EFFECT OF MINERAL MIXTURE SUPPLEMENTATION IN POSTPARTUM CROSSBRED COWS WITH SPECIAL REFERENCE TO REPRODUCTIVE PERFORMANCE

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ABSTRACT:
Present investigation was conducted in the Guntur district of Andhra Pradesh, India. Seven villages were selected to identify 60 crossbred cattle in their immediate postpartum period. All cows were divided in to two group (Group I, Group II). Group I postpartum cows were fed with 60 gm of supplement of mineral mixture in their daily feed ration, whereas Group II (control) cows were fed only daily feed ration without additional supplementation of mineral mixture. The result showed that the mean onset of estrus was significantly (P<0.01) lower in supplementation group than non-supplementation group. In conclusion, the present investigation was designed with mineral mixture supplementation in postpartum crossbred cows with special reference to reproductive behaviour in terms of first postpartum estrus, service period, conception rate and conception rate.

Keywords: Conception rate, Crossbred cows, Mineral mixture, Onset of estrus, Service period

INTRODUCTION:
Reduction in production and reproduction is mainly result of involuntary culling due to poor body condition score, decreased fertility and some metabolic diseases; eventually it affects economy of the farm from the livestock. Daily intake nutrition is fundamental for maintaining animal health and body in good condition and facilitate to maintain their optimum production

Lower and conception rate was non-significantly lower (1.7±1.22 Vs 1.9±1.16) and conception rate was non-significantly higher (60.00 Vs 40.00) in Group I. In conclusion, provision of supplementation mixture with regular ration of feed, farmer can earn more profit from their dairy cows.

MATERIALS AND METHODS:
Present investigation was conducted in the Guntur district of Andhra Pradesh, India. Seven villages were selected to identify 60 crossbred cattle in their immediate postpartum period. All cows were divided in to two group (Group I, Group II). Group I postpartum cows were fed with 60 gm of supplement of mineral mixture in their daily feed ration, whereas Group II (control) cows were fed only daily feed ration without additional supplementation of mineral mixture.

Feeding of supplementation of mineral mixture was started from day of parturition(calving) and reproductive parameters such as, onset of estrus (days), service period (days), serviceper conception and conception rate (%) were recorded in both the treatment and control group. On the day of onset of estrus, intensity of estrus also recorded (intense, moderate and weak estrus). The statistical analysis of the data was done as per the procedures described by Snedecor and Cochran (1994).[5]

RESULTS AND DISCUSSION:
Reproductive parameters in Group I and Group II are shown in Table 1. The present investigation showed that the mean onset of estrus recorded in Group I and Group II were 43.71±1.25 and 65.02±0.59, respectively (Table 1). Onset of estrus was significantly (P<0.01) lower in supplementation group than non-supplementation group. The present findings corroborated with observations of Mudgal et al. (2014) and Gupta et al. 2017[1,6] also observed reduction in days to achieve first post-partum estrus in mineral mixture supplemented dairy animals. Similarly intensity of estrus also higher in Supplementation group than non- supplementation group. In the present study service period was significantly (P<0.05) lower in Group I when compared to Group II cows, further service per conception was non-significantly lower and conception rate was non-significantly higher in Group I. In the present study was in consonance with the findings of Behera et al. (2012)[7] who also found comparable result as they improved conception rate in mineral supplemented cattle. Similarly, Sathish Kumar (2003)[8] opined that reduced fertility and reduced or delayed conceptions are the prime signs of phosphorus deficiency and this can be overcome with proper phosphorus supplementation whereas, moderate deficiency may lead to repeat breeding condition and poor conception rate. Analysis of review literature and findings of many researchers, it opined that more than 90 percent of mineral deficiencies exist at subclinical level in every farm reared cows[9]. Low animal productivity
impaired reproductive behavior due to mineral deficiency and corrected these ailments through supplementation of various minerals.[10]

Table 1: Reproduction parameters in treatment (Group I) and control (Group II)

<table>
<thead>
<tr>
<th>Reproductive parameters</th>
<th>Group I (n=30) (Supplementation)</th>
<th>Group II (n=30) (Without supplementation)</th>
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<tbody>
<tr>
<td>Onset of estrus from postpartum (in days)</td>
<td>43.71±1.25**</td>
<td>65.02±0.59</td>
</tr>
<tr>
<td>a) Intense estrus (%)</td>
<td>70.00 (21/30)**</td>
<td>53.33 (16/30)</td>
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<tr>
<td>b) Moderate estrus (%)</td>
<td>20.00 (6/30)</td>
<td>30.00 (9/30)</td>
</tr>
<tr>
<td>c) Weak estrus (%)</td>
<td>10.00 (3/30)</td>
<td>16.67 (5/30)</td>
</tr>
<tr>
<td>Service period (in days)</td>
<td>68.02±0.11*</td>
<td>85.13±1.48</td>
</tr>
<tr>
<td>Service per conception</td>
<td>1.7±1.22</td>
<td>1.9±1.16</td>
</tr>
<tr>
<td>Conception rate (%)</td>
<td>60.00 (18/30)</td>
<td>40.00 (12/30)</td>
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CONCLUSION:

It could be suggested that supplementation of mineral mixture along with regular ration of feed in dairy cows improve their reproductive efficiency. In the context of field there was a repeat breeding syndrome in many crossbred cattle due to deficiency of vital minerals, which indirectly increase the service period length. Feeding of mineral mixture could mask the silent estrus problem in crossbred which reared under field condition. Hence, provision of supplementation of mineral mixture with regular ration of feed, farmer can earn more profit from their dairy cows.

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References: