AGE RELATED CHANGES IN CONNECTIVE TISSUE FIBRES IN SKIN OF DECCANI SHEEP

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ABSTRACT
Study was conducted on twenty four Deccani sheep of different age groups to know the connective tissue fibres in the skin of Deccani sheep. Dermis presented upper papillary and deeper reticular layer, however, there was no clearcut demarcation between these layers. The collagen fibres were thin running parallel to the epidermis in papillary layer, but running horizontal to oblique direction to epidermis in reticular layer. Elastic fibres were found horizontal, vertical and oblique directions to epidermis in reticular layer. The reticular fibres in papillary layer were found in horizontal directions where as reticular layer, they were arranged in vertical.

The quality of wool is determined in terms of fiber fineness measured in microns. The Deccani sheep is one of the coarse wool fibre producing breeds in India. A very meager information is available on the fibre arrangement in skin of Deccani sheep, hence the present investigation was made.

The study was conducted on twenty-four Deccani sheep. The animals were grouped into four groups as 0-3 month, 4-6 month, 7-9 month and 10-12 months age. The skin samples from loin region were collected and then fixed in ten per cent neutral buffered formalin. The tissues were then processed at the laboratory by adopting standard methods of dehydration, clearing and embedding. The paraffin tissue sections of 5 to 6 micron thickness were stained as per Mukharjee (1988). Harri’s Haematoxylin and Eosin, Weigert’s Van-Gieson stain, Weigert’s Resorcin-fuchsin stain, Silver impregnation stain and Periodic acid Schiff (PAS) stain.

Group I (0-3 months)
The dermis of skin consisted of felwork of collagen, elastic and reticular fibres. Dermis presented upper papillary and deeper reticular layer (Fig. 1) without clear demarcation. Similar observations were also reported by Dellmann and Brown (1987) in domestic animals. Collagen fibres (Fig. 2) were observed in both layers. They were dense and thin running parallel to the epidermis in papillary layer, however, these fibers were coarse, less but running horizontal to oblique direction to the epidermis in reticular layer (Fig. 1). Elastic fibres (Fig. 2) were less in papillary layer and more in reticular layer. They were observed few in numbers as compared to collagen fibres. They were found in horizontal, vertical and oblique directions to the epidermis in reticular layer and were mostly found around the sebaceous glands and wool follicles in reticular layer (Fig. 2). Reticular fibres were more in papillary layer as compared to reticular layer. The reticular fibres in papillary layer were found in horizontal directions whereas in reticular layer, they were arranged in vertical. Oblique and horizontal directions to the epidermis. These observations could not be compared for want of similar reports in literature.

Group II (4-6 months age)
The arrangement of the collagen and elastic fibres was similar as that of Group I. The reticular fibres were abundant in both layers of demis, however, it was abundant in reticular layer of group I.

Group III (7-9 months age)
The collagen fibres were distributed around the wool follicles and sweat glands in this group, however, elastic fibres were arranged around the sweat glands and wool
Fig. 1. Photomicrograph of a section of the skin of Deccani sheep, showing a) Epidermis, 
b) Papillary layer, c) Reticular layer, 
d) Collagen fibres, e) Sebaceous gland 
(Van gieson's stain, x400)

Fig. 2. Photomicrograph of a section of the skin of Deccani sheep, showing a) Epidermis, 
b) Reticular fibres, c) Sweat gland 
(Silver impregnation stain, x100)

follicles in Group I. Elastic fibres are abundant in reticular layer. Reticular fibres were arranged abundantly around wool follicles and running parallel to the epidermis in the papillary layer.

Group IV (10-12 months age)
The arrangement of and equal distribution of collagen fibres in papillary and reticular layer of dermis was common feature in group IV. These fibres were found around the sebaceous glands and wool follicles. The arrangement of fibres in this group was similar as that of the group I, II and III.

REFERENCES