may be attributed to the management practice prevalent in s wherein farmers take autumn clip in five months and spring clip in seven months. Similar estimate of 3.82±0.07 cm was reported by [4] in poonchi sheep, [5] In Kashmir Merino sheep and [6] in Corriedale. However, higher estimates were found by [3] in Gurez sheep. Comparative estimate of SL reported in different sheep breeds reared in Jammu and Kashmir are reflected in Table 2.

Medullation (%): Medullation is an undesirable trait and is used as an indicator of fibre fineness both with respect to frequency and amplitude. Wool with higher medullation (%) is usually considered inferior. Overall estimate of 3.40±0.37% for medullation (Table 1) was obtained in Karnah sheep in the present study. The medullation% in Karnah was in consonance with finding of Taggar *et al*. (2018) in Poonchi sheep. However, lower, estimates were reported by [6] in Kashmir Merino and Corriedale sheep. [3] in Gurez sheep and [9] in Poonchi and Rambouillet sheep reported higher estimates.

Crimps per inch (CPI): Overall estimate of 7.82±0.28 with CV (%) of 35.81 was observed in the present study. More or less similar estimate of 8.67±0.18 was obtained by [4] in Poonchi sheep [4]. Gurez sheep reported CPI of 5.37±0.10 whereas, Baba *et al*. [5, 6] reported Crimps per/cm of 0.79±0.05 and 0.24±0.06 in Kashmir Merino sheep and Corriedale sheep, respectively.

Table 1: Descriptive Statistics of Karnah sheep

	Mean ±SE	SD	Range	CV (%)
CWY (%)	70.83±0.04	0.36	65 - 74	0.51
FD (µ)	21.77±0.05	0.50	21.1 - 23.1	2.30
SL (Cm)	3.23±0.11	1.06	1.9 - 5.6	32.82
CPI	7.82±0.28	2.80	2.7 - 12	35.81
Medullation (%)	3.40±0.37	3.68	0.00 - 10.8	108.24

CV=Coefficient of variation; SD=standard deviation

Table 2: Wool quality traits of different sheep breeds reared in Jammu and Kashmir

Breed	FD	CWY	SL	CPI	Medullation
Gurez [3]	28.31±0.17	76.10±0.13	4.48±0.07	5.37±0.10	9.29±0.39
Poonchi [9]	27.93±0.584	71.08±2.2117	7.89±0.06		8.89±0.052
Rambouillet [9]	20.02±0.06	69.78±2.578	9.00±0.477		6.09±1.171
Poonchi [4]	24.99±0.13	63.14±0.23	3.82±0.07	8.67±0.18	2.22±0.19
Kashmir Merino [5]	21.47±0.001	69.33±0.02	4.05±0.001	3.73±0.01	0.79±0.05
Corriedale [6]	21.20±0.05	683.46±1.19	3.88±0.05	4.16±0.05	0.24±0.06

Conclusion

Our results indicate that the sheep found in the Karnah District of J&K are worthy of conservation and measures should be taken to characterize them and to prevent the constant threat of extinction. The overall FD of 21.77±0.05 µ indicated huge dilution with Kashmir Merino may already be underway. To conserve this precious germplasm random crossbreeding with Kashmir Merino breeds should be checked. Therefore, the government should take strong and concrete measures to revive the breed.

Reference

1. Anonymous. Directorate of Sheep Husbandry Kashmir division, Government of Jammu and Kashmir 2020.http://jksheephusbandrykashmir.net/sheep.html.
2. Ganai TAS, Misra SS, Sheikh FD, Banik S. Characterization and evaluation of Karnah sheep of Kashmir. Indian Journal of Small Ruminants 2009;15(2):172-177.
3. Ahanger SA, Sofi AH, Paul MA, Khalil M, Hamadani A, Khan NN *et al*. Wool characteristics of Gurez sheep. Journal of Entomology and Zoology Studies 2020;8(4):603-604.
4. Taggar RK, Chakraborty D, Kumar D, Vohra V, Tantia MS, Sharma A. Wool characteristics of Poonchi sheep. International Journal of Fauna and Biological Studies. 2018;5(2):133-5.
5. Baba MA, Ahanger SA, Hamadani A, Rather MA, Shah MM. Factors affecting wool characteristics of sheep reared in Kashmir. Tropical Animal Health and Production. 2020a;20:1-5. https://doi.org/10.1007/s11250-020-02238-1
6. Baba JA, Rather MA, Hamadani A, Shanaz S, Rather M A. Factors affecting wool characteristics of Corriedale sheep in temperate region of Jammu and Kashmir. Indian Journal of Small Ruminants 2020b;26(2):173-177. DOI: 10.5958/0973-9718.2020.00035.5.
7. Rather MA, Shanaz S, Ganai NA, Bukhari S, Hamadani A, Khan NN. Genetic Evaluation of Wool Traits of Kashmir Merino Sheep in Organized Farms. Small

Ruminant Research 2020a;177(2020):14-17.
8. Ganai TAS, Misra SS, Sheikh FD. Gurez-a threatened sheep breed of Kashmir. Indian Journal of Animal Sciences 2010;80(8):806-808.
9. Qureshi MA, Khan SA, Shafique M, Sabir N, Ahmed G. Influence of genetic and non-genetic factors on quantity and quality of wool from sheep reared at Rawalakot Azad Jammu and Kashmir. The Journal of Animal and Plant Sciences 2013;1:20-5.