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Short Communication

Superovulatory response and embryo recovery in Frieswal Cows using FSH & PMSG

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ABSTRACT

The studies were conducted on 15 Frieswal cows maintained under normal managemental conditions at MF, Meerut (UP). The animals were divided into two groups. Group I had 7 animals where as 8 animals were kept in group II. Group I animals were superovulated using PMSG @ 1500 IU at 10th day of cycle and Group II animals with 400 mg of FSH in multiple doses at 9th to 12th day of the estrous cycle. It was observed that 57.2% animals did not respond the superovulatory treatment in PMSG treated group as compared to 25% in FSH treated group. The superovulatory response in the animals responded to the treatment in terms of number of corpus luteum (CL) present on day 6/7th after the onset of oestrus was 7.67±1.34 and 11.33±1.85 in group I &II, respectively. The mean embryo recovered was similar in both the groups (4.3±0.67 & 4.2±0.40). The quality evaluation of embryo revealed that the mean no. of embryo under the category of good, fair and poor were 2.0, 1.67, 0.67 and 2.16, 1.5 & 0.67 in group I and II, respectively.

Key words : FSH, PMSG, superovulation, embryo, frieswal cows

Superovulation induced by the use of PMSG has been reported in various exotic and indigenous breed of cattle in our country. Variability in response with the use of PMSG as compared to FSH has been observed by various workers (Monniaux *et al.*, 1983, Elsden *et al.*, 1978). However, no reports are available for its response in Frieswal cattle. Accordingly, the present investigation was carried out to observe the comparative efficacy of PMSG & FSH in Frieswal cattle.

Fifteen adult Frieswal cows (age 4-5 yr) having milk yield more than 4000 kg per lactation were selected at Military Dairy Farm, Meerut as donors. These animals were maintained under standard managemental practices at the farm. Synchronization of oestrus in these animals were done using double dose regimen of PGF_2 alpha @ 25 mg/animal at 11 days interval. Donars were divided into two groups, (I & II) having 7 and 8 animals, respectively. Group I animals were injected PMSG @ 1500 IU where as group II animals were injected FSH @ 400 mg/animals between 9th and 12th of estrous cycle in divided doses. Oestrus was induced by administering PGF_2 after 48 h of PMSG injection in group I and along with 6th dose of FSH in group II animals. A.I. was done with frozen thawed ranked Frieswal bull semen during the superovulatory oestrus thrice at 12 hourly interval. The embryos were recovered after flushing at day 6th/ 7th of AI using PBS and were evaluated for their quality under steriozoom microscope.

It was observed that superovulatory response in the animals of group I & II was 42.8 and 75% respectively . Such variation has also been reported by Sharma *et al.* (2000), whereas Pawshe *et al.* (1992) observed 100% response in his studies on cross breed cattle. In our studies the average number of corpus luteum (based on per rectal palpation) in group I and II were 7.67±1.34 and 11.33±1.85, respectively. Although number of CL was higher in FSH treated group, however, the mean embryo recovered was similar in both the groups (4.3±0.67 & 4.2±0.40). The quality evaluation of embryo revealed that the mean number of embryo under the category of good, fair and poor were 2.0, 1.67, 0.67 and 2.16, 1.5 & 0.67 in group I and II, respectively. In

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our experiments recovery of embryo in FSH treated cows were lower (i.e. mean good quality embryos were 2.16) as compared to the report of other workers (Chauhan *et al.*, 1994; Totey *et al.*, 1992). The findings of Elsden *et al.* (1978), Monniaux *et al.* (1983) and Sharma *et al.* (2000) suggested higher embryo recovery rate and transferable embryos with FSH as compared to PMSG. Lower embryo recovery in our experimental group II animals may be attributed to animal to animal variation which has also been reported by Chauhan *et al.* (1994). Although in the present study no significant difference was observed in terms of recovery of embryos. However, these studies indicate that overall superovulatory response was higher in the animals treated with FSH as compared to PMSG.

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