*Indian Journal of Animal Sciences* 67 (4) · 351-352, April 1997

# Effect of pre-partum feeding on the post-partum performance of Kankrej cows*

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Received : 7 July 1996

**Key words** : Kankrej cows, Postpartum performance , Prepartum feeding

A high plane of nutrition during dry period preceding parturition (steaming-up) promotes the growth of foetus and mammary tissues and increases body reserves, thus raising milk yield of cows in the ensuing lactation (McDonald *et al*. 1979). The present investigation was carried out to find out the effect of different levels of prepartum concentrate feeding on the postpartum performance of Kankrej cattle.

Advanced pregnant heifers (18) of Kankrej breed weighing 310 to 350 kg at 7 months of pregnancy were divided at random into groups 1, 2 and 3, and were fed, along with usual ration and a concentrate mixture @ 1, 2 and 3 kg/head/day, respectively, till calving. The usual ration consisted daily of dry fodder *ad lib*. and green fodder @ 5 kg/head a day. After calving animals were maintained on a ration consisting of liberal feeding of green fodder, dry fodder *ad lib*. and a concentrate mixture @ 1 kg/head a day for maintenance and @ 50% of milk yield for production purpose till first 100 days of lactation. The heifers were stall-fed individually and were weighed at the beginning and thereafter at fortnightly interval till 100 days postpartum, in addition to weighing just before and immediately after calving. The birth weight of calves was also noted. The data on various productive and reproductive traits (Table 1) were analysed statistically to find out the difference among the groups.

The mean prepartum body- weight gain during last 2 months of pregnancy was 31.7 ± 3.3 , 35.5 ± 2.5 and 39.3 ± 3.4 kg in groups 1, 2 and 3, respectively, and the average body weight loss at calving was 24.5 ± 1.6, 24.2 ± 0.6 and 29.8 ± 3.3 kg respectively. The maximum weight gain and loss occurred in the animals of group 3 which were fed the highest level of concentrate mixture. Further, the during first 100 days, the animals of groups 1 and 2 regained their body weight but the animals in group 3 were still in negative balance, probably due to higher milk yield . These findings agreed with the report of Kale and Tomar (1991) . The average birth weight of calves in the 3 groups did not differ.

The means of first 100-day milk as well as fat-corrected milk were in ascending order of levels of feeding in the 3 groups, yet the differences in yield were nonsignificant (Table 1) . These observations are in accordance with those of Pasinato *et al*. (1990) and Kale and Tomar ( 1991) . However, Arimura *et al*. (1981) reported significant rise in these traits due to high level of feeding prior to calving.

Table 1. Mean postpartum (first 100 days) performance of Kankrej heifers fed 3 levels of concentrate mixture during last 2 months of pregnancy

| Performance traits | Level of performance | | |
|---|---|---|---|
| | Group 1 | Group 2 | Group 3 |
| First 100-day milk yield (kg) | 475.10 ±78.20 | 549.55 ±14.38 | 581.80 ±14.15 |
| First 100-day milk fat yield (kg) | 19.04[b] ±2.62 | 23.53[ab] ±0.62 | 25.61[a] ±1.25 |
| First 100-day fat-corrected milk (kg) | 251.15 ±29.81 | 283.91 ±4.37 | 298.77 ±10.24 |
| Daily peak yield (kg) | 7.08 ±0.72 | 7.67 ±0.28 | 8.02 ±0.26 |
| Days required to attain peak yield | 42.40 ±11.86 | 58.00 ±9.76 | 57.67 ±10.93 |
| Days taken to exhibit first postpartum oestrus | 132.33 ±20.42 | 178.80 ±8.16 | 138.00 ±13.18 |

Row mean bearing different superscripts differ significantly from one another.

The average of first 100 day total fat yield differed significantly ($P<0.05$) among 3 groups. The treatments 1 and 2 , and treatments 2 and 3 were at par, whereas group 1 had significantly lower total fat yield than group 3.

*A part of the M.V.Sc. Thesis of the first author submitted to Gujarat Agricultural University, S K Nagar.

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These findings coincided well with those of Holter *et al.* (1990).The daily mean peak yield in the 3 groups did not differ significantly, but the mean number of days required to attain peak yield was lower in group 1 than in groups 2 and 3 (Table 1). The highest peak yield was attained by animals of group 3 but days required to attain this were also more than those of other groups . Contrary to this, Kale and Tomar (1991) reported highest peak in shortest time by high level of concentrate feeding in crossbred cows .

The cows under group 2 took maximum days for exhibiting first postpartum oestrus, whereas the cows in groups 2 and 3 came in oestrus much earlier than cows in group 2 . However, the differences were nonsignificant . Our findings are in agreement with those of Holter *et al* . (1990) . Contrary to this , Kale and Tomar (1991) found significant effect of levels of prepartum feeding on the onset of first postpartum oestrus in crossbred cows.

It could be concluded that feeding of more than 2 kg of concentrate animal a day along with restricted quantity (5 kg) of green fodder and *ad lib.* dry fodder during the last 2 months of gestation has no significant advantage in terms of postpartum productive/reproductive performance of Kankrej cattle except fat yield, provided they are fed good quality green and dry fodder liberally during early lactation.

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