

Can You Say “Llama Breed”?

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Llama breed development is a concept that has been tossed around by serious breeders for the last 15 years. It has been debated, researched, considered and then allowed to die, mostly due to lack of commitment to the cause. Only within the last three years, with the emergence of the American Mini Llama Association and then the Suri Llama Association, have breeders committed their energy to first naming and then defining their particular favorites. While the notion is new to llamas, it exists in virtually all other livestock populations and has excited and attracted dedicated breeders for years. It is truly an idea whose time has come for the llama community.

There are three evolutionary stages necessary to breed development: First is the evolution of the wild forbearers into species suitable for domestication. Next follows an adjustment period, where the genome of the wild parent species is adapted to domestication and the population is transformed into a domestic species. Finally comes a sort of *speciation*; where the founding population of domestics diverges into separate distinctive breeds. This occurs through hybridization with local indigenous related species, through natural selection, or through artificial selection at the hand of man.

Lamas have clearly undergone all three stages of domestication, yet the last stage gets a bit sticky for modern breeders. The questions arise: Are alpaca and llama our only two llama ‘breeds’ or are they separate species? Are huacaya and suri alpacas separate ‘breeds’ or just different varieties? Are Argentine and suri llamas separate ‘breeds’, or even breeds at all? Is a huarizo a hybrid or is it a crossbreed? What is a breed and when can we start using the word to refer to our llamas?

The common definition of *breed* goes something like this: *A group of animals related by descent from a common ancestor and visibly similar in most characteristics. When bred together they reliably pass on these characteristics.* While this definition is good enough for the Merriam Websters of the world, it just isn’t, or rather should not be, good enough for the educated breeder. The meaning of *breed*, like all words in the English language, is colored by current culture and reflects the values and priorities of the times. Today, in a world where monoculture and capitalism demand uniformity and reproducibility, the meaning of the word has come to emphasize the “breeding true” portion of the definition.

It is useful to start thinking of breeds in terms of populations and gene pools. To me, the word “breed” represents a group of animals that exist as a separate genetic pocket of the population that enjoy some degree of isolation from the species as a whole. They

share multiple traits, and have a higher degree of uniformity within their population. The gene pool they represent has different gene “frequencies” than the species population overall and than other breeds within the same species. This difference is reflected in their higher degree of homozygosity (hence, they breed true) for the traits that set them apart from the domestic species as a whole. If we start to think of a breed as a population and as a gene pool rather than as simply an animal that fits a physical description, we can get a clearer picture of what breeds are all about.

As culture and language are not static, neither are breeds. They are not cardboard cutouts that remain untouched and unchanged by culture and time the way a revered Rembrandt might be. All breeds are in a subtle, but perpetual state of flux. Every time a breeder makes the decision (based on the breed standard), of who to breed and even who *not* to breed, there are shifts in the allelic frequencies that have helped to define and even safeguard the breed. The greater the number of breeders working with a particular breed, the safer that breed is from deleterious shifts in their gene pool. Each will interpret the breed’s standard slightly differently and make slightly different selections. In essence, each breeder acts as a baffle in that pool; the ripples each one creates counter the ripples of another and the surface stays calm.

In the stages of early breed development, it is important that breeders be defining and sharing their selection goals. They must all be selecting in the same general direction within the standard if they are to accomplish the formation of a new and distinct breed. While this will initially create tremendous shifts in the allelic frequency of the newly defined gene pool relative to the original gene pool, it is necessary to breed development. It is this new allelic frequency that defines the burgeoning breed. Ultimately, breed development makes more secure the distinctive traits that are the resources we are safeguarding.

Alternatively, when we analyze the present day llama community, we observe hundreds of breeders working with a *single* very diverse gene pool. Each breeder has very different breeding goals; one selecting for tall suri types and another selecting for robust Argentine types within the same gene pool, as well as having different breeding goals from year to year (aka trend chasing). The net result is zero...no negatives, no positives, no predictability. And it is likely, as we have already seen in the community, that some valuable traits get buried in the rubble of all this chaos.

If one group of breeders prefers suris, they should section off a little bit of the gene pool and work closely together to breed within that type; likewise the Argentines and minis and silkies. There is no reason they cannot prudently dip back into the general llama population and make judicious outcrosses to bring in new blood and new traits. (They need only to restrict the flow of unwanted traits from the larger population into theirs.) This is the beginning of breed development, and this is the time to start using the word *breed* to help breeders distinguish between different segments of the population. If we wait until our llamas ‘breed true’ to start using the word, they never will.

Why should we care about llama breed formation? I would submit that it signifies the mature phase of a livestock industry. We have been playing around with this mongrel population of llamas in North America for several decades. Whether through accident, market demand, or thoughtful breeding, some distinct types have emerged and many of them have found a dedicated following. Naming them as breeds, defining their characteristics, and following conscientious, selective breeding programs will help to safeguard and refine the very traits that led us to our *breed* of llama. Furthermore, these very same traits, if well managed, will attract other like-minded, enthusiastic breeders from outside the industry.

Portions of the gene pool have already started to polarize; those breeders are building firm foundations to insure viability. I would advise other groups of breeders with shared passions to unite and work toward the preservation of their breed lest it get lost in the rubble of their own chaotic breeding strategies. Creating a 'community' around breeds gives both seasoned breeders and newcomers a place to gather and share information, excitement, and ultimately, to preserve their favorite type of llama.