



EFFECT OF GROOMING IN CALVES

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Abstract

A study was conducted at University Livestock Farm and Fodder Research Development Scheme, Mannuthy. Twelve female crossbred calves between four to seven months of age were selected. Six calves formed the experimental group and the remaining six calves were in control group. The calves in the experimental unit were groomed to study the effect of grooming on body weight and skin condition for a period of 30 days. Each calf was groomed for 10 min daily in the evening hours after feeding. The initial body weights were recorded and skin condition scored. Physiological parameters like the temperature, pulse and respiration were recorded before and after grooming. On comparison of skin test score before and after grooming there was no significant difference ($P>0.05$). However border line significance was noted. The temperature has increased significantly ($P<0.05$) after grooming compared to calves without grooming, but the rate is within the physiological range of values. The pulse has increased significantly ($P<0.01$) after grooming, but it is within the physiological limit. Body weight had increased significantly ($P>0.01$) after grooming. Significant differences in temperature and pulse ($P<0.05$) were found between control and experimental group but no

significant difference was found in the case of respiration rate. This shows that there is slight improvement in the skin texture of calves after grooming. The increase in temperature and pulse may be due to the influence of grooming activity. Hence it is evident that grooming increases the body weight in calves.

Key words: Grooming-body weight-skin test-physiological parameters-calf health

Grooming comprises brushing the hair coat of animals. It is performed for cleanliness and appearance, to massage and stimulate the cutaneous blood and lymph circulation, to remove waste products like skin secretion, scurf and loose hair and to remove lice and other skin parasites from hair coat. Grooming involves all forms of body surface care and is an activity of importance to the survival and wellbeing of animals. Either directed to an individual's own body or to that of a conspecific, grooming is virtually ubiquitous among terrestrial vertebrates. Vigorous brushing also keeps skin in loose and pliable condition and brings out the natural oil in the hair. Unlike horses, farm animals are groomed rarely unless elaborately. However, grooming is essential for all show animals. Among the many possible functions

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of grooming e.g. maintenance of insulation, thermo-regulation, communication, or social relationships, parasite-removal is among the most important, because ticks are the most important ectoparasites of animals. According to Verma (1999), curry comb, body brush, dandy brush and soft cloth may be used for grooming and suggests to start brushing from the neck toward the hind quarter.

Materials and Methods

The study was conducted in University Livestock Farm, Mannuthy for a period of 30 days during Nov-Dec, 2013. Twelve female calves between four to seven months of age were selected. Among them, six calves formed the experimental group of the study and the remaining six calves are in the control group. The initial body weights were recorded and skin condition scored. Calves were groomed daily for 10 min per animals in the evening hours after feeding. Body brushes made of stiff bristles were used for grooming. The brush was held in the left hand for left side and right hand for right side and groomed from head to tail. Brushing was done in sweeps. Grooming was begun at the neck behind the ear and brushing was carried out in the same direction as the flow of hair. For removing dried mud, dung etc. sticking to hair, brushing was done against the fall of hair. At the end of each sweep the wrist was given a turn so as to bring out of coat the dust and debris which the brush collected. Face was wiped with a clean cloth. Physiological parameters like the temperature, pulse and

respiration were recorded before and after grooming. Assessment of skin condition was done before and after grooming using score card given below.

Skin test score card for calves

| Parameters | Score |
|--------------------|-------|
| Soft & pliable | 4 |
| Moderate | 3 |
| Fair | 2 |
| Rough & dehydrated | 1 |

Results and Discussion

The effect of grooming on skin texture was done by comparing the skin test scores before and after grooming in calves by using 'Wilcoxon signed rank tests'. Results of the same are given in Table 1.

Z-value was found to be non-significant at 0.05 level. However, ($P>0.05$) shows a border line significance in the Z test. Although there was no significant difference in skin test values before (1.667 ± 0.33) and after (2.500 ± 0.56) grooming, boarder line significance was noted in skin test value. This shows that there is slight improvement in the skin texture of calves after grooming. The study of Verma (1999) shows that grooming make hair coat clean, glossy and pliable, close inspection for observation of abnormalities on the body, make animal more docile and stimulate circulation of blood and lymph in the body. According to Uppal and Yadav (2002) grooming improves blood circulation and provides the elasticity and shine to the skin. By grooming the skin remain hygienic.

Table 1. Comparison of skin test score (Mean \pm SE) before and after grooming in calves

| Parameters | Before | After | Z-value | p-value |
|------------|----------------|----------------|--------------------|---------|
| Skin test | 1.667 ± 0.33 | 2.500 ± 0.56 | 1.89 ^{ns} | 0.059 |

ns-non significant

Table 2. Comparison of physiological parameters & body weight (Mean \pm SE) before and after grooming in calves

| Parameters | Before | After | t-value | p-value |
|-------------|-----------------|-----------------|---------------------|---------|
| Temperature | 102.28 ± 0.03 | 102.42 ± 0.03 | 4.000* | 0.010 |
| Respiration | 29.67 ± 1.61 | 30.67 ± 1.48 | 2.236 ^{ns} | 0.076 |
| Pulse | 62.5 ± 0.43 | 64.17 ± 0.48 | 5.000** | 0.004 |
| Body weight | 58.67 ± 3.77 | 67.5 ± 5.05 | 4.725** | 0.005 |

** Significant at 0.01 level; * significant at 0.05 level; ns-non significant

Table 3. Comparison of different parameters (Mean± SE) in control with experimental calves after grooming

| Parameters | Control | Experimental | t-value | p-value |
|-------------|-----------------|-----------------|---------------------|---------|
| Temperature | 102.283 ± 0.048 | 102.417 ± 0.031 | 2.349* | 0.041 |
| Respiration | 29.333 ± 1.282 | 30.667 ± 1.476 | 0.682 ^{ns} | 0.511 |
| Pulse | 62.5 ± 0.428 | 64.167 ± 0.477 | 2.559* | 0.027 |

* Significant at 0.05 level; ns-non significant

Comparison of body temperature, respiration and pulse and body weight before and after grooming in calves was done by using 'paired t-test'. Results of the same are given in Table 2.

In all cases except in the case of respiration rate there exists significant difference before and after grooming. The temperature has increased significantly ($P < 0.05$) after grooming to (102.42 ± 0.03) compared to calves before grooming (102.28 ± 0.03), but the rate is within the physiological range of values. The pulse has increased significantly ($P < 0.01$) from (62.5 ± 0.43) before grooming to (64.17 ± 0.48) after grooming, but it is within the physiological limit. Due to grooming, there is statistically significant increase in body temperature, pulse rate and body weight of calves.

Comparison of physiological parameters between control and experimental groups in calves was studied. This was done by using 'independent t-test'. Results of the same are given in Table 3.

Significant difference ($P > 0.05$) was noted in temperature and pulse between control group and experimental group and no significant difference were found in the case of respiration rate. However the respiration rate, temperature and pulse rate of the experimental group was within the physiological limits which show that grooming has no adverse effect on temperature, pulse rate and respiration rate of the calves. DeVries *et al.*, 2007 claims that dairy cows have a high need for grooming as was shown recently in a study using a similar cow brush system. Albright, 1986 states that through cud-chewing as well as mutual and self-grooming, aggression is reduced and there is little or no boredom. The results of

the present study show that the grooming is effective for cleanliness and also to gain body weight in calves.

The study shows that there is an improvement in the skin texture of calves after grooming. Grooming has given cleanliness and appearance, stimulated the cutaneous blood and lymph circulation to soften skin texture and to remove skin parasites from hair coat. The increase in temperature and pulse rate may be due to the influence of time of grooming activity. By grooming the skin remained hygienic and made animal more docile. From the results it is evident that grooming increases the body weight in calves.

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