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Recent trends in reproductive biotechnology in livestock

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Rapid propagation of livestock with higher production potential is the need of hour to meet the demand of feeding burgeoning population of the world. Adopting reproductive biotechnological tools like *in vitro* embryo production, ovum pick up, somatic cell nuclear transfer/cloning, preantral follicle technology, transgenic animal production etc., will help in the faster multiplication of high producing livestock. Application of techniques like transgenic animal production will also help in production of important biological substances of human importance like human lactoferrin in milk of the transgenic cows. To take the technology of *in vitro* embryo production and embryo transfer to the farm level in developing countries, a major hindrance has been the cost factor. In order to economize the production of *in vitro* embryos, expensive inputs like Follicles Stimulating Hormone (FSH) and Fetal Calf Serum (FCS) have successfully been replaced with Pregnant Mare Serum Gonadotropin (PMSG) and steer serum, respectively. Ovum pick up (OPU) technology provides a continuous supply of high quality oocytes from elite cows with assured genetic merit for the production of high yielding cows. Trans-vaginal ovum pick up using ultrasound facilitates two sessions of ovum pick up in cattle and buffaloes. One more technology that can supply higher number of oocytes is preantral follicle technology. Though offspring could not be produced using this technology in farm animals, embryos could be produced from pig, sheep, goat and buffalo during the last decade. These reproductive technologies turn around the livestock production in developed countries, however the success rate and cost factor are prohibitive for adopting them in developing and poor countries.

Biography

P S P Gupta has been working in the area of Reproductive Biotechnology for the past 25 years. He has been a Visiting Scientist at the Laboratory of Reproductive Genomics of Michigan State University, USA under the DBT-CREST award program. He has been working in various capacities in Agricultural Research Service of ICAR since 1991 and currently working as Principal Scientist at Animal Biotechnology Laboratory of ICAR-NIANP, Bangalore. He has also worked as Professor and Head of the Department of Veterinary Physiology at Veterinary College, Hyderabad for two years. He has several research articles in reputed international journals in the area of reproductive biotechnology to his credit. He has also been a Reviewer for reputed international journals.

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