

Herdsire Selection For Maximum Gain

The selection of a herdsire for any breeding program is the single most important determinant of overall herd quality. It is true for all livestock breeds. The herdsire will contribute his genetics to a large number of offspring while the dam can only contribute her genetics to one cria per year.

The breeding of superior alpacas is part art and part science. The art of the selection process is a subjective endeavor. Does the fleece exhibit good luster? Or is it dull and chalky? How does it feel or what is its "handle"? Do you want a long narrow muzzle or a short broad and squared off muzzle? Is the overall appearance pleasing to your eye? Do you want long banana shaped ears or medium length spear shaped ears? These are subjective assessments and are subject to the breeder's individual preferences and skill.

The science part of the selection process is more objective. Various fleece production measurements can be taken periodically and recorded. Fineness and uniformity can be measured utilizing laser scan technology. Annual weight of the prime fleece can be taken once a year after shearing. Annual staple growth rate can be measured. Skin follicle sampling can give you information on follicular density and the ratio of primary to secondary fibers (S/P ratio). How one chooses to utilize this data can vary. Do you want to breed for fineness or for weight? What is the best balance between these two important traits?

A breeder must carefully select a herdsire to be certain of the genetic traits being introduced into his cria.

The following methods are commonly used in the US alpaca industry.

- 1) Show results
- 2) Pedigree analysis
- 3) Individual production records
- 4) Progeny testing

Show results: This is the most unreliable method of selecting for genetic gain. While show results tell us a lot about the alpaca's phenotype it is an unreliable predictor of genotype. I personally know of several suris that are first generation suris out of suri-huacaya crosses that have won at shows. These suris will not breed true to type. Show results become more useful when one also looks at show results of close relatives and offspring. Keep in mind that many great alpacas have never even been in a show for various legitimate reasons. Because a potential herdsire has never won at a show does not mean that he will not make a worthy stud. Conversely because a potential herdsire has won at multiple shows does not mean that he will be a worthy stud.



Pedigree analysis: This method is more reliable than using show results in predicting genetic gain. It can be especially helpful if one's goals are to produce homozygous suris. By homozygous suri I mean when two suris are mated they will only produce suri offspring. Approximately 10-15% of suri to suri matings in the US results in huacaya offspring. At Latah Creek we do not have a single suri in our herd (male or female) that has ever produced a huacaya. A better method to predict genetic gain would be to use show results and pedigree analysis combined.

Individual production records: I talked about individual production records earlier. These are the more objective and scientific measurements one can take to measure important traits. When one analyzes the same production records of close relatives (mother, father, siblings) this data becomes a more reliable predictor of the herdsires genetic impact. If one were to use all three methods in unison including show records and production records, along with pedigree analysis, one comes to about as a predictable model of estimating breeding value as we currently have available in the US today.

Progeny testing: The best and only truly reliable method of predicting genetic gain is through progeny testing. This is routinely done in the long established sheep, and cattle industries. One can review this data in publications that sell semen for artificial insemination (AI). The listed donor bulls will all have estimated breeding values (EBV) for various traits deemed important by the breeders. Estimated breeding values are established by analyzing the various traits and production records of the offspring produced by a given male compared to the offspring of a different male. Ideally both sets of offspring would originate from the exact same set of females. Unfortunately for the alpaca industry this takes many years to obtain statistically significant numbers of offspring from the same set of dams. The offspring must also be subjected to similar if not identical environmental conditions such as nutrition. The alpaca industry is very young in the US and this information is not easy to obtain. At Latah Creek we have been collecting data for 9 years and have not yet been able to obtain a statistically significant amount of data to perform meaningful progeny testing. We continue to pursue a progeny testing program and hope to have useful results in the near future.

Culling of non-superior males through gelding is of utmost importance if one desires to improve the genetic gain of a given population. Only the best ten percent of the entire male population should be used as herdsires. There is currently no financial incentive for the US alpaca breeder to geld the male alpacas they produce. The financial incentive is to sell these non-superior males to uninformed buyers. Many US breeders are afraid to geld males in fear that buyers might think the dam or sire that produced the gelding are inferior. Let me tell you something important: even the best bull in the world produces steers. At Latah Creek we are proud of the fact that we have an aggressive program to cull out by gelding all but the very best males. As of October 2003 there are only 91 suri geldings listed in the ARI's data base, of which over 20 are from Latah Creek.



We have even gelded ribbon winners. While we own less than 1% of the US suri herd we have personally gelded over 20% of the US suri gelding herd. You can be assured that any herdsire or junior herdsire sold by Latah Creek has been deemed by us to be a herdsire that will provide a positive genetic impact to the US suri herd, and is worthy of herdsire status.

While I was never directly involved in raising other breeding stock before we became alpaca breeders, I did grow up in a rural cattle producing area of Montana. My relatives that are cattle ranchers were emphatic about one thing, "buy the finest herdsire males available". We got the exact same advice from our good friends who raise Merino sheep in New Zealand. I can say with confidence that this advice has been the biggest single factor that has established Latah Creek as one of the premier suri herds in the US.

One does not always have to pay top dollar to obtain a superior herdsire. The only thing you have to do is your homework.

We hope that you are able to find your next herdsire at Latah Creek. If you have any questions on our listed junior herdsires or herdsires please do not hesitate to contact me at jack@alpaca-info.com

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