

# The Punch and Judy Show



## ELITE SEX, STUDS, MOET, AND THE MONEY

This is a story about the big spenders, the studs, the macho types, who travel extraordinary distances for expensive sex with multiple partners, boasting big egos, big reputations, and an addiction for Moet.

Kind of brings the alpaca industry to life, doesn't it?

But this is not Michael Flatley laying waste a chorus line of Irish beauties in an orgy of champagne and post-performance hubris, but rather the expensive act of Multiple Ovulation Embryo Transfer (MOET) which is attracting the serious attention of alpaca breeders around Australia.

The key is the careful selection and appropriate preparation of genetically elite donor females. Properly prepared, these girls can produce up to 20 embryos from a single joining to an elite male, each one of which can then be taken and reimplanted into less genetically desirable females, who in turn bear them to maturity, deliver them, and raise them as their own.

This is the science of multiple ovulation embryo transfer that is reshaping the alpaca world, and rapidly accelerating the genetic improvement of the Australian alpaca.

But whilst the technology is new, the problems are more complex than the science alone. The matter of a fair and reasonable service fee for MOET matings remains a difficult one, so much so that many owners are choosing to withhold their males from embryo transfer programs.

Present fee schedules range from charging out at the rate of a full service fee for every embryo implanted, to the complex matrix published by Illawarra Alpacas, which recognises a flag fall, embryo implantation fee, and live embryo fee for every mating.

*Whatever arrangement is agreed to, it is a fundamental premise of fairness that the arrangement be equally acceptable to the two parties as either a vendor or as a purchaser of stud services.*

Some general principles should be recognised and accepted as the basis for any fee schedule.

The attraction of MOET for the owner of the female (hereinafter “Judy”) is the opportunity to produce multiple “copies” through a single joining of an elite male with an elite female, producing many cria within a very short time, with the consequent benefit of accelerated genetic improvement, enhanced reputation in the showring, and improved sales of stock.

The attraction of MOET for the owner of the male (hereinafter “Punch”) is limited principally to the opportunity to produce income. Although it might be argued that the production of multiple elite cria adds potential value to the male’s reputation, and therefore the male’s marketability and that of his progeny, that advantage is high risk and long term, and therefore of no practical value.

MOET is, as yet, a far from certain science, with a variable success rate which ranges from catastrophic to sensational. Harvest rates average between 2 and 3 embryos/donor, implant rates slightly less, and “stick” rates of only about 60% of implanted embryos yielding live crias.

Providing a male for an embryo transfer program is an entirely different proposition to a drive-through mating. The male has to be prepared by withholding him from other services for a few days beforehand, and then is usually “flushed” with a single timed service at some chosen point before the MOET. This preparation is undertaken by Punch on behalf of Judy. Furthermore, the male has to be delivered to the place the MOET is being undertaken, usually the stud owning the females, on a specified date, and for a period of time, that is dictated by Judy, usually resulting in a minimum half-day commitment, and frequently longer, for Punch. For the period of time the male is being prepared and used, there is a notional “lost opportunity”, during which time he remains unavailable for any other work.

For Punch, charges need to cover (at least):

- The time taken to prepare, deliver, and return the male to and from the place of service
- A fee that recognises the qualities that make the male desirable for a MOET program (as opposed to single matings), namely, his genetic superiority
- A fair price for every live cria resulting from the mating

Generally, the issue of time and mileage for delivery of the male to the place of mating should be considered separately from the mating fees, as it is likely to be widely variable depending on circumstances.

It is generally conceded that there is a risk of zero live cria resulting from any given ET joining. Judy accepts the unrecoverable veterinary costs as a part of that risk, but there may be no recognition of the cost of “lost opportunity” to Punch unless that is specifically provided for in the mating contract. Remember, the fundamental benefit of a MOET program—accelerated genetic improvement—accrues exclusively to Judy; Punch has only one benefit, which is his fee. Any contract that does not recognise the risk of zero return to Punch, and compensate for it, is doomed to fail, since it will prove neither attractive nor financially sustainable for Punch.

The “Illawarra matrix”, excluding the actual fee charged for each component, is based on a formula:

$$\$Flagfall + \$Embryo\ implanted(x\ X) + Live\ cria(x\ X) = \$Total\ fee$$

The logic behind the matrix is as follows. Flagfall (F) is Punch’s guarantee of a minimum and immediate return for making the male available for any given mating; live cria (LC) recognises the uncertainty of producing live cria for Judy; and embryos implanted (EI) shares the potential windfall of multiple live births between Punch and Judy. The starting point is that the fee for a single cria born as the result of a MOET program should never be less than that charged for a single drive-thru mating (in fact, it should reasonably be more, given the time and effort involved in making the male available).

“Flagfall” (F) is the service fee that applies for any one mating, irrespective of the outcome of that mating. Whilst it is Punch’s guaranteed minimum income, it also effectively determines the level of discount given for multiple embryos resulting from a single mating (the discount rising with the flagfall).

“Embryos implanted” (EI) is a cost designed to share the early windfall of multiple embryos harvested between Judy and Punch: Judy has the pleasing scenario of multiple elite cria from the one joining, and Punch has the pleasing scenario of an increased early return for his efforts. This, and the flagfall, is recoverable within a week of service, providing Punch with some cashflow for his effort. Some have suggested that “embryos harvested” (EH) would be more appropriate, given that Judy may arbitrarily determine “embryos implanted” to Punch’s penalty, but more will be said of this later. Suffice to say that EI is verifiable through the need to subsequently register progeny, whilst EH would necessitate a vet’s statement.

“Live cria” (LC) recognises the fact that not all embryos implanted will survive, and is a payment deferred until 14 months after the service. This is basically a free line of credit extended by Punch to Judy. It purposefully commits Judy to declare all live cria within a short time of delivery, as its intent is not to allow Judy to choose which animals she may register and which she will not, short of significant congenital defects or early illness, but rather to declare all normal healthy live births. All such animals, by virtue of their selected genetics, should be considered as potential show and stud quality, irrespective of their sex or colour, and therefore worthy of registration.

The way in which these various fees are structured has a significant impact on the allocation of cost, risk and reward between the two parties to the agreement. Given that the fee,  $F + EI_1 + LC_1$ , for a single live cria, is a predetermined constant (the drive through fee), changes in one will affect the others.

Assume a matrix of  $1000 + 100 + 600 = \$1700$  (line 48 in the matrix), for a top male normally commanding \$1700 for a single stud service.

Under this schedule, zero embryos still costs \$1000; one embryo producing one live cria (1-1) costs \$1700; 3-2 costs \$2500 (average cost \$1250); 3-3 \$3100 (\$1033); 6-3 \$3400 (\$1133), 6-6 \$5200 (\$867), and 8-10 \$6800 (\$850).

A low fee for EI reduces the cost risk for embryos slipping after implantation; raise EI and this increases Judy's risk, whilst increasing Punch's early return.

A low F means Judy has low risk from no embryos, but also a low discount for multiple conceptions. It also provides a poor initial return to Punch, but will provide almost full fees for each live cria. The low F will be offset by increasing EI (which will give Punch an earlier fee but Judy increased cost risk of slips) or increasing LC (which gives Punch a much delayed return, but Judy a very low risk).

If F and EI are reduced to zero, and full drive-by fees paid for live cria, Punch is likely to charge inflated prices for LC, to compensate for late payment and high risk. If EI and LC were reduced to zero, Punch would get a single drive-by fee in return for Judy's opportunity to produce large numbers of cria from the one mating. This would not be acceptable, and Punch would be likely to inflate F to compensate for the lost opportunity of sharing in the windfall of multiple cria.

A male will usually cover between one and three females on any single MOET day. As average embryo harvest rates per mating are greater than one, the likelihood of harvesting at least three embryos over three matings is high. In the above scenario, if Punch's male covered three females, with a disappointing 0-0, 0-0, 3-3 result, the cost would be  $(\$1000) + (\$1000) + (\$3100) = \$5100$  (average \$1700), the same as a 1-1, 1-1, 1-1 result, and the same as three drive-thru matings. Using several joinings rather than one spreads the risk for Judy, and gives greater financial benefit to Punch.

Another consideration is the availability of recipients in which to implant embryos. Typically, in a MOET program, Judy prepares 4 "recips" per mating. If the first flushing of the day produces a windfall of embryos, it is conceivable that there may be no opportunity for implanting embryos harvested from subsequent flushes. The order of flushings, and the priority given to the embryos of each male, is a decision made entirely by Judy. Consequently, Punch may find that the embryos harvested from the females to which his male has been joined do not have a home—that is, all recips have been used. This potentially reduces his income to zero if there is no allowance for a flagfall, nor a guaranteed number of recips reserved for those matings. Hence, to acknowledge the concept of "lost opportunity" to Punch, it is my suggestion that there be both a flagfall, and a prior agreement about the number of recipients to be guaranteed as available to embryos resulting from Punch's matings. That number, be it two or ten, will insure Punch from the lost opportunity of income related to the lack of possible recipients, and will be integral to whether Punch chooses to make his male available for the program or not. A further consideration might be the opportunity for Punch to provide his own recipients for any "leftover" embryos, bearing the costs of implantation for embryos that might have otherwise been destined for the drain.

*A major risk (or cost) for Judy is the possibility that no live births, or even embryos, may result from a given mating. My suggestion is that the fees for flagfall and embryos implanted for any one mating be then offset against the full fee for a normal drive thru mating, to be used by Judy at her discretion, making up any balance owed.*

*This insures both Punch and Judy against the possibility of a null result, and effectively shares both the risk and the benefit.*

A further consideration is the fitness of both males and females for a MOET program. It is intrinsically counterproductive to both partners in the program to submit alpacas for MOET which are not optimally prepared. The costs for doing so, to both Punch and Judy, are not inconsiderable, and constitute a major incentive to choose animals carefully, and to prepare them well. If a male does not perform well due to being too young, of low fertility, overworked, or of low libido, both Punch and Judy have wasted their time and money. Punch is unlikely to be offered a return visit. Similarly, if females are underprepared, of low fecundity, poorly nourished, or have genital infections, Punch is unlikely to offer his services again for those females.

An alternative approach to the matrix would be for Punch and Judy to consider sharing the embryos on a 50:50 basis, sharing also the veterinary and transport costs, but accepting that slip rates are a lottery to be borne individually by each party. Such a scheme would require that both parties were involved in the selection of females as well as males used in such a program, and each provide recipients appropriately prepared. The logistics of such an operation are such that it might well prove unworkable, but the notion at least accepts that the benefits and opportunities are equally shared.

In summary, the extra time, expense and trouble of a MOET program demands that both Punch and Judy be offered the opportunity for an adequate reward for their involvement. *Judy will measure this in terms of the number of live cria on the ground resulting from each program, and the cost of each cria. Punch will measure it in terms of total income generated, and the time expended to generate that income.*

My purpose in submitting this paper is to bring these various issues to the attention of all potential Punch's and Judy's, and to stimulate thought and discussion that will, hopefully, progress to become the basis of fair and standard practice in the conduct of MOET in the Australian alpaca industry.

In the meantime, fill your glass with Moet, and raise a toast: to cheap sex, and more progeny!