

Fineness, Uniformity, and the Connection to Breeders

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As you look through the pages of various alpaca magazines, you'll see countless ads for herdsires, all with wonderful show records, outstanding photos, and some with winning offspring on the ground. Choosing between all these great herdsires may seem overwhelming, but by developing a focused breeding program you will be able to stay on track and narrow your choices quickly. So, what should your breeding program include? Every breeder will have different goals and objectives and might, or might not, include such fiber characteristics as luster, density, color, and lock definition.

But what about fineness and uniformity? How should these two factors play into your breeding program? Until now, most of us have developed our breeding programs around goals for the showing, and the success of our breeding programs has been measured by the number of ribbons we are able to garner.

However, as this industry grows, the focus is beginning to shift towards developing a full livestock model. It's a model in which we, as breeders, will provide the seed stock genetics for fiber producers. Such producers' profitability will rest on the quality of their fleeces as measured not by the showing, but by garment designers, commercial processors, and ultimately consumers.

In order for us to meet the needs of this new market, we have to understand the characteristics that consumers and business owners perceive as differentiating high-quality fiber from average or below-average fiber. We all know that luster in Suri fiber is an important, differentiating factor, and our efforts to build that into our breeding program have been well founded. But when you ask a retailer of fiber products, or a designer of apparel what they believe the most important quality is, they will tell you "fineness."

While the showing most certainly rewards fineness and uniformity, and many Suri owners will tell you they are breeding for it, a thorough understanding of these factors and a set of quantitative measurements are often lacking in those same breeding programs. Responses from the Suri Network Product Development Committee's (SNPDC) questionnaire indicate that only 50%, at best, of Suri Network members micron-test their animals. Uniformity of fineness, both within the staple and across the blanket, is rarely considered as a primary breeding goal. Yet, uniformity within the staple has an important effect on the handle or "feeling" of softness, even if the fleece is not particularly fine. And fineness beyond the age of 18 months – 2 years is rarely factored into anyone's breeding program, except when an elderly stud still exhibits fine, uniform fleece which is a cause for celebration!

It is an undeniable fact, however, that the difference in profitability between average Suri fiber and fine, uniform Suri fiber for your future customers is truly meaningful. In Peru, alpaca fiber of all sorts, greater than 25 microns, yields somewhere between \$1.00 - \$15.00 per pound, while fiber below 20 microns yields somewhere between \$25.00 and \$60.00 per pound. Thus, a fiber producer will naturally be willing to pay more for a Suri that has finer,

more uniform fiber. Those animals that maintain luster, uniformity, and a low micron count well into adulthood will be considered even more valuable.

So what does this mean for us as breeders?

First of all, it means we need to start thinking about the fiber market and not just the showring when formulating our breeding programs. Perhaps, as breeders, we will not be efficient in our fiber production because of our focus on breeding. Yet there are a few pioneer breeding farms whose focus on fiber genetics is yielding not only “wins” in fleece and halter classes, but also sales of fiber. These farms are helping pave the way for “fiber farms.”

With a different profitability model, fiber farms should be more successful in producing and selling fiber for production. We must know and understand their market and represent their needs in our own breeding programs. Doing so will change our focus from short-term, show oriented goals to long-term, end use goals.

We should also proceed with caution with respect to fineness. That is to say that we have plenty of research to do on our Suri fiber to really understand what the optimum fineness point might be and how it relates to other factors in our breeding program such as luster and density – and how it may affect matting while still on the animal. Breeding for fineness does not have to mean constantly driving down the micron count. Rather, it can mean breeding for the optimum point at which the fiber can readily be processed; a point at which the strength, luster, and density of the fiber is not compromised, and the end user feels a soft-to-the-touch fiber that they perceive as luxurious.

That being said, a basic understanding of how to measure for fineness and uniformity will allow you to start implementing these factors into your breeding program, and begin making the connection to the end market.

Where so we start?

Before selecting a herdsire, you will need to micron test all of your Suris. The test should be done regardless of the animal’s age. Ideally, the test should include a sample from the shoulder, the mid-section, and the hip. The test should be done on all your animals at least once, and it is recommended to test your older animals once every 2-3 years thereafter.

Once you have this information on your own animals, ask the herdsire farm to provide their micron information. If they don’t have that available, don’t be bashful about asking for a sample of fiber from the herdsire’s first clip and its most recent clip, and then send both in for testing yourself. The results of this test should be a critical component of your breeding selection. You’re paying good money for your breedings, so gather all the facts!

Additionally, you will want to know if that herdsire has been able to impact its offspring by passing on its fineness. When the Expected Progeny Differences (EPD) system is implemented across the country, you will be able to determine this information readily. Until that is fully up and running, you’ll have to do your research the “old-fashioned” way; ask the

herdsire's farm for their records, or ask for references from other farms that have cria from breedings to that stud.

What do the results tell us from a practical standpoint?

Mean fiber diameter (MFD) (also referred to as average fiber diameter (AFD)). The information in the table below will give you an idea of how the various ranges of MFDs can be used. Remember: fibers that can be worn close to the skin will generally yield higher monetary return than those worn as outer garments. Fibers that can be worn as outer garments will carry more value than those fibers used for such items as rugs.

MFD	USE
< 24 microns	Can be worn close to the skin in either pure or blended form
< 28 microns	Can be used for outerwear garments such as sweaters, vests, etc
≥ 28 microns	Can be used for outerwear, rugs, crafts, etc

Standard Deviation (SD), Coefficient of Variation (CV). Each of these measurements (or parameters) looks at the variability of fiber diameters within your sample and gives you an indication of uniformity. The greater the uniformity, the better the feel of the fleece. For a fiber farm, greater uniformity translates to greater predictability and better quality of fiber -- and more dollars in the door! So what should you be shooting for in your breeding program? In today's herd, variability between color categories is still wide, but ideally, all colors should eventually offer the following:

- An SD of 4.00 or under
- A CV of 20 or less

Of course, there are plenty of other measurements that can, and should, be built into your breeding program. However, these fiber parameters will be a great starting point for you and assist you in your herdsire selection process. And if you like to show, rest assured that incorporating these measurements into your breeding program will only serve to improve your standings in the ring!

Conclusion

There will be many factors to consider when putting together and implementing your breeding program, and choosing suitable herdsires will take serious consideration. Building fineness and uniformity into any breeding program will be critical if this industry wants to be relevant in the end use market. These factors will also be critical in meeting the needs of possible new customers: fiber producers. Our industry is an exciting and constantly evolving one. Keeping an eye on the fiber market and the end uses of that fiber will enable you to track animals that consistently produce better fleeces in their offspring, and to see a "bigger picture" as change occurs. People will always pay a premium for animals whose genetics support increasing profitability for the end product. Selecting suri genetics that support not only that beautiful, signature luster, but also fineness and uniformity will take your breeding program to a whole new level!