

## **BUYING THE BEST OVEN**

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With the adaptation and refinement of Embryo Transfer (ET) techniques for alpacas, breeders are increasingly turning to this technology to accelerate genetic gain in their herds. Put simply, ET takes a fertilised egg from one female alpaca (the donor), and implants it into another female alpaca (the recipient). The recipient then carries the pregnancy, delivers the cria, and raises it as her own, whilst the donor can be mated again, either to carry her own cria, or to be used again as a donor.

This has created a demand for open females which can be used as recipients, typically those females considered by their owners as being of genetically inferior quality, and therefore not worth the expense of mating to genetically superior males. These animals, often referred to dismissively as “ovens” by those planning to use them in ET programs, are frequently offered for sale at attractive prices, well below the market average for female alpacas, and are eagerly purchased by those planning to embark upon an ET program.

Whilst the “ovens” may be relatively cheap, the ET process certainly is not, and each successful ET cria is not only valuable (reflecting the genetic superiority of its sire and dam), but also costly, reflecting the variable expenses created in the process of setting up an ET program. Implantation of precious embryos into recipients that have not been carefully selected is like putting your eggs into a thin paper basket, with outcomes that are far from certain.

In short, breeders should expend as much effort on recipient selection as they do on donor selection, to safeguard their investment in ET.

So what constitutes the ideal “oven” for an ET cria? Well, one thing clearly it is *not* is a female with desirable fleece characteristics. The cria will have none of its host’s genetics, and any characteristics in the recipient that are not indicative of its ability to sustain a term pregnancy and raise a live cria are irrelevant.

The ideal recipient is therefore one which has *proven* ability to deliver a fullterm healthy cria, and to feed it and nurture it to weaning. Maidens are therefore clearly inappropriate, as are those with complicated obstetric histories, difficulties in conception, or a history of slipped pregnancies. Ideally, they should have a proven obstetric history of having successfully raised two or three cria in consecutive years. They should also be in optimal health, with good body condition: animals that are lean may be in poor health, whilst overweight animals may have difficulties in labour. They should be robust animals, reflecting their ability to survive environmental threats, but conformational faults (such as bowed legs, kinked tail, jaw abnormalities, ear abnormalities, etc) are relevant only if they foreseeably compromise their ability to thrive and survive.

An important observation is the ability of the recipient to nurture a cria, reflected in their interest and concern in raising previous crias, and their ability to produce adequate quantities of milk. Animals which have rejected previous cria, have abnormalities of their teats, are poor milk producers, or whose previous cria have not thrived, are all unwise choices as recipients. Those which demonstrate strong maternal instincts in protecting their young are to be preferred.

Clearly, age is also an important consideration. As alpacas grow older, they are more prone to degenerative disease and illness, and are more likely to experience difficulties in conception, sustaining a pregnancy, and delivering a live cria. Whilst vendors are likely to offer their older culls for sale as “ovens”, the astute purchaser will be looking for relatively young animals around four to six years of age, with a proven obstetric history, and the prospect of longterm service as an ET recipient.

The simple message is that a “cheap female cull” is not the criterion on which to choose a recipient for an ET program. Buyers should insist on a medical and obstetric history, as well as a thorough inspection of the animal, before committing to purchase a female as a potential recipient, irrespective of the price at which it is offered. *Precious embryos should not be wasted on recipients of unproven ability to grow, deliver and rear them.* The difference in price between a “female cull” and an ideal recipient will become rapidly irrelevant after one or two ET cycles.

Remember, your cake can only be as good as the oven in which it is cooked, irrespective of the quality of the ingredients. As any chef will advise . . .

*Get the best oven.*

*Selection criteria for recipients*

- *Age*
- *Health*
- *Robustness*
- *Obstetric history*
- *Reproductive history*
- *Mothering instincts*
- *Milk production*

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