Effect of recipient lactation status on pregnancy rate following embryo transfer in alpacas (*Vicugna pacos*)

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Large scale alpaca embryo transfer programs are often hindered by lack of suitable recipients. The objective of the present study is to determine the effect of the lactation status (LS) on the pregnancy rate following the transfer of embryos in alpacas.

A herd of recipients made up of alpacas taken from traditional herds in different communities was placed on natural pastures and given periodic supplementation of oats and alfalfa hay. The body condition score (BCS) ranged from 1.5 to 3.5 (1 to 5 scale). Only females with a BCS ≥ 2.5 were used as recipients. During two breeding seasons (2007 and 2008), 705 embryos were collected non-surgically from an elite herd of 66 females and 19 breeding males. Of these, 54 (7.7%) were discarded after evaluation and 651 were transferred either to alpacas with cria at foot (lactating, n=291) or to non-lactating alpacas (n=360). Recipient follicular activity was monitored by ultrasonography and suitable recipients were induced to ovulate and matched to bred donors when they had a mature follicle (≥ 8 mm and ≤ 12 mm). Ovulation was induced with buserelin (8.4 µg, IM, Conceptal®, Intervet, Lima, Peru). Ovulation was confirmed at the time of transfer by transrectal ultrasonographic visualization of the corpus luteum. All embryos were collected on day 7.4 post-breeding and transferred non-surgically within 20 minutes of collection. Pregnancy diagnosis was performed by ultrasonography eight days post-transfer. Pregnancy rates in lactating and non-lactating alpacas were compared by chi-square analysis. The overall pregnancy rate following transfer was 33%. The pregnancy rates for non-lactating (44.4%) and lactating (18.2%) recipients alpacas were significantly different (P<0.001).

These results clearly demonstrate the effect of lactation on pregnancy establishment and maintenance. This effect may be due to negative energy balance and weight loss or other mechanisms that may interfere with corpus luteum function. These factors as well as the effect of nutritional supplementation of lactating recipients under Peruvian pasture conditions on pregnancy rate following embryo transfer are being investigated at present in our laboratory.

**Keywords:** Embryo transfer, energy balance, pregnancy rate