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COMPARATIVE STUDY OF CLEAN WOOL CONTENT IN BUCHI, SIPLI AND THALLI SHEEP BREEDS OF PUNJAB

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ABSTRACT

Three sheep breeds (Buchi, Sipli and Thalli) were compared for their quantitative wool characters. The clean wool contents were 45.90, 48.61 and 53.49%, respectively. The difference among the breeds was non-significant. The average vegetable matter was 3.07, 2.29 and 5.74% and the difference among breeds was significant ($P<0.05$). The ash contents also varied significantly among three breeds. The grease contents in the same order averaged 3.22, 2.96 and 2.42%, the difference being statistically non-significant.

INTRODUCTION

Sheep population in Pakistan has been estimated to be 25.8 million heads. These contributed 50.3 thousand metric tonnes of wool which is utilized by carpet and textile industry and earns foreign exchange equivalent to rupees 2,380 million by exporting carpets and raw wool (Economic Survey of Pakistan, 1985-86). Rice *et al.* (1954) reported that fleece weight did not represent the weight of the wool in real sense because it contained impurities like dirt, vegetable matter, suint and grease which varied with breed, age, season, nature of soil, shearing period and method. Clean wool content is a good index of the actual fleece weight of a breed and can be used for genetic evaluation of sheep. In the present study clean wool content of Buchi, Sipli and Thalli sheep has been determined to compare the wool production of these breeds.

MATERIAL AND METHODS

one hundred and fifty fleeces of Buchi, Sipli and Thalli breeds were randomly collected from their respective home tracts. These fleeces were collected at the time of autumn shearing. The quantitative analysis was made to determine clean wool content by estimating dirt, vegetable matter, grease and ash percentages according to A.S.T.M. (1963).

RESULTS AND DISCUSSION

Clean Wool Content : The clean wool content represents the actual amount of wool after removing all types of impurities including dirt, grease, vegetable matter and ash content of wool and covers the determination of the percentage of clean wool fibre content in a fleece. These contents were 45.90± 19.62, 48.61 ± 14.58 and 53.49 ± 21.02% for Buchi, Sipli and Thalli breeds, respectively (Table 1). The difference was non-significant. The probable reason for small difference in values may be that all these breeds have the same ecological habitat, being the breeds of desert areas i.e., Cholistan and Thal. However, great variation in clean wool content was observed within a breed as the coefficient of variation ranged from 206.2 to 297.2% in these breeds. Very little work has been reported on these parameters of Sipli but as far as Buchi and Thalli breeds are concerned much higher values for clean wool content (51.1 and 64.2) have been reported (Anonymous, 1964).

Vegetable Matter : Vegetable matter consists of impurities of plant origin such as seeds, burs, twigs, leaves, stalks and grasses. The quantity of this matter may vary from place to place depending upon the kind and intensity of vegetation. The average vegetable matter in Buchi, Sipli and Thalli breeds was 3.07±1.82, 2.29±1.30 and 5.74±5.11%, respectively. The difference was significant between Thalli and the other two breeds. When compared with previous findings the vegetable matter was higher than that found in the present study. The variation within a breed was comparatively high in Thalli breed as the coefficient of variation was 72.20 compared with 25.76 and 18.38% in Buchi and Sipli sheep breeds.

Grease Content : Grease content included the alcohol soluble matter like wool grease. Although major part of grease is extracted during scouring process yet there is some amount of grease present in the wool. The average values for grease content were 3.22±1.87, 2.96±1.87 and 2.42±1.95% for Buchi, Sipli and Thalli breeds, respectively. These values were higher than the findings of Iqbal *et al.* (1986) who found relatively low values in other coarse wool breeds.

Ash Content : This consists of ash or mineral matter in scoured and ovendried wool after burning it at a high temperature. As shown in Table 1, the average ash content in the wool of Buchi, Sipli and Thalli breeds was 3.62±2.34, 2.72

±2.52 and 4.19±3.38%, respectively. Sipli sheep had significantly ($P \leq 0.05$) lower ash content than the other two breeds. The values for ash content for these two breeds were very close to the previous findings but were higher for Thalli (Anonymous, 1964).

The correlation coefficients among different parameters have been given in Table 2. Only the correlations between vegetable matter and clean wool content were significant ($P<0.05$), while for other parameters these were non-significeant. These results partially agree with the findings of Iqbal *et al.* (1986).

Table 1. *Mean values for different parameters of Buchi, Sipli and Thalli wool.*

Breeds	Clean wool content (%)	Vegetable matter (%)	Grease content (%)	Ash content (%)
Buchi	45.90	3.07	3.22	3.62
	± 19.62	± 1.82	∓ 1.87	± 2.34
Sipli	48.61	2.29	2.96	2.72
	± 14.58	± 1.30	± 1.87	± 2.52
Thalli	53.49	5.74	2.42	4.19
	± 21.02	± 6.11	± 1.95	± 3.38

Table 2. *Correlation coefficients among various parameters of wool.*

Parameters	Correlation coefficient
Vegetable matter : grease content	0.0326N.S.
Vegetable matter : ash content	0.1038N.S
Vegetable matter : clean wool content	-0.2368*
Grease content : ash content	-0.1008N.S.
Grease content : clean wool content	-0.1421N.S.
Ash content : clean wool content	-0.1323N.S.

N.S. = Non-significant.
* = Significant at 5%.
** = Significant at 1%.

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