STUDY OF HAIR FOLLICLES IN RED KANDHARI COWS

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ABSTRACT

The present study was conducted on 15 female red kandhari cattle. The animals were grouped as lactating, non-lactating and pregnant cows. The hair follicles were distributed evenly in the dermis and composed of an outer root sheath, inner root sheath, cuticle, cortex and medulla. The hair follicles were frequently encircled by sebaceous glands. They were associated with the sweat glands and muscles.

Majority of the mammals are covered with hair coat, which forms the first line of defense against the invading pathogenic macro and microorganism as well as physical environment (Govindaiah and Nagaroenkar, 1983). Very less data is available in literature related to histology of skin. Hence the present investigation has been made.

The present study was conducted on 15 female red kandhari breed of cattle. The animals were grouped as lactating cows, non-lactating cows and pregnant cows. The skin biopsy samples were collected at the site of dorsal, lateral and ventral aspects at level of 7th rib. And fixed in 10% formalin. The tissue were processed in laboratory by adopting standard method of dehydration and clearing and embedding. The longitudinal and transverse section of 5 to 6 microns thickness were obtained by rotary microtome. (Singh and Sulochana, 1997). The tissues were stained by using a harries haematoxyline and eosin stain for general histology (Mukherjee, 1992), Van-Gieson’s stain, silver impregnation stain, verhosff’s stain, crossman’s modificatopn of Mallory’s triple stain per periodic acid Schiff’s stain.

The micrometry of stain histological section was subjected to statistical analysis as per the standard procedures of Panse and Sukhatme(1967).

The hair follicles were distributed evenly in the dermis and composed of an outer root sheath inner root sheath. Cuticle, cortex and medulla (Fig.1). The hair follicles were frequently encircled by two sebaceous glands in red kandhari cow. They were associated with the sweat glands and arrector pili muscles (Fig. 2).

The depth of hair follicle in the lactating cows was measured at the dorsal, lateral and ventral body region. It ranged from 266.26 to 436.58 μm, 327.02 to 464.80 μm and 551.12 to 642.42 μm with a mean of 322.87 ± 15.55 μm

<table>
<thead>
<tr>
<th>Region/group</th>
<th>Range (μm)</th>
<th>Mean ± S.E.</th>
<th>Range (μm)</th>
<th>Mean ± S.E.</th>
<th>Range (μm)</th>
<th>Mean ± S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactating</td>
<td>267.26</td>
<td>322.87</td>
<td>327.02</td>
<td>384.62</td>
<td>851.12</td>
<td>588.47</td>
</tr>
<tr>
<td></td>
<td>-436.58</td>
<td>±15.55a</td>
<td>-464.80</td>
<td>±15.55a</td>
<td>-642.42</td>
<td>±11.81</td>
</tr>
<tr>
<td>Non-Lactating</td>
<td>504.64</td>
<td>468.95</td>
<td>424.96</td>
<td>468.95</td>
<td>494.68</td>
<td>573.53</td>
</tr>
<tr>
<td></td>
<td>-657.36</td>
<td>±15.55b</td>
<td>-532.96</td>
<td>±15.55b</td>
<td>-640.70</td>
<td>±11.83</td>
</tr>
<tr>
<td>Pregnant</td>
<td>423.30</td>
<td>549.64</td>
<td>599.26</td>
<td>681.43</td>
<td>498.00</td>
<td>582.49</td>
</tr>
<tr>
<td></td>
<td>-584.32</td>
<td>±15.55b</td>
<td>-751.98</td>
<td>±15.55c</td>
<td>-635.78</td>
<td>±11.81</td>
</tr>
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N.S. = Non significant
Sig = significant at 1% level.
The depth of hair follicle in red Kandhari cow was found lower as against the higher values reported by Nay and Jenkinson (1964) in British diary cattle, Bhayani et al. (1989) in Kankarej animals. But the depth of hair follicle was found similar with the report of Bhayani and Vyas (1991) in Gir cattle.

μm, 384.62 ± 15.55 μm and 588.47 ± 11.81 μm respectively (Table 1).

The depth of hair follicle in the non-lactating cow measured at the regions of dorsal, lateral & ventral ranged from 504.64 to 657.36 μm, 424.96 to 532.46 μm and 494.68 to 640.76 μm with a mean of 468.95 ± 15.55 μm, 468.95 ± 15.55 μm and 572.53 ± 11.83 μm respectively.

The depth of hair follicle in the pregnant cow measured at the regions of dorsal, lateral and ventral ranged from 423.30 to 584.32 μm, 599.26 to 751.98 μm and 498.00 to 635.78 μm with a mean of 549.64 ± 15.55 μm, 681.43 ± 15.55 μm, and 583.89 ± 11.81 μm respectively.

REFERENCES