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

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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 Kupwara 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 [3, 4] and the indigenous breeds have not received as much attention as they should have [4, 5]. 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 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 Harvy (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
Genetic Evaluation of Wool Traits of Karnah was in Poonchi. (2018) in Poonchi. The present study can be attributed to the management and Biological Studies. (2018) in Poonchi sheep. Comparative estimate of SL reported in different sheep breeds reared in Jammu and Kashmir are reflected in Table 2.

**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 [3], in Corriedale and [5] in Kashmir Merino sheep. Higher estimates of FD were reported by [3] in Karnah, [6] 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.

**Crimp 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 [3]. Gurez sheep reported CPI of 5.37±0.10 whereas, Baba et al. [5, 6] reported Crimp per/cm of 0.79±0.05 and 0.24±0.06 in Kashmir Merino sheep and Corriedale sheep, respectively.

| Breed          | 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 |

**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.

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