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SHORT COMMUNICATION

Superovulation in Gir cross breds using follicle stimulating hormone

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ABSTRACT

Seven Gir Cross bred Cows were treated with Follicle stimulating Hormome (Folltropin, Veterpharma Inc., Canada) at a descending dose rate, over a period of four days. The superovulatory response was assesed by per-rectal palpation of ovaries and embryos recovered. The embryos were collected non-surgically and graded as viable and non viable. The average number of Corpora Lutea per animal were 10±2 while the unovulatory follicle were 1.5 per animal. The total number of embryos recovered from seven donors were forty one. The overall percentage of viable embryos recovered were 39.02% (16/41). The overall percentage of morulla and blastocysts recovered were 43.90% (18/41) and 17.07% (7/41) respectively. On an average the embryo yield per donor was 5.85 out of these 3.57 embryos were viable and transferable.

Key words: Superovulation, FSH, Cows, Embryo

At the birth an average female calf has about 1,33,000 oocytes in her ovaries. While she produces only about 6-8 calves, with the rest of the oocytes degenerating in the form of follicular atresia. Superovulation is a means, which involves the hormonal rescue of responsive follicle, resulting in several ova being fertilized through A.I or natural service. The stimulation of cattle ovaries to induce additional ovulation has been extensively studied over the past 50 years, Pawshe *et al.* (1992), Datta *et al.* (1992), Samad *et al.* (1997), all have reported better superovulatory response with FSH as compared to PMSG. Follicle stimulating Hormone (FSH) is most commonly been used to achieve this. Hence in the present study FSH was used in keeping with the findings of several research workers.

Seven Gir crossbreed Cows were selected based on their physical health and reproductive soundness. Care was taken to ensure that the donors were more than 100 days and less than 250 days postpartum. A body condition scoring chart was used to evaluate physical soundness as per Edmonson *et al.* (1989). All donors were administered 400 mg of P-FSH (Folltropin, Veterpharma Inc., Canada) intramuscularly for four days at tapering dosage, similar to Bo *et al.* (1991) and Hackett and McAllister (1992). A single injection of Prostaglandin was injected on the third day morning during the FSH schedule. The donors were inseminated artificially thrice at 12 hours interval using high quality frozen semen straws.

The superovulatory response was judged on the basis of Corpora Lutea counted on per rectal examination and the embryos collected. The cows were flushed on the 7th day non-surgically. The embryos collected were isolated and graded as viable and non-viable. The grading were as per G.G. Manual (1988).

All seven (100%) donors responded to superovulatory treatment. The per-rectal examination revealed on an average of 10±2 corpora lutea on either of the ovaries. The findings were similar to Pawshe *et al.* (1992) who have reported 10.44±2.3 number of Corpora Lutea using similar hormone schedule.

In all 41 embryos were recovered from the seven donors. The average number of viable embryos recovered were 60.97% and non-viable embryos recovered were 39.02%. Each donor on an averaged yielded 5.85 embryos, of these 3.57 were transferable. The recovery percentage of embryo was similar to Holy *et al.* (1991). The average yield of embryo per donor in this study

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was similar to that recorded by Coelho (1989) who recorded 5.5 embryo recovery in Girs and 3.2 transferable embryos. Basile *et al.* (1994) reported an overall recovery of 5.42 embryos in Holstein using FSH-P, similar to the observation of the present study. Riha (1988) and Vorontsova *et al.* (1988) recorded 3.71 and 3.5 viable embryos in a similar study, while Goto *et al.* (1992) reported 4.6 viable embryos. Thus, FSH-P can be used for superovulation in Gir Cows.

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