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INFLUENCE OF SHEARING SEASON AND AGE OF SHEEP ON THE QUALITY OF WOOL

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Crimps per inch in age groups A and C showed maximum values but were statistically non-significant with each other in both seasons. It was seen that values for autumn shearing were higher as compared to spring shearing. The samples from various age groups did not show much variation between the shearing periods as the proportion of each grade was similar in each age group. The two seasons were also observed to show similar quality of wool, i.e. Pak Super in various ages of sheep.

INTRODUCTION

The quality of wool fibre is determined in general by the fineness, crimps per inch and the grade that includes colour preparation and presentation. Fibre fineness is directly related to waviness resulting from uneven growth and arrangement of the cortical cells. Wavy structure is seldom found in coarse wools and if present the waves are long and irregular. However, in fine wools short and regular waves are quite common and contribute appreciably to spinning quality and to reseliency of the yarn of fabric into which it is manufactured.

Proper assessment of the effect of shearing seasons and age on the quality of wool is of considerable significance, so that the trade and industry may be properly acquainted with the exact quality that will be available in a particular area.

Lang (1944) recorded 10-13 crimps per inche in merino wool. Haq (1955) classified Pakistan wools as Pak super, Pak medium, Pak coarse and Pak pieces based on fibre fineness studies. Lohi was graded as Pak.Medium. According to Hussain (1960) fine apparel wools have 10-13 crimps per inche. He reported 1-5 crimps per inch in wool from Bahawalpuri, Buchi, Sahiwal and Lohi breeds. Wool from other breeds possessed no crimps. Production of crimpy wool was considered to be limited in Pakistan. Khan *et al* (1971) reported highly significant differences in crimps per inch in wool from the various breeds of sheep at Lyallpur, the mean values ranging from 0.46 in Bulkhi to 1.16 percent in Kajli.

MATERIALS AND METHODS

Studies reported in here were conducted at University of Agriculture

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Lyallpur, during the year 1971. Wool was obtained from Lohi sheep belonging to the following five age groups during two periods of shearing Viz Spring and autumn and was analysed for quality.

Age Group	*Spring Shearing*	*Autumn Shearing*
A	3 years	3½ years
B	4 //	4½ //
C	5 //	5½ //
D	6 //	6½ //
E	7 //	7½ //

Following are the details of the procedure used for quality determination.

Crimps: The character was measured by placing randomly chosen individual fibre against a foot rule with out streching and then converting into per inch basis.

Grading: Grading of wool sample was done according to the following details of Pak grades given by Hussain (1954).

S. No.	*Grades*	*Units in Microns*
1.	Pak Super	Up to 40.0 or below
2.	Pak Medium	Between 40.0 to 45.0
3.	Pak Coarse	Above 45.0
4.	Pak Coloured	Any Diameter
5.	Pak Pieces	Any diameter length less than 2 inches.

RESULTS AND DISCUSSION

Crimps: Data for crimps per inch for the two shearing season are presented in Table 1.

TABLE 1. *Crimps per inch of Wool Fibre obtained during two shearing seasons from Lohi Sheep belonging to five age groups.*

Age Group	Spring Shearing 1	2	3	4	Mean	Autumn Shearing 1	2	3	4	Mean
A	5.06	5.18	4.93	3.83	4.73	5.84	4.75	5.38	4.51	5.12
B	4.13	4.67	4.76	5.18	4.68	4.06	3.35	3.42	4.82	4.09
C	4.99	5.03	4.14	5.15	4.85	5.17	4.86	4.80	4.35	4.83
D	4.89	4.30	3.82	4.33	4.33	4.23	4.22	4.31	4.40	4.29
E	3.77	4.11	3.57	3.82	3.82	4.00	4.80	4.21	4.05	4.26

Analysis of Variance

Due to	D.F.	M.S.	F.R.
Groups	4	0.69	3.45
Error	15	0.20	
Total	19		

Analysis of Variance

Due to	D.F.	M.S.	F.R.
Groups	4	0.45	4.09
Error	15	0.11	
Total	19		

Spring Shearing: As is evident from these data the differences due to age group were significant, the mean number of crimps for the 5 age groups, ranged from 3.82 to 4.85 with the age group C having maximum number of crimps and age groups E the least number of crimps per inch, indicating a more or less general trend for the crimps to decrease with advancement of age.

Autumn Shearing: Again the differences in the number of crimps for various age groups were significant and the values for the five age groups ranging from 4.09 to 5.12 crimps per inch. Age group A had the maximum number of crimps and B least number of crimps per inch. A decrease in the number of crimps per inch with the advancement in age was again generally apparent.

Autumn shearing were higher as compared to spring shearing.

Grade: The grading was done keeping in view the fineness or diameter in microns of samples. Staple length of corresponding samples was also given the consideration and the samples were graded as Pak Super, Pak Medium and Pak Pieces, according to their quality, based on fineness and staple length (in case of Pak pieces).

TABLE 2. *Grading of wool fibre obtained during two shearing seasons from Lohi belonging to five age groups.*

	Spring Shearing				Autumn Shearing			
Age Group	1	2	3	4	1	2	3	4
A	Pak Super	Pak Pieces	Pak Super	Pak Pieces	Pak Super	Pak Pieces	Pak Pieces	Pak Pieces
B	Pak Super	Pak Super	Pak Pieces	Pak Medium	Pak Super	Pak Coarse	Pak Medium	Pak Pieces
C	Pak Super	Pak Super	Pak Super	Pak Super	Pak Super	Pak Super	Pak Super	Pak Super
D	Pak Super	Pak Super	Pak Medium	Pak Super	Pak Super	Pak Super	Pak Medium	Pak Super
E	Pak Medium	Pak Pieces	Pak Super	Pak Medium	Pak Super	Pak Super	Pak Medium	Pak Super

Spring Shearing: Out of 4 samples observed for grading in each age group, number 2 and number 4 were graded as Pak pieces in A group, number 3, number 4 were graded as Pak pieces and Pak medium, respectively

in B group, number 3 as Pak Medium in D Group and number 1, 2 and 4 as Pak Medium, Pak pieces and Pak Medium respectively, in E group The rest were graded as Pak Super.

Considering shearing season as a whole, it was observed that out of 20 samples, 12 were Pak Super 4 Pak Medium and 4 Pak Pieces, with overall results as Pak Super in spring season.

Autumn Shearing : Out of 4 samples examined for grading in each age group, sample number 2, 3 and 4 of A group was graded as Pak Pieces due to short staple length and number 2, 3 and 4 of B group as Pak coarse, Pak medium and Pak pieces respectively. Number 3 of D as well as of E group were graded as pak Medium and the rest as Pak Super.

Considering the shearing season as a whole out of 20 samples 12 were Pak super, 3 Pak Medium, 4 Pak pieces and 1 Pak coarse. The samples from sheep of various ages did not show much variation during both the seasons as the proportions of each grade were almost similar in each age group. The two seasons were observed to show similar quality of wool i.e. Pak Super in various ages of sheep.

Haq (1955) graded Lohi wool as Pak Medium as against Pak Super in the present studies. The differences in the two findings may be due to the fact that wool from animals of only one location was used in the preseut investigations.

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