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THE EFFECTS OF DIFFERENT FEEDING STRATEGIES ON CALF BIRTH WEIGHT IN CROSSBRED COWS

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Article Info

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Abstract

The study aimed to determine the effect of different feeding regimes during the pre-partum period on the birth weight of crossbred calves. Eighteen crossbred cows were randomly assigned to three treatment groups with varying feeding regimes. The animals were fed differently during the last 45 days before calving, and the birth weight of the calves was measured immediately after calving. The results showed that there was no significant difference in the birth weights of the calves among the treatment groups. Therefore, the level of pre-partum feeding did not have any effect on the birth weight of the calves in this study. The study also revealed that up to 45 days before calving, the animals in all the treatment groups were maintained on the same farm feeding.

The study suggests that farmers should focus on more cost-effective feeding regimes for animals. Given that 70% of expenditure in dairy farming is on feeding of animals in developing countries like India and other third world countries, it is essential to find sustainable feeding regimes that do not compromise the health and productivity of the animals. While improper feeding during the pre-partum phase could lead to low birth weight of newborn calves, this study proves that the level of pre-partum feeding did not have any effect on the birth weight of the calves.

Introduction

In developing countries like India and other third world countries, 70% of expenditure in dairy farming is on feeding of animals (Singh *et. al.,* 2003). Either due to lack of awareness or due to unavailability of required quantity of feed, animals are under fed in field conditions (Khan *et al.,* 2004). Improper feeding of cows during pre-partum period could lead to low birth weight of newborn calf (Sasser *et al.,* 1988). Positive effect of steaming-up on birth weight of calves was reported by Das *et al.* (2007).

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Materials and Methods

Present experiment was conducted on 18 HF x Kankrej crossbred cows which were randomly selected and distributed into three treatment groups comprising of 6 animals in each group. Animals were fed with different feeding regime during pre-partum period. Concentrate feed was not given to animals of T_1 (Farmer's feeding) group, given fixed @ 1kg/animal/d in T_2 (Modified feeding) group while in T_3 (Farm feeding) concentrate feed was given @ 500 g/animal/d in first week of experiment which was increased by 500 g every week till reaching to 3.5 to 4.0 kg/animal/d. Mineral mixture was not given to animals of T_1 group while fed @
in T 2 and T 3 groups, respectively. Dry fodder was fed on
T_1 (paddy straw), T_2 (mixture of paddy and pigeon pea straw 50:50 ratio) and in T_3 (jowar hay). Daily 10 kg green hybrid napier (Co-3 variety) was fed to all animals irrespective of treatments. Birth weight of each calf was measured using electronic platform balance immediately after calving. Observations recorded during experimental period were statistically analyzed by one-way ANOVA using SPSS software 20.00 version.

Results and Discussion

Average fortnightly DMI (kg/100kg b.wt.) was significantly ($p<0.05$) more in T_2 (1.78±0.11) and T_3 (2.03±0.15) as compared to T_1 (1.28±0.08) group. Average DCPI (g/100kg b.wt.) was 52.08±3.46, 93.81±4.28 and 129.88±8.77 in T_1, T_2 and T_3 groups, respectively which differed significantly ($p<0.05$) among each other. Average fortnightly TDNI (kg/100kg b.wt.) was significantly ($p<0.05$) more in T_3 (1.17±0.09) followed by T_2 (1.01±0.07) when compared with T_1 (0.63±0.04) group.

Average birth weight (kg) of calves during the experiment was maximum in T_3 (32.83±1.42) followed by T_2 (32.67±2.70) and T_1 (31.83±3.08) group. However, there was no significant difference in birth weight of calves among treatment groups. Present study clearly indicated that the level of feeding during pre-parturient phase had no effect on birth weight of calves. In present study, up to 45 d before calving, animals of all treatment groups were maintained on same farm feeding. After start of experiment, it might have taken few days to alter/mobilize body reserve of animals. Experimental animals had a very short period of poor body reserve before calving which might not have influenced birth weight of calves. The absence of an effect of level of pre-partum feeding on calf birth weight is similar to the results of Prasad and Tomar (1996), where they had observed that animals kept on different feeding level in cows i.e. 80, 100 and 120 % of NRC ration delivered calves with body weight of 30.5, 31.5 and 32.87 kg, respectively. Panigrahi *et al.* (2005) also reported a nonsignificant effect of pre-partum feeding on birth weight of crossbred calves. Khan *et al.* (2004) reported significantly ($p<0.05$) higher birth weight (kg) of calves from animals fed high energy (20.73±2.24) as compared to low energy diets (17.87±1.78) which is contradictory to the present study. Bindal (2012) also observed that calves of challenge fed group were 2.4 kg heavier than calves born to cows of control group but statistically the difference was not significant. Das *et al.* (2007) reported a positive effect of steaming-up on birth weight of calves. The mean birth weight of calves delivered by cows in steamed-up group was higher than the calves delivered by cows in control group (23.83 v/s 21.83 kg).

Conclusion

It may be concluded from the present study that level of feeding during pre-parturient phase (last 45 days) had no effect on birth weight of calves.

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