ABSTRACT

Impaired fertility is one of the main limiting factor affecting economy of dairy industry. The relationship of nutrition and management with fertility has been well recognized. Evaluation of BCS has been proved to be a useful managemental tool for assessing the nutritional status in the dairy cows. Both high as well as low condition has been associated with reduced fertility. The present study was aimed to assess the body condition in heifers and cows during different phases of reproduction and assess its impact on fertility.

The work was conducted in the University Livestock Farm of COVAS and during clinical camps. Forty nine Jersey and Jersey X Red Sindhi crossbreed animals were selected from the farm, out of which 23 were heifers (age group=13-22 months) and 26 was advanced pregnant cows. The BCS of heifers was evaluated at 1 month interval and was related to age at first estrus and cyclicity pattern. The BCS of cows was recorded from one month before calving up to 5 months postpartum, at 1 month interval, and related to fertility indices and milk production. In addition, the reproductive status of 200 animals (cows n=146; heifers n=54) was assessed by rectal examination during clinical camps organised at various places in HP and related to their body condition score.

The mean BCS of heifers at the beginning of the study was 2.88±0.03 (range 2.75-3.25) which gradually increased up to 8 months of observations. However, the increment was not statistically significant. The heifers were first detected in estrus at mean age of 21.69±0.63 months when BCS was 2.98±0.03. A total of eighty estrous cycles were observed of these only 31 were regular. Among 23 heifers only six with least mean BCS (2.95±0.05) had highly regular while others with higher BCS (3.17±0.05, n=7; 3.07±0.04, n=10) had moderately and low regular inter estrus intervals, respectively. The BCS variation between highly regular and moderately regular cyclic animals was statistically significant. Out of
these heifers ten were considered fit for insemination and only three heifers became pregnant. The factors other than BCS may be incriminated to poor conception rates in these animals.

The BCS of cows was assessed a month before calving, at calving and up to 5 months of postpartum. Out of 26 cows 19 were cyclic and 7 remained anestrus till 150 days postpartum. There was a non significant decline in BCS at calving which continued till mid lactation. The variation in loss of BCS postpartum affected cyclicity as it was more in anestrus than cyclic animals. However, the variation was statistically significant only at 1st month postpartum.

Among the cyclic cows (n= 19) considered fit for AI, 12(63.15%) became pregnant. However, no significant effect of BCS, either at calving or postpartum, was evident on fertility indices of pregnant and non pregnant animals. The daily milk yield of cows was also recorded. The average daily milk yield of cows with higher BCS before calving was marginally higher during five months of lactation than those with lesser BCS at that stage. However, the difference was statistically significant only during second month of lactation. Difference in BCS loss postpartum due to negative energy balance might be responsible for reduction in milk yield.

Out of 200 animals presented in different camps, 54 were heifers. The mean BCS of anestrus heifers was significantly lesser than cyclic heifers (2.70±0.05 and 3.05±0.04, respectively). The differences may be due to difference in level of nutrition received by these two groups of heifers. Of the cows (n=146) examined during these camps, majority were cyclic (n= 109; 74.66%), and only few were anestrus (n=11; 7.53%). In addition, twenty six cows with the history of recent calving were also investigated. The mean BCS of anestrus, cyclic and calved cows was 2.47±0.07; 2.68±0.03 and 2.80±0.04, respectively. The body condition score of cyclic cows was significantly higher than anestrus cows.

CONCLUSION

- BCS gradually increased in heifers around puberty.
- The cyclicity was highly regular in heifers with lesser (<3.0) compared to those with higher (>3.0) BCS.
- More BCS was lost at calving, one month post calving and subsequently up to five months in anestrus than cyclic postpartum cows.
- Higher BCS before calving improved fertility post calving.
- The milk yield/day was also high in cows having higher BCS before calving.
The BCS of cyclic heifers and cows reared under rural condition was significantly higher than anestrus animals.