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Short Communication

Haemoglobin and packed cell volume levels in regular and repeat breeding crossbred cows

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ABSTRACT

Haematological attributes (Haemoglobin and packed cell volume) were studied in 85 crossbred cows, which were divided into six groups. Analysis of variance revealed that there was significant effect of groups on mean haemoglobin (Hb g %) and packed cell volume (PCV %). On day 0, 16th and 45th of reproductive stage, the levels of Hb and PCV decreased significantly ($p<0.05$) in regular and repeat breeding groups. However, on day 4th and 11th Hb value did not differ significantly in all the experimental groups.

Key words: Repeat breeding, Hb , PCV, crossbred cow

Optimum levels of haemoglobin (11.71±0.12 g/dl) and PCV (33.40%) are required for the efficient transport of oxygen and they are essential for normal health and production in cows (Kumar *et al.*, 1986; Kumar and Sharma, 1991). If the normal levels of Hb and PCV are not maintained there is every possibility of upsetting the reproductive cycle which may lead to repeat breeding in crossbred cows.

Haematological parameters (Hb & PCV) of 85 crossbred cows were studied on 0 day i.e. day of estrus, 4th day, 11th day 16th and 45th day of reproductive cycle at outdoor clinics of A.R.G.O., B.V.C., Patna. These cows did not conceive even after three or more inseminations and were found to be free from any genital infections / abnormalities upon per-rectal examination. All these crossbred animals were maintained under similar traditional methods of husbandry. These animals were grouped randomly into six groups as

C_1: 10 normal cyclic cows without any treatment, C_2: 10 repeat breeder cows without any treatment, T_1: 10 mineral mixture @ 30 g. orally daily for 16 days, T_2: 10 repeat breeder cows received single im injection of 25 mg of PGF2α on 11th day of cycle, T_3: 10 repeat breeder cows have given im injection of progesterone @ 125 mg on 3rd ,4th, 5th, 6th and 7th day after AI, T_4: 10 repeat breeder cows have treated with single im injection of 100 mcg of buserlin (GnRH) at the time of insemination, according to various treatments given (Table 1 & 2). After proper detection of estrus all the experimental cows were inseminated with frozen thawed semen. Blood samples were collected, from jugular vein of each animal under aseptic condition for five different days. The blood samples were analyzed for Hb & PCV by the methods of Kolker *et al.* (1975) .Statistical analysis was carried out as per Snedecor and Chochran (1967).

The haemoglobin (g%) in normal and repeat breeder controls was found to be 9.76±0.07 to 12.14±0.08 and 9.15±0.14 to 10.99±0.19, respectively. The hemoglobin levels in repeat breeder and normal cycling control on the day estrus (day 0) were found to be 10.96±0.16 g% & 12.14±0.08 g%, respectively. The observation obtained from the study revealed that Hb levels in normal cycling was higher as compared to repeat breeder cows, but there was non significant difference on 4th & 11th day of estrus cycle & the mean Hb level was higher during estrus (0 day) in all the groups. Our

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findings are in agreement with that of Srivastava and Kharche (1986) in repeat breeder cows. However, Ramkrishna (1996) reported statistically non significant difference in Hb in normal repeat breeder cows.

Packed Cell Volume in normal cycling and repeat breeding controls were found to be 33.40±0.43 to 36.80±0.29, 31.2±0.51 to 33.2±0.74 %, respectively. On the day of estrus (0day) the PCV level in repeat breeder and normal cycling control was found to be 31.50±0.69 and 33.60±0.16%, respectively. In the present study increased level of PCV was estimated in normal cycling cows as compared to repeat breeder cows. Gujar *et al.* (1990) also reported higher level of PCV % in fertile Kankrej heifer. Lower PCV value in repeat breeder cows might be due to the anemic changes resulting in reproductive failure such as repeat breeding conditions.

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