



# Serum Calcium level estimation in cows

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**A**mong various types of post-partum diseases milk fever due to deficiency of calcium is commonly encountered in crossbred cows. Hypocalcaemia in high producing cross bred animals result in drastic reduction of milk yield. Incidence of hypocalcaemia is common in coastal belt of Kerala compared to other regions during summer season. So we have undertaken present study to evaluate the serum-calcium level (in various stages of reproduction) during 0-3<sup>rd</sup> day of post-partum.

## Materials and Methods

Blood samples of 210 cows in post-partum 0-3<sup>rd</sup> day were collected. They were grouped into, A clinically normal and B-affected ones. Bloods samples were collected from jugular vein and allowed to clot. The serum was then separated by centrifugation and stored at refrigeration temperature until assayed. The measurement of serum calcium, phosphorus, total protein, albumin were carried out using biochemical kit supplied by "Span diagnostic India". Globulin values were calculated by subtracting albumin value from total protein.

## Results and Discussion

The animals in A group (clinically normal) were again re-grouped into C1, C2, C3 and C4-C6 according to their parity. Animals in B group constitute a single group C2-C5. The average value of each group were taken and made into a tabular form. On estimation of calcium the mean value of serum calcium obtained from A group (clinically normal) were  $10.9425 \pm 0.5275$  mg/100 ml. This was similar to Maynard *et al.* (1983), reported that normal calcium level of cattle is 9-12 mg/100 ml. According to our case study the mean calcium level obtained from hypocalcaemia case were  $5.68 \pm 0.18$ -mg/100 ml which is similar to Blood *et al.* (1994) who reported that serum level was  $5.2 \pm 1.2$  mg/100 ml. In this work we could not find hypocalcaemia in first parity.

Estimated phosphorus level in A group (clinically normal) were found to be  $4.98 \pm 0.3075$  mg/100 ml. Our observation were similar to Maynard *et al.* (1983) who recorded the normal phosphorus level 4-8 mg/100 ml. In hypocalcaemia cases the serum phosphorus level were found to be  $2.48 \pm 0.18$  mg/dl.

From the present study, the mean total protein level of A group (clinically normal) was found to be  $6.395 \pm 0.19$  g/dl (albumin  $3.6125 \pm 0.14$  g/dl globulin  $2.69 \pm 0.20$  g/dl) which agrees with Maynard *et al.* (1983), total protein 6-8 g/dl (albumin 2.1-3.0 g/dl, globulin 2.9-5.6 g/dl).

In hypocalcaemia cases the mean serum total protein level were recorded to be  $6.77 \pm 0.26$  g/dl (Albumin  $3.97 \pm 0.18$  g/dl, globular  $2.81 \pm 0.26$  g/dl) which is higher than A group (clinically normal). Reason for hike in the protein level in affected group, that is B group may be attributed to the haemoconcentration and there is seepage of solvent towards the tissue due to reduction in the ionized calcium level in hypocalcaemia.

## Summary

Blood value of 210 crossbred Sunandhini cows of coastal belt of Kerala were studied under field condi-

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Carried over to page 45