

A Mineral Mystery



Early in the American alpaca story, about 500 two- and three-year-old alpacas were selected for import into the United States from South America. Now known as the 1995-96 Chilean import, the animals came through South Florida and were then stationed in the Lexington, Kentucky area for a few months after quarantine. Dr. Norm Evans was charged with visiting and evaluating them monthly in preparation for a sale planned for spring of 1996.



Around 30 of these animals had been selected specifically for their vivid black fiber. The true black Huacayas showed notable brightness, and the Suris exhibited exceptional luster.

But something strange began to happen with about 40 of the true black animals' fiber as the quarantine time wore on in Lexington. Some of the true black animals' fiber began to show distinctively brown tips. The discoloration caused a real difference in their appearance — about 20 percent of the total fiber length was noticeably affected.

This greatly alarmed the potential purchasers who felt "this color change devalued the true blacks by 50 percent," Dr. Evans says. It was up to him to discover what was happening and hopefully correct it.

While Dr. Evans and his team realized they could be dealing with genetic factors, they found that possibility unlikely since the South American animals had been selected from different farms and had entirely different lineages.

"In 1995-96," Dr. Evans says, "we were trying to identify the most balanced nutrients for alpacas based mostly on blood work. We analyzed

all food consumed, as well as the feces passed, to evaluate what nutrients were absorbed in what form and what passed through unabsorbed."

Dr. Evans had a hunch. "Based on my background in bovine practice and blood work levels for embryo transfer in many Black Angus and Black Chianina cattle, I assumed the issue was a lack of — or imbalance of — copper and zinc in the total diet," Evans says.

However, after analysis, Dr. Evans discovered, "Copper and zinc blood levels in the true blacks as well as those blacks tipped brown were virtually the same." In fact, "These levels actually matched alpacas of different colors as well at the time," Dr. Evans says.

Not deterred, Dr. Evans kept at it.

Next, about 20 blood samples were obtained from two of the original black animals' farms in South America. When a laboratory at Michigan State analyzed the blood, two minerals were present in much higher levels than expected.

"Selenium and manganese were 40-50 percent higher in the South American natives than those in Lexington," Dr. Evans says.

Finally, the reason for black animals mysteriously turning brown began to get clearer.

"My assumption was that little erosion or farming practices in the native area maintained these minerals as well as other nutrients [in the soil]. The timeline of selection, quarantining and importation had created deficiencies," Dr. Evans says.

Dr. Evans and his team proved



their hypothesis over a two-year period by experimenting with "different levels of both minerals through our forage analysis and supplementation additions."

Happily, they also discovered how to bring the true blacks back to their original condition. In fact, Dr. Evans proved that not only can the black fiber be restored — he discovered it could be enhanced with "additional brightness and luster with the proper addition and balance of [selenium and manganese]."

Further, he proved that "additional forage and grain testing in the U.S. and Canada indicates these two minerals, as well as others, play an important role in maintaining a strong immune system and healthy fiber production."

Dr. Evans' actions show that even under intense pressure, calm fact gathering followed by scientific analysis is almost always the best way toward a solution in animal husbandry. ●



• Personal interviews with Dr. Norm Evans

