

Superovulation

238 Superstimulation of Nelore prepubertal heifers using a long-acting recombinant human FSH: effects upon oocyte yield and *in vitro* embryo productionR. Moura^A, L. Martins^A, C. Fernandes^B, L. Siqueira^C, R. Figueiredo^D, M. Peixer^E, M. Xavier^E and J. Viana^{A,D}^AUniversidade de Brasília, Brasília, DF, Brazil^BUniversidade de Alfenas, Alfenas, MG, Brazil^CEmbrapa Gado de Leite, Juiz de Fora, MG, Brazil^DEmbrapa Recursos Genéticos e Biotecnologia, Brasília, DF, Brazil^EBio Biotecnologia Animal, Brasília, DF, Brazil

The aim of this study was to evaluate oocyte yield and *in vitro* embryo production (IVEP) in prepubertal heifers submitted to ovarian superstimulation with a long-acting human recombinant FSH (rhFSH) followed by ovum pickup (OPU) and IVEP. Nelore heifers ($n = 90$) at ~8 months were randomly allocated into 5 groups: (1) control (CG), no pre-stimulation; (2) 10 mcg rhFSH SC (Corifollitropin Alpha, Shering-Plough) and OPU 96 h later (FSH96); (3) 10 mcg rhFSH SC and OPU 120 h later (FSH120); (4) 200 IU equine chorionic gonadotrophin (eCG) IM (Sincro eCG, OuroFino) and OPU 96 h later (eCG96); (5) 200 IU eCG IM and OPU 120 h later (eCG120). Nelore mature cows ($n = 10$) were used as a reference for IVEP outcomes. Ovaries were considered as superstimulated if average follicle size at OPU was >7 mm. OPU and IVEP were performed by the same team of technicians, using standard commercial procedures. Data were analysed using the Glimmix or Npar procedures of SAS. Only heifers receiving rhFSH presented effective ovarian superstimulation (100% in FSH96 and 92.3% in FSH120 vs 13.3% in eCG96 and 0.0% in eCG120, respectively; $P < 0.0001$). Vaginal mucus discharge was more frequently observed for FSH120 heifers than for FSH96, eCG96, or eCG120 (69.2% vs 20.0%, 6.7%, and 20.0%, respectively; $P < 0.0001$). The use of rhFSH increased the proportion of Grade I COC compared with eCG or controls (37.6% and 24.8% for FSH96 and FSH120 vs 10.8%, 13.6%, and 14.1% for eCG96, eCG120, and CG, respectively; $P < 0.0001$). However, rhFSH also increased the proportion of expanded COC (10.2% and 22.3% for FSH 96 and FSH120 vs 1.7%, 1.7%, and 0.0% for eCG96, eCG120, and CG, respectively; $P < 0.0001$), resulting in a lower proportion of viable COC in rhFSH-treated groups (71.8% and 66.9% vs 88.0%, 88.6%, and 85.5%, respectively; $P < 0.0001$). Moreover, total COC were lesser for FSH120 compared with CG ($9.3 \pm 1.2b$ vs 21.6 ± 1.9 ; $P = 0.0034$), though similar ($P > 0.05$) to the other groups. Data on IVEP of FSH96 COCs was discarded due to contamination during IVEP. Blastocyst rate using mature cows COC was similar to FSH120 (54.5% vs 41.4%; $P > 0.05$), but greater than eCG96, eCG120, and CG (30.8%, 24.9%, and 35.4%, respectively; $P < 0.0079$). In summary, treatment with rhFSH was effective to promote superstimulation in prepubertal heifers with a single SC injection. However, the potential benefits of a long-stimulatory protocol using rhFSH have been overshadowed by a decrease in both total number and proportion of viable COC recovered.

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239 Effect of dietary flaxseed supplementation on folliculo-endocrine, superovulatory response, embryo quality, and pregnancy rate in Sahiwal cowsD. K. Kohli^A, D. B. Kumar^A, D. P. Chandra^A, D. K. Narayanan^A and D. S. K. Singh^A^AIndian Veterinary Research Institute, Bareilly, Uttar Pradesh, India

Increasing the dietary energy through saturated or unsaturated fat improves the reproductive indices in the high yielding dairy cows. Sahiwal is an excellent indigenous milch breed of India. To conserve the Sahiwal breed and exploit the genetically superior females, multiple ovulation embryo transfer (MOET) is an established technique. We hypothesised that flaxseed supplementation during the window of superovulatory protocol would improve the ovarian response to superstimulation, embryo quality, and pregnancy rate in the Sahiwal cows. The present study was conducted at Cattle and Buffalo farm, ICAR-IVRI, Izatnagar, India. The experimental Sahiwal cows ($n = 20$) were selected and divided into two groups, control ($n = 10$) and treatment ($n = 10$). The treatment group was supplemented with crushed flaxseed at 300 g/100 kg bodyweight once daily for 40–42 days from the day of oestrus (Day 0), while the non-supplemented group served as control. The superovulation protocol was started in donor Sahiwal cows on the ninth day of the oestrous cycle. FSH was given in eight divided