The Utilization of Breeding Data to Assess Alpaca Male Fertility
by Ingrid Wood (Stormwind Alpacas)

Male fertility is an important component of any breeding program, regardless of species. Selecting for high fertility as a desirable trait in a breeding male is especially important when breeding alpacas. Due to unique physiological reproductive properties (induced ovulation being one), the reproductive health of the female alpaca is extremely vulnerable to mismanagement. Repeated breedings can easily cause uterine inflammation followed by infection, scarring, and even permanent infertility.

Probably one of the most important components of female reproductive health, and the one often overlooked, is male fertility. An alpaca male with a high sperm count and desirable breeding behavior will ensure that matings are kept to an absolute minimum.

The breeding protocol on our farm calls for the exclusive use of "handbreeding". Breeding times and frequency of behavior testing to determine pregnancy are all controlled, carefully monitored, and documented.

Understanding the follicular wave cycles of the female alpaca helps me to formulate a well planned individualized breeding schedule for each female based on scientific research and my own field observations. I keep extensive written records of reproductive histories and the behavior patterns unique to each female.

The goal on our farm is to achieve pregnancy with a single breeding following parturition (the birth of a cria). Two breedings are considered acceptable in our program, especially if the female was kept "open" (unbred) for a period of more than thirty days after parturition.

The data below represents 2007 and Spring of 2008 breeding records for three of our males. Our own female alpacas are identified by name, those owned by other breeders are identified as "visitors". The symbol (M) stands for "maiden", a term commonly used to describe a female alpaca that has never been bred. It can be difficult to achieve pregnancy in a maiden. Not all males have the skill or temperament to deal with these girls, nor do all stud owners have the patience to spend the time it often takes to be successful.

Tasman 2007 Mariah – 2, Dolly (M) – 1

Fortune 2007 Claudia – 1, Breeze – 3, Visitor A – 4, Visitor B – 2, Visitor C (M) – 1
Visitor D – 1, Visitor E - 1

We started T-Man's reproductive career in 2008 with three young but experienced females.

T-Man Spring of 2008 Melissa – 1, Visitor E – 1, Visitor F – 1

Tasman Spring of 2008 Visitor D (M) – 4

Fortune Spring of 2008 Claudia – 1, Sanibel (M) – 1, Visitor A – 1, Visitor B – 2, Visitor C (M) – 4

The data indicating that a single breeding resulted in a pregnancy speaks for itself. Let's examine the others. Two breedings to achieve a pregnancy are not unreasonable. Even a highly fertile male cannot impregnate a female alpaca if her follicular cycle is in a phase where the follicle simply isn't large enough to trigger ovulation.

Breeze (Fortune 07) was close to twelve years old when the three matings took place. She's in excellent health. However, age and an extremely abundant supply of milk for her cria at side may have diminished her ability to ovulate. Earlier in the year, Fortune had no problems settling four other females with a single breeding in each case.

The most interesting data is provided by Visitor A bred to Fortune in both 07 and 08. In 07, this female appeared healthy but was very thin. It took four breedings to settle her. Following my advice, the owner changed the alpaca's nutritional program and implemented other herd management protocols at my suggestion. In 2008 the same female ovulated and achieved pregnancy status with a single breeding.

Visitors D (Tasman 07) and C (Fortune 08) were maidens. One, obviously nervous and scared, continually jumped up during the first three exposures to the male. I suspect that the other maiden presented with a slight stricture at the vulvo-vaginal junction (persistence of a segment of hymen), and it took Tasman a while to accomplish penetration.

Both of these males are experienced breeders with exemplary breeding manners. I rarely interfere when it's their job to settle a maiden. They have always been successful.

A cautious approach and patience helps to maintain an alpaca's reproductive health.

Obviously, female fertility and behavior have an impact on male fertility data collection. A sperm count would take the female's role out of the equation. Wouldn't data based on sperm count alone therefore be more meaningful? I don't think so.

Taking a sperm count from an alpaca male can be a little tricky, although it can and has been done. Sperm count, in my opinion, does not tell the whole fertility story. If a mature male is highly fertile but lacks assertiveness in the breeding pen, I wouldn't be interested in owning him or breeding one of my females to him. On the other hand, I am also not eager to own a stud that is aggressive and physically abusive with females. Therefore, sperm count as a single selection criteria does not interest me. Breeders should not make the mistake of confusing aggression with high fertility.

Before contracting for a breeding, the owner of a female should ask probing questions about male fertility and behavior as well as a farm's breeding protocol. A request to see

records of past breedings is not unreasonable. If an inexperienced male is to be used, an owner should nevertheless study the breeding records of other males on the farm. Are the stud owners using a species sensitive approach or is the breeding schedule a wild "hit or miss" affair?

Some farms exclusively use pasture breeding. Females and their crias are grouped in a paddock or pasture occupied by a single breeding male. The male determines time and frequency of the largely unsupervised breedings. Owners of females, especially those with crias at side, should give serious thought to the risks of such a program. Alpaca farmers and/or managers who offer pasture breeding obviously feel that the tremendous reduction in labor is worth the risks. That's fine. We don't all have to manage our farms the same way.

The important take home lesson here is to be aware of the options and make informed choices in the selection of an alpaca stud male as well as breeding management styles. Choices can have far reaching financial repercussions. Obviously, there are more criteria to consider when selecting a stud than fiber properties, a beautiful head, and show wins. I admit to a bias on this subject. I feel strongly that a hand breeding program based on scientific research and using highly fertile males in a nurturing, calm, and healthy environment is the optimum choice for most alpaca females.

The study of a farm's breeding records coupled with detailed explanations from the breeder who supervised the breedings give a prospective buyer or client a wealth of meaningful information. It can be utilized to improve poor or waning fertility in an alpaca herd and to protect a breeding farm's most important asset: the fertility of its females.

As with all collected and presented data, it is important to remember that such data is only as valid as the honesty of the breeder submitting the information.