

SOUTHERN EXPOSURE

...the alpaca in the Southeastern USA

by

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Star Breeders Challenge Seminar
October 4, 2002
Charlottesville, VA

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May I preface this seminar by saying that I am one farmer out of many. What I will be sharing with you are personal observations, not necessarily universal truths. I am open for explanation to my observations if you should know the truths of animal behavior. The things I shall share may not have a scientific basis, but the results seem to work for us.

I live a few miles north of Atlanta, Ga. Having brought the alpaca to this area of the world has invited many comments from my fellow breeders about the heat. I must say that this summer has been extremely hot, not just for us, but for the entire USA. I do not believe that we hold any awards for cornering the market on heat records this year. I noticed several times that New York, Oregon and Washington who are further north than we are had temperatures higher than ours on a few given days. We do however, have an index called humidity.

This phenomenon leads Dr. David Pugh and colleagues to come up with guidelines for vigilance to protect the alpaca. When you add the humidity reading and the temperature together and it equals 150 or more, extra precautions need to be taken for the animals to keep them cool.

This combination of environmental contributions is not seen in the alpaca's native home. So, I would call this a stress to the species in that they have to acclimate. This takes generations to effect adaptation. In the meanwhile, this is a stress in that it is not native to their body's needs to adapt. Remember that word stress. It seems to be such a catch-all word. It is of itself self-explanatory.

The alpaca has been a domesticated animal for centuries. But the word domestication does not mean the same in all species. This term has come to mean that the animals survive around humans. They are not constantly hearing the call of the wild and trying to get away, back to some magic meadow over the hill. So, when you are looking at the day-to-day behavioral traits of the alpaca, we often forget that being in an environment that is also occupied by the human is not without some resistance or stress.

I would like to address what this term means to the alpaca. By looking at their very nature, let's explore what they like to do. In the course of their day, they walk around at a slow gait. They graze for a little while. Then they lie down, maybe find a soft dirt spot and roll a bit. Then they nudge a cria's tail and the nursing bond is once again made, then off to the poop pile again. They may come up to their water and drink a little, then sometimes a lot, nibble at the mineral container, frolic or not, take turns watching the kids prong, or rear up in the air at an opponent for a moment of jousting, alpaca style! They do all these activities usually in the direct presence of a buddy, rarely separated from one another, unless a cria is ready to drop. Then it is solitude that the female is granted. There are so many normal activities that fill their day.

But, then here comes human. It is not a welcomed sight unless there is food at the timing of the visit. When two humans are together, then it is estrangement and they are then checking the farther end of the pasture. If it is herd health day (toenail clipping, de-worming, trimming the topknot, halter training) do remember these are human induced stresses. So, in the South, which I will use a catch all term for this corner of the USA, we keep things that are a stress to the alpaca at a minimum when the heat index is up.

There are some basic underlying protocols that we in the south are beginning to realize and make part of our routines; I will address the following topics and explain how we deal with these and make it work for us.

During hot months, mid-May through mid-September;
Shear-Yes (maybe twice on denser alpacas - esp. the Accoyo)
Shelter/Shade-Yes
Fans-Yes
Proper Nutrition-Yes
Electrolytes-Yes
Free choice minerals-Yes
Breeding-NO
Training-NO
Weaning-NO
Imposed stresses-NO
Transport: Absolutely NO
Change in routine-NO
Relocation-preferably Not, certainly not alone

Prevention of Heat Stress

Prevention is the first and most important line of defense against heat stress syndrome.

Shearing - This is one of the first measures you should take to prepare your alpacas. We attempt to shear entire herd by the end of April. Timing will vary depending on your location and when the temperatures begin to reach the 90s in your area. All alpacas should be shorn, including crias of all ages, and pregnant females, regardless of due date. The alpaca's fiber should be sheared to the skin over the entire alpaca prior to periods of significant heat exposure to help prevent heat stress. It is not advisable, nor safe, to avoid or delay shearing in order to show or present the alpaca in a sale. Alpacas for sale can be shown to potential buyers in the shorn state, with the bagged fleece on display. Show alpacas can be shown in shorn or composite classes, or at shows during cooler months or the year. It is cruel and dangerous to keep alpacas in full fleece in hot climate for any reason. In choosing an alpaca for this region, the denser animals, particularly the Accoyo line must be carefully watched. They put on fiber so much faster and it is

denser to boot. Even though most of them are light, the heat insulation is magnanimous. Now we start to see the financial implications of our choices!

Water - Always provide plenty of fresh, cool, clean water as water requirements may double during periods of increased heat exposure. Water should be available in all areas of the pasture, and strategically placed in shaded areas when possible. If water becomes heated during the day, it should be changed at intervals to ensure the alpacas have cool water at all times. If during periods of increased risk, alpacas are given palatable electrolyte mixtures in their water, a second source of fresh, untreated water should be made available to ensure water intake for those alpacas that dislike the taste of electrolytes. Because glucose and other solutes in most electrolyte mixtures favor bacterial growth, electrolyte-containing solutions should be replaced containers cleaned daily. An alternative to providing electrolyte solutions is to add a blended mineral mix that contains electrolytes to the alpaca's daily feed or provide as a free choice supplement.

Shade and Shelter - Adequate shade and housing should be provided to alpacas as an important measure in the prevention of heat stress. All of the alpacas should have access to shade and shelter. If shade trees are not available, non-permanent structures built of metal pipe and covered with woven polypropylene fabric will provide 80% of the shade of solid roofed buildings. These structures are inexpensive and may be moved from pasture to pasture, reducing construction costs. These are excellent alternatives for shade less pastures. You might even purchase small tents that can be moved easily.

Fans, Fans, Fans - High efficiency fans that promote high airflow are imperative. Keep the air moving! Have several fans in place. Certain alpacas and you know who they are, tend to sit down in front and monopolize the current. Make sure there are no electrical cords that a little one can chew on or trip over. Once they get a leg caught, they are on the move, dragging fan and all. This results in a truly stressed alpaca that is afraid for it feels it is being chased by a fan!

Nutrition - Proper nutrition is important in the prevention of heat stress. Ensure a well balanced diet. Avoid feeding high protein feed or low quality hay. Remember that a product of digestion is heat, so providing easily digestible feed such as grain or pelleted feed reduces heat production during digestion. They should, of course, have continued access to grass and/or good quality hay.

Herd Management - Husbandry practices should be modified during periods conducive to heat stress. Breeding, birthing, and weaning should be done during the cooler times of the year. This modification of the breeding season will prevent birthing during hotter periods of the year, as crias and late-pregnant alpacas are very susceptible to heat stress. Avoid training, or any physical activity that exerts or stresses the alpacas during periods of increase heat.

Herd Movement - Avoid moving alpacas to a hot climate, i.e. north to south, during the summer months. It may take 6-8 months to acclimate the alpaca to a new geographical area, feeding practices and herd mates. Avoid regrouping alpacas if possible, or weaning alpacas during the summer.

Know what is normal behavior - Frequent observation of behavior of the alpacas in order to quickly detect early signs of heat stress is a must. One must be very familiar with the usual or normal behavior of individual alpacas. One way to assess the effectiveness of your preventive heat stress measures is count the respiratory rate of undisturbed alpacas. While you are in the presence of your herd and no big movements are being made, watch their breathing. If the average respiratory rate of the majority of the alpacas is > 35 breaths per minute, more preventive measures should be instituted!

Breeding - My whole philosophy of breeding changed this year. The last two summers were not too grave. We had some hot mid-afternoons but the play time with the garden hose took care of that. But this year was different. Some of my fellow breeders had females to abort almost full term crias (placenta and all). They just dropped them like a large bowel movement and walked off. Strangest thing I ever saw. Mother Nature really protected my girl from the pangs of losing a live cria. There was nothing wrong with the cria. Necropsy showed nothing infectious, no heart defects. Just a huge bag of cria with fluid all in one was presented. I do not know how she passed it. I literally had to break the sac to see what color the cria was. I made myself and God a promise that if He would let me get through this summer without any more major maladies; I would never bring a pregnant female to the south, or breed a female before Oct 15. Now, I know that according to some printed material that I am losing \$ 1000 per month for every month that my females are not bred, but, far better to have a live dam and cria. Heat is a killer of babies. There have been several farms this year to report that their females aborted at 10 months, within just a few weeks of delivery from mid Aug-early Sep. Do not know what the reason was, but the veterinarians said it was heat stress. This is the way they manifest stress. With no warning at all, cria, placenta and the whole kittenkaboodle come out, she walks off and you have to start over for that year. One other interesting change to "business as usual" was the time of day the dam delivered. The crias that were born this year between Aug 15 and Sep 10 were born at the crack of dawn or late evening. One even came when it was raining. So that lead line of "mid-day births, and not when raining" went out the window for us.

So, I have decided that for me and my farm, we will have only fall and early winter babies and maybe mid spring babies. So, at Carodel right now, there is a hormone war going on. We have 20 females that are open at one time in order to move this plan into reality. The little boys, the girls, and the breeding males all sense that this is not normal to have such pherones in the air. We will begin settling everyone's nerves when we return home, provided that they have not

decided to go AWOL on us! Email me later on and see if I have too much trouble with the girls catching after being open for a few months. We will see.

Physical Accommodations:

Fans, water sprinklers, cool sand, trees for shade, canopy cover,
Set your barn to the windward side,

Construction of barn or shelter should be to best protect from the fiercest sun. You know that the sun moves in an arc. When you position the barn, get out and see where the sun is and angle your building accordingly. That lethal setting sun is a killer; they must be able to get into the shade, particularly the black/dark alpacas.

Roof sprinklers are in place on one of the Georgia farms.

Kiddie's swimming pools are seen in the south.

Concrete pad of the dog kennel is a great cool place if under a tree.

No extraneous stress: i.e. training, unnecessary handling. Blood pulls for DNA are delayed for a cooler time.

Cria stress.-Once the preliminary checks at birth are accomplished, leave them alone. Catching up the crias raises their blood pressure, temperature, anxiety level, just for you to get a cuddly feel. These little ones need to be left alone. You are doing more to stress them than you think.

Now, I do not have any direct communication with the alpaca, they have not told me all this, I just go by their respiration rate, temperature, nostrils, and their flight techniques.

Minimum of strangers, no dogs, anything that would get the flight mechanism cranked up is best to be wary of this.

Human intervention must be kept to a minimum during hot months. This means that if you have any shows or particular alpacas that will be in need of halter training, you must plan ahead. The cool of the evening is far better than mid-day for anything that might push their stress button.

Training - Fortunately, we do not have shows during the hot months. AOBA is really pushing it by being the last weekend in May. These guys are in full fleece from the north having to really be watched by having fans and well-ventilated space. There is however, the occurrence of auctions. With this in mind, the well-mannered alpaca is a must. They are paraded across a stage. The need for halter training is thus necessary. So, if you see that you are going to participate

in these, plan in advance with your new kids and expose the halter and lead line in cooler times so that this is not a challenge/war in hot months.

Weaning - This is not my favorite part of raising the alpaca. I have found that there is no magic moment when the cria must become a weanling. The little ones mature at different rates and I let the dam tell me when she needs my help. Most of my dams have weaned their own. When they are pregnant and birth is within a few months, she starts the kick-off routine and the kid gets the message. It is easier with males, in that they graduate to the yearling pasture when I see them with a milk rim and mounting a girl. I think it is sort of a having your cake and milk too! Males will exhibit their libido early on. With this in mind, I have used them in letting me know when a delivery is fairly eminent. The little boys sniff the backend of the dam who is near term and this little dance puts me on guard to start checking for an enlarged udder, elongating vulva and the “nesting” activities. I have noticed that the girls when they are within two-three days of delivery do this dance with their hind legs. It looks like a human man when he is wiping off the front of his shoes by rubbing the shoe top on the calf muscle of the opposite leg. Can you envision this? Have you seen this? It is quite common and I suppose that is a way of scratching an itch or rearranging things to be more comfortable. These are only guesses but observations in my herd.

Management of the maiden - The hot months is not the time to introduce a young girl to sex. She may get a bad impression. If she hears the orgle, is receptive, boom she is down and it could be for 20 minutes in the hot sun.

Management of the pregnant female - Behavior testing is necessary to determine if a pregnancy is holding. But, if you think it did not hold, you are not going to be doing any breeding anyhow. So, to get your herd sire all worked up really does not make sense. The veterinarian can do an evaluation to determine this for you.

Management of the male: Check for fighting teeth. The eruption of these buds seems to put the male prowess in high gear. If you have your open females within sight or smell of the males, they are going to have their daily joust as to who is “king”. As one matures he seems to get bigger, taller and more testosterone, the roles may change. The screaming, the butting of chest, the biting at the scrotum, neck and legs is part of the play but watch for sometimes it turns mean and the results is an overheated male. These matches end up with dropped lips and a numbing green goo drip, nostrils flaring, breathing heavy, testicle swell and all the signs of raised temperature, blood pressure et al. These jousts seem to occur when the freshly shorn guy is put back into his pasture and the others do not recognize him readily. Until all are shorn and the playing field is leveled, the newly shorn should be kept together and rejoin their buddies when all are unrecognizable for a little while. The male can mature earlier than I think we have been led to believe. Males must be removed from the pasture with open females, their mom or anyone else by the end of their eighth month. I have

noticed that when there is an open female, they do their mounting routine, females have been fooled into release of the follicle by an immature male thus they may not become pregnant when put with the herd sire for the follicle is past its prime when the viable male makes his overtures. This is particularly noticeable with maidens when you do not know their maturation timetable. Behavior testing is kept to a reasonable minimum. A pass by the pasture, gate or fence where the candidates are is usually sufficient to get some sort of response from the girls. They will walk away, snort, spit, or show some response as to how disgusting they think he is!

DETECTION OF HEAT STRESS

The initial signs of heat stress may be quite subtle and apparent to only the most astute observer. Initial signs of heat stress may include panting, depression or dullness, staggering, drooping of the lower lip, excessive salivation, or other abnormal behavior. Scrotal swelling or edema in the intact male may be the result of heat stress. More advanced signs of heat stress may include facial or partial facial paralysis, difficulty breathing, inability to stand, convulsions or coma. An alpaca with any combination of these symptoms, coupled with a rectal temperature of $>104^{\circ}$ F, a respiratory rate >40 per minute, and a heart rate >90 per minute, could be suffering some degree of heat stress. Without intervention, severe alterations of the alpaca's ability to maintain a safe body temperature may well result in death.

It is of paramount importance that the alpaca caretaker be vigilant and know the normal behavior of an individual alpaca. Heat stress syndrome may begin with an alpaca simply not eating and depressed, and then rapidly progress to a complete collapse of all body systems with resultant death. The onset of this syndrome may be so insidious that careful observation of any alterations in the eating, drinking, and other behaviors of the alpaca is critical in the detection and early treatment of heat stress. One of the most common mistakes is to assume the depressed alpaca will be fine, and to delay close examination. Alpacas that are not acting normally should be examined more closely immediately. This examination should include a rectal temperature (normal 101° - 102°)

TREATMENT OF HEAT STRESS

The intensity of treatment should be determined by the severity of the signs the alpaca is exhibiting. The most effective treatment in the early stages is simply cooling the alpaca down. This can be accomplished by hosing the alpaca down on a relatively fibreless area such as the lower chest with a water hose, placing the alpaca in front of a fan or in an air conditioned room. Expeditious shearing of the chest and blanket area in an air conditioned room, without placing undue stress on the alpaca, may also be considered. Avoid wetting the blanket of an unshorn alpaca since water seals the surface fibers creating a "mat" that actually may cause heat retention. This luxurious coat becomes a sauna! If water is used,

make certain that it is contacting skin. Heat stressed alpacas should be allowed free access to fresh, clean, cool water. As they cool down and rest, many will begin to drink.

Alpacas that are lying down, depressed, unable to rise and in severe distress may not only require cooling (e.g. water hosing, air conditioning) but may also require more stringent measures such as alcohol rubs, ice water enemas or water immersion. If cold or ice water enemas are used for cooling, it is important to note that the rectal core temperature may be inaccurate for up to six hours. These alpacas need prompt medical attention by a veterinarian knowledgeable in heat stress for supportive treatment.

Alpacas can be successfully raised in hot and humid climates. Prevention of heat stress syndrome should be the mainstay of any alpaca breeder's health program, particularly where heat stress poses a significant health risk to alpacas. Special attention should be paid to quickly identifying affected alpacas, followed by prompt and effective treatment protocols.

Financial Impact - With all these management techniques that are being employed, I realize that I have almost eight months that the breeding males are on vacation. If you are planning on making part of your success on a breeding male, you need to really think about this. Co-ownership with a farm that is further north would be reasonable. That way, your male has opportunity to be at work in some of the other months. I dare say that even the farms up north of here have to watch the summer months themselves.

If your babies are being born in comfortable months, they can go anywhere. Do not buy a female that will deliver in these hot months. Let her stay, agisted if you must, till she has delivered and then bring her home. These protocols are now starting to run the cost of care higher. So, be very diligent about selecting your herd components if you live in the sunny south.

Summary - Not all alpacas are the same. Some are more tolerant than others. All humans are not as diligent as others. If you employ these protocols that we in the deep South are finding to work, you can greatly diminish a head on collision with disaster. You will ultimately save on both the physical as well as the emotional costs of losing your prized treasures. Raising alpacas in "Southern Comfort" only takes a bit of forethought, planning and common sense.

This presentation is the compilation of my thoughts and those of others who have shared with us in the industry along the way. If you would like to have a bibliography of this, please email me at GaAlpacas@aol.com and I will forward to you. This presentation in no means is an authority of record on the subject but a result of my experiences in the management of this wonderful species - the alpaca.

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