Factors Affecting Success in Large Scale Alpaca Embryo Transfer

Julio Sumar
DVM,MSc,FRVCS
Box 05, Post Office, Cusco, Perú

The only practical way to speed up the improvement of the genetic merit of the alpaca herd is by way of the Embryo Transfer Technology. In the last 30 years, many South American countries suffered from what is called "Genetic erosion", mainly from exportation of a large number of breeding males and females to many countries of the world. During 2006–2008, a large scale ET in alpacas has been performed by the SUMAC TARPUY ET Lab at Ayaviry, Puno, Perú. With some changes introduced to protocols already existing in the literature, plus those generated by us before and during all the ET process of three years, we were able to collect up to 75% of embryos from donors, and an average of 53% of pregnancy rate at 45 days after transfer. The main factors that affected our results can be summarized as following: (1) the uterine lavage and embryo implantation was done for trained technicians and veterinarians, with small hands (≤20 cm of diameter at the level of the carpal bones). In this way painful stress of introducing the hand in the rectum is diminished, and no tranquilizer were used; also small hands can remove the feces from rectum, and place intrarectally the probe of the ultrasound equipment, over the different parts of the genital organs, for a more precise visualization and image; (2) the receptor females should at least have a cría; (3) lactating females should arrive to parturition at a BCS higher than three and receive a high level of energy; (4) the minimum BCS should be no less than 2.8 (in a scale 1 to 5); (5) superovulation was avoided and only one embryo was recovery en each follicular wave, during all the year round; (6) place the embryo in the left uterine horn of the recipient; (7) the length of the hoses (cows tubing) for recovery of the embryo, should be diminished in length, to avoid unnecessary fluid travel and possibilities to stick or get lost in some place of the large hose; (8) gentle manipulation of the animal and genital organs and scrupulous hygiene during recovery and implantation to avoid genital infections; (9) apply PGF2α only to those females were embryo lavage was not successful; (10) detailed records of the male and female donors and recipients females plays an important role in detection of low fertility animals; (11) avoid overhandling the donor and recipient, ultrasound them at the same day of embryo recovery, avoiding the Day 5 ultrasound for ovulation diagnosis: (12) donor females must become pregnant after one year of embryo donation and avoid overusing and finally, (13) female llamas are excellent receptors of alpaca embryos for its bigger size and milk production, having the crias more weight at birth than alpaca crias born from alpacas. In addition, research studies into certain reproduction mechanism would be greatly enhanced by the ET technique.