

Embryo Transfer in Alpacas
Jane Vaughan BVSc PhD MACVSc



PO Box 406, Ocean Grove, Vic 3226
www.criagenesis.cc

Abstract

The development of artificial breeding technologies in alpacas will increase the use and allow more economic movement of genetically superior animals nationally and internationally. Generation intervals are relatively long in alpacas because males are slow to sexually mature and females exhibit an extended gestation (11.5 months), so conventional breeding results in slow genetic gain. Assisted breeding technologies are being used to improve wool quality more rapidly than would otherwise be possible by natural mating in industries such as Merino sheep and Angora goats.

The reproductive physiology of alpacas differs to that of other domestic livestock and remains poorly understood, therefore hindering the direct transfer of artificial insemination (AI) and embryo transfer (ET) technologies from ruminants to alpacas. The understanding of ovarian function in alpacas has been instrumental in the success of developing non-surgical, transcervical single and multiple ovulation ET.

Single-ovulation embryo transfer of alpacas does not require any hormonal treatment of donor females. Donor females are mated once and flushed a week later. More than 400 live births (50 % males, 50 % females) have occurred over the last 8 years in Australia, following single-embryo flushing performed by the author in numerous commercial alpaca herds. Donor females have since given birth to crias from matings performed soon after embryo flushing, indicating donor fertility was not interfered with during embryo collection. Methods of multiple ovulation and embryo transfer (MOET or 'superovulation') are also being implemented in alpacas in Australia and other countries.

Embryo transfer can rapidly increase numbers of crias born to superior females. Embryo transfer also allows breeders to determine optimal male/female combinations as multiple sires may be used over the same female in one year. Embryo transfer will give smaller breeders access to elite genes through purchase of embryos and will allow for inter-farm/state/national movement of superior genetics.