

ALPACA RESEARCH AT THE UNIVERSITY OF SYDNEY BY DR. KATHERINE MORTON

FROM ALPACA HMMM... SPRING 2005

The University of Sydney's Centre for Advanced Technologies in Animal Genetics and Reproduction (ReproGen) has received RIRDC funding to conduct research into the collection, preservation and freezing of alpaca semen, and artificial insemination in alpacas. Professor Chis Maxwell is in charge and the project leader, post doctoral research fellow Dr. Katherine Morton, will be assisted by Peruvian-born Ph.D. student, Jorge Reyna.

ReproGen is an independent research centre with The University's Faculty of Veterinary Science. Professors Gareth Evans and Chis Maxwell head the reproduction group; both have had long and successful careers in the preservation of semen, and are regularly invited to present their research at international conferences. Research currently being undertaken in the group includes the sexing of fresh and frozen-thawed sperm in sheep, cattle, pigs and horses, and the production of pre-sexed offspring from AI and embryos produced in vitro.

The alpaca research project will be going beyond previous studies which have had variable results. This project will investigate storage, preservation of both ejaculated and epididymal sperm. It will also examine and test preservation techniques, investigate novel supplements to maintain sperm viability and compare various methods of artificial insemination in alpacas. To date, Dr. Morton's research into alpacas has involved the use of epididymal sperm (sperm obtained from the epididymis and testes of deceased or castrated males)

As project leader, Dr. Morton, will be

The results of Dr. Morton's research with alpaca testes show that they can be transported simply without complicated and expensive equipment, and the sperm still remain viable. Alpaca testes were transported for 12 hours and then the extracted sperm (Figure 2) were frozen. When thawed, 50% of them were motile (alive), which is a comparable with the results obtained for sheep and cattle epididymal sperm. Epididymal sperm can be used to create a gene bank, allowing a dead male to breed years later. Recent research at the University demonstrated that 35 year old frozen ram sperm produced healthy lambs using AI.

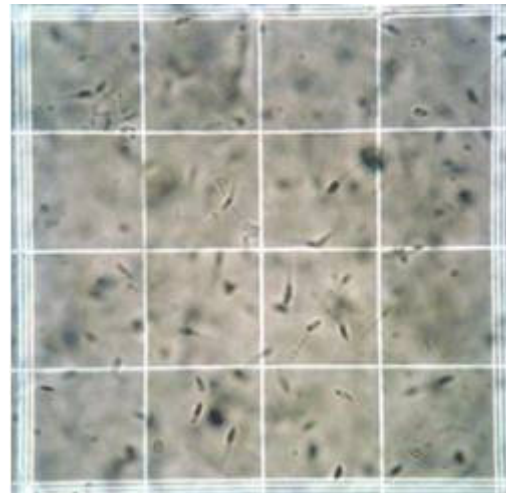


Figure 2. Alpaca sperm in counting chamber

Epididymal sperm nuclei (sperm with the tails removed) are also being used to establish the sex-sorting procedure for alpaca sperm, and have been separated into male and female populations with a purity of 91%.

The commercial application of sperm sexing is still a long way away. However, the commercial banking of frozen epididymal sperm is closer. For

specialising in the research involving sperm from the donated testes of castrated males and from the donated males. Semen will be collected by Jorge Reyna who has collected alpaca semen using a mannequin (Figure 1)

Jorge is currently re-designing the mannequin to more closely resemble the anatomy of a female alpaca, which he believes will improve the quality of the semen and may help reduce the variation in the quality of the semen collected. To establish the research on the collection of ejaculated sperm, we are asking breeders to donate (or lend) males. For further information on this aspect of the research, contact Jorge Reyna (Email:jorger@vetsci.usyd.edu.au).



Figure 1. Male 'mating' with the mannequin

this research to continue we are asking breeders who are castrating older males (2 years plus) to donate the testes. For further information on this aspect of the research please contact Dr. Morton.

We are very keen to hear from interested alpaca breeders.

For further information please contact the author at the Centre for Advanced Technology in Animal Genetics and Reproduction (ReproGen), Gunn Building, B19, Faculty of Veterinary Science, The University of Sydney, 2006.

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