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The current and future assisted reproductive technologies for the livestock animals

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C uccessful reproductive technologies such as artificial insemination (AI), superovualation, ovum pick up and embryo transfer need to be applied on a large scale in future. Other emerging animal biotechnologies such as multiple ovulation & embryo transfer (MOET), in vitro embryo production and cloning provides powerful tool for rapidly changing the animal populations, genetically. The focus will be more on technologies that manipulate the female gamete. Synchronization of cows oestrus is one of the ways to regulate the estrus signs detection and it reduces time and labour cost. The AI is the oldest animal biotechnology and it is still a vital technology for improvement of livestock. Improvements in methods to cryopreserve/freeze and store semen have made AI accessible to more livestock farmers. The MOET is a crucial tool for the implementation of genetic improvements and conservation programs of endangered livestock, it is the method of choice for germplasm control. However, its utilization is limited due to the variability that exists in predicting the quality and quantity of transferable embryos that will be recovered following administrating of FSH and flushing. The technology for in vitro oocytes maturation, fertilization and culturing requires suitable mediums and skills so that viable embryos can be produced. Therefore produced embryo in vitro or in vivo may then be transplanted into the recepients of cryopreserved/frozen for future use. The principles of cloning happens quite frequently naturally. This means the cloned animal is an exact duplicate in every way of its parent, it has the same exact DNA. Therefore, animal biotechnology is crucial to other interventions in the reproductive process such as, control of seasonal breeding, hormonal regulation of ovulation, estrous and pregnancy establishment etc. This advanced reproduction technologies will definitely play an important role in the future perspective and visions for efficient reproductive performance in livestock industry/agricultural biotechnology.

Biography

Mphaphathi M L has completed his Master's degree from Tshwane University of Technology. He is working as Researcher, at the Agricultural Reserch Council. He has published more than 07 papers in reputed journals and has been an manuscript reviewer. He is the member of the International Embryo Transfer Society (IETS).

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