

## Practical Considerations of ET in Alpacas

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### 1. Continuous Cycling vs. Superovulation

There are two basic strategies for producing embryos for transfer. The simplest is called “**continuous cycling**”. We know that the alpaca and llama, cycle continuously, providing good nutrition the year round. Therefore, a donor female alpaca cycling between 12–14 days, an embryo is expected from about 85% of these flushes. In practice, the ET Lab. of SUMAC TARPUY in Puno, Peru, produced an average of 12 embryos per year.

The other technique for produce embryos is called “**superovulation or superstimulation of the ovaries**”. Superovulation is a treatment with hormones (FSH alone, eCG alone, or sometimes a combination of both), to induce the formation of more than the normal single follicle usually produced on each cycle in cattle, horse, sheep, etc.

Non-mated camelids, produce follicles in waves, with no Corpus Luteum formation, unless interrupted by “spontaneous ovulation.” In case of “spontaneous ovulations,” or mating with vasectomized males, females return to produce a new wave of follicles 12 days after the previous ovulation. In general, the alpaca ovaries contain many follicles in different stages of development.

Data of our Laboratory, embryo production from ovulation in Camelids is extremely variable from one animal to another; actual results varying between zero, and 10, or even more. Llamas have should have at least 4 months between FSH treatments for their cycles to return to normal and subsequent FSH be effective. In alpacas there is no enough scientific information, regarding in-between treatments, either using eCG, or FSH, or a combination of both. The most common superovulation protocols, are: (a) P4 based and FSH, (b) P4 and eCG, (c) P4 and a combination of FSH and eCG, (d) No P4 and eCG alone when no CL is present. The literature presents many other procedures to superovulate alpacas and llamas, two different species.

### 2. Embryo Transfer without Exogenous Hormones

The ideal ET technique will be non-using any kind of hormones, at all.

However in the alpaca and llama, non-cycling animals, and induced ovulators, the non-exogenous hormone technique (NEH) is possible, allowing all the year round collection and transfer, providing a very good nutrition. Vasectomized alpacas, has been mainly used only in Peru, for scientific purposes, for a more natural sterile induction of ovulation, and for identification of receptive or “in heat” alpacas.

Synchronization in receptor females can be done with vasectomized males, and after embryo recovering in donors, at 7–8 days after mating, females will be in heat at 12 to 14 days. Only in cases where the embryos were not recovered, we can use prostaglandins, after ultrasonographic detection of a CL presence. A small trial has been done in our lab, and a large scale study is undergone in our Lab.