

A Spotlight on Alpaca Spots

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My eyes proudly scan this year's crop of harvested and skirted fleeces. I make a mental note as to which ones will be sold raw and set aside those that will be spun into yarn by the local fiber mill. With regret, I register that, for the first time in over ten years, I will have no grey yarn to sell. At twelve years of age, our old girl's fiber lacks sufficient staple length and has too much guard hair to satisfy my criteria for producing a quality end product. Too bad! The beautiful yarn spun from Soft Breeze's fleece was always a favorite with my customers. They loved its exquisite grey color and soft handle.

Alpaca breeders selecting for color should be interested in the fact that Soft Breeze ... surprise! ... is not a grey. She's a true black with a rather large white tuxedo pattern. Not surprisingly, the two fleece colors blend into an eye catching silver grey.

Lately, a few breeders are advising others to remove spotted alpacas from their breeding programs. I think it's high time to weigh in with an opposing view and a little common sense. Let's begin by examining the practical implications of raising colored alpacas with white spots.

Does it strike you as absurd that greys are highly coveted by many breeders while tuxedo or pinto patterned alpacas are rejected by some of the same people? It shouldn't matter how the mix of colors is arranged on the animal when the end results are virtually identical. Are breeders merely paying lip service to a fiber market while, in reality, their interest is focused on breeding moving pasture ornaments?

Let's discuss minimal expression of the tuxedo pattern: white spotting on head, neck, and extremities. The commercial value of a fleece lies primarily in the blanket. If a breeder desires uniform blanket color, minimal tuxedo spotting does not pose a problem. Skilled fiber producers do not mix blanket fiber with "seconds" during or after the shearing process. Uniform blanket color is therefore not compromised by white spots found in other areas of the body. Of course, the spotted seconds may be blended to create fiber products with an attractive, heathery grey color.

It's possible that breeders calling for the exclusion of all spotted alpacas know little or nothing about fiber processing. For example, one rather vocal supporter of selection against spotting sold an alpaca to an acquaintance of mine. The animal arrived at her farm accompanied by an incredibly filthy, soggy shorn fleece wadded up and stuffed in a single bag. Should such a fiber producer (and I use the term loosely here) offer advice on fiber issues to anyone in the greater alpaca community?

Some alpacas have small colored spots in otherwise white/beige/light fawn fleeces. (Genetically speaking, this statement is not correct. It serves the purpose for this discussion.) Let's take a practical approach. How long does it take to remove a tiny

segment of, for example, fawn fiber from a white fleece during skirting? A few seconds at the most! Why would you discard a fine animal with superior fiber or other outstanding qualities based on one quick hand motion performed once a year? Is such selection pressure based on pragmatic, common sense thinking?

Furthermore, small colored spots in light fleeces serve as genetic “windows”. They permit breeders to identify the true pigment (black or red) of a white animal. Such identification is extremely helpful for breeders who wish to use light colored individuals to improve fineness in a colored herd.

Interestingly, the cloning of cattle and cats, among others, has proven that there is an environmental component to spotting patterns. In addition to genetics, conditions in the uterus can influence size and patterns of spots in mammals.

Tiny white spots are often the result of environmental insults such as injection sites or injuries.

“You’re basing your arguments on the current North American cottage industry model,” the reader may very well interject how. That’s true, and let’s add the valid point that many North American breeders hope that our fledgling industry will move towards a larger, commercial market. Will spotted alpacas become an issue then?

In *The Complete Alpaca Book*, Eric Hoffman quotes high-ranking Michell (alpaca processing company) executive Ignacio Garaycocheo: “There are no sorting machines used on alpaca fiber anywhere in the world.” In the fiber chapter’s subsection titled *Sorting and Classification of Colors*, Hoffman explains that the South Americans have two designated “categories of natural colors: pure colors (occurring on an animal) and blended or streaky colors (mixed after shearing).” Blends are created “by adding one color to another during processing” and “to ensure the color consistency and volume of a desired color” (Hoffman). There is no doubt that, for ease of processing control, fiber mills *do* prefer pure colored fleeces, but that doesn’t mean that we have to throw out the baby with the bath water, or literally, a fabulous white fleece along with its small fawn spot.

Those calling for the removal of all spotted animals from the North American gene pool express precious little or no concern that valuable genetic material may disappear altogether with heavy selection pressure against this large segment of the population. To be perfectly blunt: I personally prefer a genetically healthy white male with a small fawn spot to a “pure” one producing offspring with heart defects, kinky tails, or abnormal vulvas any day. Sometimes I wonder why certain breeders in our industry don’t just simply switch to Merino sheep and be done with it. They’d have animals with tons of crimp, soft rolling skin, and be assured of “pure” white color with each offspring. The rest of us could go on to enjoy the alpacas’ diversity in peace and quiet.

It’s fortunate and speaks well for our industry that there are breeders who don’t blindly follow the breeding “laws” formulated by the little and not so little dictators in our midst.

Some are rewarded handsomely for thinking and breeding “outside the box”. For example, I can think of a female, the granddaughter of a spotted male, whose offspring generated huge payday for a breeder who has become famous for her creative approach *and* research based breeding practices.

If you own a tuxedo or pinto alpaca, ask your local mill to blend the colors and watch that beautiful silver or rose-grey yarn fly off your fiber store’s shelves. Fiber artists in general are crazy about specialty and any unusual fibers. My spinner friends make an annual pilgrimage to a New Jersey sheep farm to indulge their passion for spotted Jacob sheep fleeces. The fascination many fiber artists feel for alpacas can be directly contributed to the huge diversity of colors and patterns found in the greater alpaca population. This diversity will be impossible to maintain without spotting patterns and the occasional odd spot in otherwise self colored fleeces.

Finally, from a genetic standpoint, the study of spotting patterns offers some very interesting information. Few wild prey animals display white spots or patterns. Natural selection does not favor individuals that lack the ability to camouflage themselves. Domestication permits individuals with color mutations to reproduce and pass on their genes. Over the years, scientists have conducted and reported on fascinating research involving various mammalian species. *In Genetics and the Behavior of Domestic Animals*, editor Dr. Temple Grandin shares an experiment from 1975. While selecting furfarmed foxes for short “flight” distances, scientists managed to produce a population of genetically tame and essentially domesticated foxes within only twenty generations. Along with tame behavior, the foxes exhibited anatomical changes, “*including piebald coats*” (emphasis mine).

Another study found that “avoidance of humans by captive foxes was *inversely* related to the number of mutant coat-color alleleles in the genotype” (emphasis mine). Another quote: “It is interesting to note that the foxes became progressively tamer as more and more mutant color genes were added.” The animals with the most mutant coat color genes proved to be the tamest.

Of course, alpacas are not foxes, but I think it’s easy to see a parallel to the fox study. The wild vicuna population, undisputed ancestors of modern alpacas, is uniform in color and the subtle vicuna pattern. Domestication resulted in the expression of numerous color mutations coupled with a much tamer, milder temperament. Just like in the foxes, mutations included piebald (pinto) and other rather flashy spotting patterns. The end result was the alpaca, still somewhat shy and often quick to take flight but, compared to its wild ancestor, easily handled and managed in an agricultural environment.

We can interpret spotting patterns as a genetic message from the animals to their human caretakers: “Under your protection , it is OK for me to be seen, to stand out, and to draw attention to myself.”

My own message to fellow alpaca breeders is this: think for yourselves and don't base breeding decisions on marketing hype. Remember that what is "out" one day is "in" the next.

Those who, without examining the issues, blindly parrot what they see or hear, better be aware that not all marketing trends are based on science, practical applications, or any kind of reality. I've observed this phenomenon on several occasions in our industry, including the lightening quick "back pedaling" that follows when it's financially advantageous to do so.

It is not at all far fetched to imagine that one day, in the distant future, one of the major opponents of spotting will begin to extol the virtues of spotted alpacas. It is also not hard to imagine that, after breeders faithfully and consistently followed his advice to select against them, spotted alpacas are now quite rare. Lucky for you, the interested buyer, Mr. Dictator just happens to have several of the last few of these valuable creatures stashed away on his farm. "There are only twenty-five of these left in the country", he whispers in a conspiratorial voice. "You can't go wrong breeding for this special trait." When he tells you the alpacas' prices, your head spins and you see spots in front of your eyes. Better to keep the latter open now!

Ingrid Wood offers a PowerPoint presentation on color genetics to interested individuals and groups. For more information contact her at stormwindalpacas@comcast.net or call 609-261-0696.