

# Alpaca Herdsire Selection: *The Art and the Science*

by Mike Safley

The herdsire for any breeding program is the single most important determinant of overall herd quality. It's true for cattle, sheep, horses, or any other breed. For alpacas in North America the sire is even more important. Alpaca bloodlines are currently available for only four or five generations. For a breeder to be certain of the genetic traits being introduced into his cria he must carefully select from available living studs. He may not be able to rely on multi-generation pedigrees to pass on certain breed traits to his offspring.

When I was in Peru in 1991, I had the privilege of eating dinner with Don Julio Barreda. I had inspected over two dozen of his finest herdsires the day before. We talked of his fifty years of experience breeding alpacas. Don Julio is recognized by his peers as having the finest herds in Peru, or anywhere for that matter. I asked Don Julio how his herds became so uniformly gorgeous. His reply, "the machos."

He went on to say that in the 1940's, when white fiber was bringing a premium, he began breeding only the finest white males to his females which were multicolored. Over the following years his herd has acquired a refined elegance that is simply breathtaking. Their genetic excellence is stamped into each cria. The herd is primarily white or light fawn. In my opinion Don Julio has defined the world's alpaca breed standard. I have seen no other alpacas in all of Peru that are their equal.

In 1984 when I first became involved in the alpaca business my father, Ken Safley, was emphatic about one principal – acquire the finest herdsires males available. He would also add, "and you can't have too many of them." Dad's theory was that alpaca breeding is much the same as fielding a winning baseball team and he said "you've got to have a hitter who can knock you some home runs."

My goal at Northwest Alpacas is to create each generation of animals superior to the last. How does one accomplish this?

It is accomplished through the art of animal breeding and the science of genetic selection.

The art of the selection process is subjective. What do you as a breeder want your herdsire to reflect in his offspring? A certain color? Maybe heavy bone or a particular head shape. Do you want large or small alpacas? Fiber quality is extremely important, but can also be subjective. How does it feel or "handle?" Is fineness more important than volume? The science of the selection process is a bit more straight forward. First, a herdsire must be absolutely free of conformation faults. Please read [A Comparative Analysis of Alpaca Breed Type and Standard](http://www.alpacas.com) at [www.alpacas.com](http://www.alpacas.com).

Don Julio gave me the following formula for selecting perfect herdsires. He first shears all of his males at one year. A male must have a minimum "clip" of six pounds to survive the first round of selection. He shears again at two years, this time the males' "clip" must exceed ten pounds if they are to be selected for breeding.

"What about conformation?" I asked. Don Julio replied, "All my alpacas have perfect conformation, each is the same, the legs are straight and the bone thick." This was not an egotistical or arrogant statement. I witnessed Don Julio's alpacas up close. He's right. See [Alpacas: Synthesis of a Miracle](http://www.alpacas.com) at [www.alpacas.com](http://www.alpacas.com). He went on to say that he wanted his males to have strong masculine heads with thick wedge shaped jaws. He looks for a uniform ear length not long or prominent. Don Julio says, "The heads of my alpacas are my trademark." He has long ago perfected his animals' conformation. The art for him is in the fiber.

At Accoyo, which is near Macusani, and the home of Don Julio's prize winning herd, the selection process is rigorous. Only 15 to 30% of the males are finally deemed to be breeding quality. About 60% are castrated and the balance culled.



The ultimate goal of any breeder is to produce a high volume of fine fiber. I spoke with Peter Kothe, who was in charge of raw material at Michel CIA in Arequipa, Peru. Michel is one of the largest alpaca fiber processors in the world. Peter told me that Michel pays a premium for Don Julio's fiber. Why? Approximately 60% of the total clip from his herd sorts into the baby alpaca grade. This is simply amazing, since the herd is largely adults who have been shorn many times.

Don Julio selects his herdsire for their fleece quality. How does it feel, how much is there, is it fine and uniform? His goal is to produce crias with high volumes of fine fiber.

How does the North American breeder select and develop herdsires and cria free of fault? At Northwest Alpacas we are unforgiving about even the smallest flaw. My Dad always said "don't fall in love with your male until it is full grown." Babies change, small flaws grow into major faults. If you've already decided that a particular baby male is your one and only, you may be blinded to his faults by the time he is of breeding age. Remember, the herdsire will be a father to all of your cria. Any given dam will only contribute a fraction of the genes to your crop of offspring.

The North American herd was initially imported from Chile and then Bolivia. In 1993 America became the first country in the world, outside of Peru, to receive Peruvian alpacas. Our alpaca herds can now compete with any country in the world, but each breeder must maintain excellence as his goal. Be realistic and analytical about your breeding stock. Uncompromising herdsire selection is much of the answer.

The future for our alpacas is exciting. Every alpaca breeder has noticed the qualitative improvements in his cria from one generation to the next. The right males can accelerate this process dramatically. What to look for?

The herdsire male should have straight legs front and back, a good bite, well-shaped head, and short spear shaped ears. His testicles should be large and of equal size and consistency.

I like an alpaca with a square appearance, not too tall or too long for its legs. The perfect herdsire has an elegant proportion. The animal should have a wide sprung chest and move freely.

Fiber coverage is very important. Look for a fine, dense fleece. In a huacaya, crimp is indicative of finer fiber. The medulla or center of coarse huacaya alpaca fiber is primarily hollow and the hair is straight. Viewed under the microscope very fine fiber has breaks or solid portions along the medulla. These breaks create curl or crimp along the shaft of the fiber.

Therefore, fiber which appears highly "crimped" will typically be finer.

The genetically correct way to select alpacas with high breeding value is by progeny testing. This involves using a selection index (see [Alpacas: Synthesis of a Miracle](#)) to evaluate a stud's offspring for important traits, such as fleece weight and density. This means not just evaluating the stud's outstanding cria; either all of the offspring, or a random sample large enough to ensure accuracy, must be measured. To be accurate, progeny testing must be done in an environmentally neutral manner. This means that all the cria examined must have been raised in similar circumstances with similar feed and care.

By way of example, alpaca shows have a class called Get-of-Sire (*sire's progeny*) where three offspring are shown together, hopefully representing the male's production capacity. As a breeder looking to purchase a replacement male, would you rather base your buying decision on the three offspring that the exhibitor brought to the show or a complete survey of the cria from the stud's production? Believe me, the large sample is superior.

The second approach to progeny testing, which is more complex, is to use the dam's statistics to create an index that measures how much a sire improves the cria over the dam. Analyzing just the male's progeny is easier, and testing all the offspring, or representative random sample, of a particular male creates a high degree of selection accuracy for breeding values.

At Northwest Alpacas, I have begun selecting impact males based on progeny testing. We are in the process of creating a progeny tested database. We intend to offer breeders the opportunity to buy these progeny tested studs. We call them impact sires.

Finally, a herdsire is proud. His carriage is correct, his head is up, and his nose is in the air. He has machismo. He is master of all he surveys. He's the star of the show. My dad observed that after twenty years of breeding llamas and alpacas, "People come to the ranch to see your herdsire males. They rarely ask to see a particular female." A beautiful herdsire can be a major attraction to your ranch.

I wish you luck in your search for the perfect male. They are out there and, if you pay attention to detail, they may begin showing up in your pasture.

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