

Serum biochemical profiles and body condition score in crossbred cows affected with postpartum anestrus

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Abstract

A total number of 80 postpartum anestrus crossbred Frieswal crossbred cows were evaluated for body condition score (BCS). The moderate (2-2.5); good (3-3.5) and fat (4-4.5) BCS were 10.00, 82.50 and 7.50 per cent, respectively in Military Dairy farm, Hyderabad. The serum calcium, phosphorus, cholesterol and glucose profile in cyclic vs. postpartum anestrus cows were 14.53 vs.9.78; 7.88 vs.6.20; 140.58 vs.94.35 and 70.25 vs.52.25, respectively. The serum biochemical profiles were significantly lower in postpartum anestrus cows.

Keywords: Postpartum crossbred cows, BCS, Biochemical profiles.

Introduction

The body condition score (BCS) system is a cheap, easily applied measure of fatness in dairy cows and an immediate appraisal of body fat reserves. Body condition score system provides an objective evaluation of the amount of fat cover on a dairy cow disregarding frame size which accomplished by assigning a score to the amount of

condition observed by vision and palpation at several skeletal check points on a cow.

Minerals play an important role in the regulation of reproduction and production of dairy cows. Lack of calcium, phosphorous and proteins upset the proper functioning of reproductive organs. Calcium and phosphorous influences the ability of the animal to utilize other trace elements and their influence on certain enzyme system may affect reproductive efficiency hence the present paper is aimed to know the serum biochemical profiles of cows affected with postpartum anestrus.

Materials and methods

The study was conducted on Frieswal crossbred cows maintained at Military Dairy Farm, Hyderabad. All the animals were examined per rectally to ascertain the status of genital organs. 80 postpartum anestrus crossbred cows with more than 45 days postpartum

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period were selected and their body condition score (BCS) was evaluated. The body condition scoring was carried out as per the BCS-score Card as described by Balakrishnan *et al.* (1997). Cows examined by vision and palpation to indicate body condition score in a 1 to 5 scale and were classified as 1.0 – 1.5 poor (emaciated), 2.0-2.5 Moderate (Thin), 3.0-3.5 Good (Average), 4.0-4.5 Fat (Heavy condition) and 5.0 Grossly fat.

Twenty postpartum anestrus crossbred cows and twenty normal cycling crossbred cows were randomly selected for the estimation of serum biochemical profiles.

Results

The mean body condition scores of crossbred cows affected with postpartum anestrus were and serum calcium, phosphorous, cholesterol and glucose profiles in crossbred cows affected with postpartum anestrus cows were present in Tables 1 and 2. Significantly, lower biochemical profiles were found in postpartum anestrus crossbred cows.

Discussion

The body condition scoring record was in agreement with the reports of Balakrishnan *et al.* (1997), Anitha *et al.* (2005) and Berber *et al.* (2005). Pareek

Table 1: Body condition score in post partum crossbred cows.

S. No	BCS Scale	Number of cows	Per cent	Body condition score (Mean \pm S.E)
1.	1.0-1.5	-	-	-
2.	2.0-2.5	8	10	2.50 \pm 0.00
3.	3.0-3.5	66	82.5	3.23 \pm 0.29
4.	4.0-4.5	6	7.5	4.00 \pm 0.00

Table 2: Serum biochemical profiles in postpartum crossbred cows.

Serum parameters (mg%)	Post partum anestrus (Mean \pm SE)	Cycling (Mean \pm SE)	't' Value
Calcium	9.73 \pm 0.30	14.53 \pm 0.38	9.68**
Phosphorus	6.20 \pm 0.25	7.88 \pm 0.20	5.27**
Cholesterol	94.35 \pm 6.44	140.58 \pm 8.68	4.28**
Glucose	52.25 \pm 3.28	70.25 \pm 2.31	4.49**

** (P<0.01)

and Aminu Deen (1985) observed that the serum calcium levels were declined after parturition due to onset of lactation calcium stimulates the secretion of gonadal hormones and also sensitizes the female tubular genital tract (Moddie, 1965) which is supporting the present investigation but in cyclic cows the serum levels were unaltered as reported by Dutta *et al.* (2001).

Bandyopadhyay *et al.* (1997), Tandle *et al.* (1997), Joe Arosh *et al.* (1998) and Dutta *et al.* (2001) reported similar phosphorous levels. In contrast, Samand *et al.* (1980) found that the serum inorganic phosphorous level in postpartum anoestrus cows was significantly higher than in normal cyclic cows. The observation on serum cholesterol level was in agreement with the findings of Pareek and Aminu Deen (1985) and Tandle *et al.* (1997). In the present study, the serum glucose level was in agreement with the findings of Pareek and Aminu Deen (1985), and Joe Arosh *et al.* (1998). In contrast to the above findings, Dutta *et al.* (1998) found that the serum glucose level in anoestrus heifers was found to be significantly higher than in normal cyclic heifers. The present study concluded that dietary supplementation is essential in postpartum crossbred cows.

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