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# A COMPARATIVE STUDY ON DIMENSIONAL PARAMETERS OF SOME PAK AND NEW ZEALAND CROSSBRED WOOLS

Mushtaq Ahmad*, Bakht B. Khan** and M. S. Naseem*

Dimensional parameters such as fibre length and fibre fineness of some Pak wools (Mixed Yellow, Mixed White, Cholistani, Harnai) and New Zealand Crossbred Wools were studied. Their comparative picture has been presented.

## INTRODUCTION

Pakistan has vast economic potential mainly on account of its agricultural wealth, and livestock. There are 21 breeds of sheep which are scattered all over the country in small flocks with a total population of 28.45 million heads, producing 43.5 million kg greasy wool, yielding 26.25 million kg clean wool per annum (Haq 1982). Sheep in this country predominantly belong to the carpet wool group. In the past, the bulk of the wool produced was exported but this trend has undergone a change in recent years. Now more and more indigenous wool is being consumed by local industry. However, deterioration in quality of our wools has recently being reported. It was thus thought desirable to compare fibre length and fineness of some indigenous wools with crossbred wools of New Zealand.

## MATERIALS AND METHODS

Wool fibre length and fineness of tops of Mixed Yellow, Mixed White, Cholistani, Harnai and Zealand crossbred (summer clip of six months growth) were determined. The samples (5 kg each) collected from Wool Market, Multan were studied using the following standard methods :

(i) *Fineness* : Wool fineness was determined using WIRA Fineness Air-Flow apparatus according to the approved method of IWTO Technical Committee (1960).

(ii) *Fibre length* : It was determined on Shirley Comb Sorter according to the standard procedure described by Booth (1968).

*Department of Fibre Technology, University of Agriculture, Faisalabad.
**Department of Livestock Management, University of Agriculture, Faisalabad.

## RESULTS AND DISCUSSIONS

Table 1 shows the mean comparative values for length and fineness of wools of five varieties. Among the Pak wools used in this study, the minimum length was observed for Cholistani wool, whereas Harnai had the longest fibres. The length of New Zealand Crossbred wool was even lesset than the Cholistani wool.

It is obvious from Table 1 that Harnai wool is the finest and Cholistani the coarsest. The fineness of New Zealand Crossbred wool fibres was almost midway between these two limits. The difference in length and fineness of various varieties was found to be highly significant (Table 2).

TABLE 1. *Comparison of individual means for length and fineness of fibres of various wool tops of various varieties of wools*

| Wool Varieties | Length | | Fineness | |
|---|---|---|---|---|
| | Means* (um) | CV (%) | Means* (um) | CV (%) |
| Mixed Yellow | 75.93 bc | 4.41 | 33.42 bc | 2.15 |
| Mixed White | 64.19 a | 3.43 | 32.83 b | 1.24 |
| Cholistani | 71.63 ab | 5.37 | 39 23 d | 1.31 |
| Harnai | 79 45 c | 3.09 | 30 99 a | 1.13 |
| New Zealand and Crossbred | 68.73 ab | 4.58 | 33.90 c | 0.76 |

*Means bearing the same letter have non-significant difference between them.

TABLE 2. *Analysis of variance of data for fineness and length of wool tops*

| SOV | DF | | MS | |
|---|---|---|---|---|
| | Fineness | Length | Fineness | Length |
| Varieties | 4 | 4 | 57.18** | 142 85** |
| Error | 25 | 15 | 0.27 | 12.49 |
| Total | 29 | 19 | | |

**highly significant ($P \leq 0.01$).

These results was in agreement with those reported by Ross, 1959; Anonymous, 1960; Morton and Wray, 1962; and Shah, 1980, but slightly different

from the findings of Ahmad (1979) who reported lower values for New Zealand Crossbred wool. This difference may be due to quality of samples used in the present study might be of low grade since these were obtained from local market. The scoured wool tops were finer than the greasy wool. It was observed that fibre length of wool tops had been partially reduced, probably due to breakage of tender wools during carding. Since Pak summer wools are often adversely affected by various factors such as yellowing effect of summer heat, these are weaker in strength and thus liable to break in carding process.

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