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Advanced techniques for embryo transfer in dromedary camels

As the reproductive efficiency of camels is low under natural pastoral conditions the use of embryo transfer is becoming much more popular to increase the reproductive potential of female camels. Good pregnancy rates of 65-75% are achieved after transfer of fresh day 7 embryos into day 5 or 6 recipients. Synchronizing ovulation between donors and recipients, however, poses problems as camels lack the cyclical corpus luteum of spontaneous ovulators. This means that conventional methods used in cattle that involve giving two injections of prostaglandin 11 days apart are unsuitable for use in camels. More recent studies have shown that pregnancy rates of between 50-70% can be achieved in recipients that ovulate too early (i.e. before the donor is mated) if they are treated with meclofenamic acid to maintain the CL, and in recipients that ovulate too late if they are maintained on progesterone from two days before transfer to five days post transfer. However, pregnancy rates are dramatically reduced to <40% after transfer of frozen/thawed embryos. Several factors could contribute to this reduced embryo viability post-thaw, including size of embryo, physical injuries caused by intracellular and extracellular ice formation, cryoprotectant toxicity, osmotic stress and chilling injuries. In addition, freezing and thawing can irreversibly disrupt the organization of an embryo's cytoskeleton and thereby reduce its ability to subsequently develop, so further work is required to improve slow-freezing and vitrification techniques so that pregnancy rates increase after transfer of frozen/thawed embryos.

Biography

Julian L Skidmore has completed her Graduation from University of Cambridge (UK) with a PhD in "Reproduction of the dromedary camel" in 1994. After completing her PhD in 1994 she has remained at the Camel Reproduction Centre in Dubai, United Arab Emirates, as Scientific Director leading a team of scientists covering all aspects of camel reproduction physiology with particular emphasis on embryo transfer of fresh, cooled and frozen embryos, artificial insemination of fresh and frozen semen and hybridization of New and Old-World camelids.

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