

**HERD MANAGEMENT SUBJECTS IN ALPHABETICAL ORDER**

**DISCLAIMER.**

*Although we have done our best to be accurate, this information is based solely on our own experience as breeders of llamas and alpacas. We take no responsibility for any errors or omissions, or the consequences of viewers relying upon this information. Notwithstanding the generality of the foregoing, we strongly encourage viewers with health questions to seek professional veterinary advice to complement the following information. In many sections, you will see that we refer you to your vet.*

**PURPOSE**

*The purpose of this herd management information is to give you our hands on practical perspective as experienced breeders. It is not intended to be an exhaustive resource manual, of which there are many. The perspective of other breeders may be different.*

**UPDATES**

*We update this information as we identify new items and based on viewer input.*

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### Associations

There are many associations to support llama and alpaca producers. Their scope ranges from international marketing and information, to registry control, to local social clubs. Here is a list of some (not all by any means) of these associations. Links to some of these are in the links section of this site.

Canadian Alpaca Breeders Association (CABA). Promotes alpacas in Canada.

Canadian Llama and Alpaca Association. (CLAA) Registry control, and some marketing, in Canada.

International Llama Association (ILA). Promotes llamas internationally.

International Alpaca Association. Promotes alpacas internationally.

Alpaca Association of Australia. Promotes alpacas and fibre internationally.

### Barn

When we first began as breeders, we imagined the need for a large, heated barn. We have now come to realize that these animals, having been developed and having survived in the South American Andean Altiplano at 15,000 ft, do not need that kind of general protection. You will need a place to keep your hay dry, a place to care for one or two sick animals, some shelter from wind (which can just as easily come from trees and terrain), perhaps some open sided cover, and not much more.

### Breeding

In this section, we are talking about breeding procedures, not about herd enhancement through breeding decisions.

Llama and alpaca females are induced ovulators; that is, the act of breeding induces ovulation (the releasing of an egg for fertilization). They don't have a heat cycle that you need to follow.

Here are some of the matters we consider in our breeding decisions.

Gestation for llamas is about 11.5 months; for alpacas, about 11 months. This can vary.

We will let the males start to breed at 2 years, although they are capable at one year, and maybe a little sooner. We let the female alpacas breed at 14 months or 100 lbs, whichever comes first; and female llamas breed at 14 months or 150 lbs, whichever comes first.

We decide when we would like to have deliveries. The biggest factor in this decision is weather. Where we live, we are content with deliveries from mid spring to early fall. In some areas, deliveries in hot summer is to be avoided, and deliveries in the fall might be too cold.

Except for about 2 weeks after a female's delivery, we leave the chosen male with the chosen females during any time of the year that will lead to deliveries when we want them.

Here are some of the things we used to do, but don't anymore, either because it takes too much time, and/or because we learned that the practice was inconsistent with the natural patterns of these animals.

- one on one breedings, on a sequence of dates chosen by us (their dates based on their own physiology are not always the same as our chosen dates);

- taking the male away once we guessed that the female was pregnant, based on her field behavior and rejection of the male (we learned they can fool you)

### **Care Table and Chute**

Both llamas and alpacas, that have been handled regularly from birth, behave very well. At the same time, they are best restrained for health care and for shearing. In fact, trying to do health care and shearing without restraint usually leads to a frightened animal. Generally, they are not frightened by a restraint and gentle handling.

You will need a chute - something the animal can walk or be led into, and that restrains them, usually by means of padded bars held against each side of their necks. Some chutes offer slings. We think they frighten animals, and have never used them. You can do all of your medical care for llamas and alpacas in this chute, and you can shear your llamas in this chute.

For alpacas, and sometimes very young llamas, we also have a care table. It is 4 ft x 8 ft. Through the middle runs a metal pole that is hung at both ends in posts. By bringing the alpaca next to the table while in a vertical position, and restraining the alpaca there, we can then swing the table to the horizontal with the alpaca restrained. At that point, we can do shearing and some health care. There is more detail to this which we will gladly supply on request. There are also manufactured tables of a similar style, but we found the simplicity of our design, and ease to make it, far outweighed the cost of a purchased table.

### **Conformation**

Any good book on llamas and alpacas will give you lots of details on conformation. Here are some basic items we consider.

Conformation is important to the extent it allows the animal to lead a normal life.

Conformation to the extent it just adds to a cutsy look is a waste of time. For example, lots of people get hung up on llama “banana” ears. I have never understood the relationship between ear shape and anything important like fibre, eating or reproduction.

You want animals with good backs, good legs, and good teeth.

### **Disposal of lamas**

You should properly dispose of dead animals to avoid contaminating your farm. There are companies that will haul deceased animals away. Lots of wild animals die in the woods every day, and mother nature does the rest.

### **Embryo transplant**

This has been tried in llamas and alpacas, but without much success. The same is true for artificial insemination.

### **Feed - bottle**

On the rare occasion, you may find it necessary to bottle feed a cria.

We use a clear, plastic screw top bottle (this allows you to measure and monitor the amount of fluid consumed) and a soft, flexible nipple, approximately 2 inches long. Many plastic pop bottles are appropriate containers, and the cap and nipples are available at your vet.

Although there are probably many ways to let the cria feed, this is what we do. We straddle the cria, facing forward, and hunch over the cria a little bit. This creates some darkness, which simulates the darkness underneath the dam. A little bit of pressure from your legs helps to hold the cria in position. We put one hand under the cria’ chin, and hold the head up a bit. With the other hand we offer the nipple. If the cria doesn’t start to suck right away, we will gently

move the nipple in and out of the cria's mouth. Keep the tilt of the bottle such that fluid is always available, but not so much that the cria chokes. Be patient. Even a small amount at first is a good start. Cria's feed regularly in small amounts. Offer the bottle regularly, and let the cria take as much as it wants.

At the same time, you should be trying to get the dam into milk. As you succeed in getting the dam going, wean yourself from the cria by cutting back on the availability of the bottle.

### **Feed - hay**

We give our animals year round free choice access to good quality grass hay. We like the protein content to be around 12%. Sometimes we give them hay with a higher percentage of alfalfa, but not as a regular diet. I have never seen a llama or alpaca get fat from hay. They will get fat from excessive pasture. These animals did not have high nutrition in the altiplano. While we can improve upon that nutrition, we don't have to over do it.

### **Feed - supplements**

We give a daily dose of a mineral and vitamin powdered supplement, if they want it. If they have taken what was put out the day before, they want it. This helps avoid deficiencies in minerals and vitamins that can lead to a host of challenges.

We also use corn/oats/barley (Cob) in a molasses mix. They love it. We use this as a treat, and to help with weight gain if needed.

### **Feed - tests**

Any supplement you buy will have the contents analyzed.

Hay and pasture can be tested for content. We used to do a lot of this, until we realized how difficult it is to make adjustments to feed intake, and therefore found that the best way was to just give them good hay, pasture and the mineral and vitamin supplement.

### **Fencing**

Most breeders advise against barbed wire, and we agree. At the same time, these animals can handle it - its just not needed, and there is a risk of their being unnecessarily cut.

Most breeders also recommend page wire on the outside perimeter of your farm, to keep dogs and coyotes out. We have this in most of our areas, but we also think this is more relevant if you just have alpacas. If you have llamas mixed in as well, they act as guards. I have even known of alpacas ganging up on a coyote.

Inside fencing can be high tensile. It needs to be moderately tight, but not anywhere near the tightness needed to restrain cattle. You can use springs to maintain the tension, but more commonly people use high tensile tighteners. There are several kinds of these. We don't recommend the kind that fold the wire back in any way. These are hard to use and eventually break the wire. We prefer the ones that can go at the line end, or in the length of the line, and that roll up the wire as tightened. These are easy to use and I have never had the wire break at one of these tighteners.

### **Fertilizers**

It's your choice between organic or non-organic. We are organic.

Leave some time between application and grazing. Your fertilizer supplier can tell you how long.

### **Fibre - characteristics**

See the section in this website about fibre.

### **Fibre - defined**

Fibre is the hair like coat grown by llamas, alpacas, guanacos and vicunas. Some people

like to spell it “fiber”. Both spellings work for us. However spelt, it is not something we eat to keep our digestive system working well.

### **Fibre - genetics**

We know that fibre responds faster to breeding enhancements than does conformation. This is fortunate, because fibre is more important. There really is not a lot of rocket science to this. Look for a male that has better fibre than your female, and breed away.

For the most part, predicting colors from a breeding is difficult. There are some absolutes: breed a genetic white to a genetic white, and you will get a white; breed a paint to a paint, and you will get a paint. What is a genetic white? There is some very complicated way of determining this, which you can learn from a text. For the most part, we don't get hung up on this. This is so because one of the great advantages of these animals is their natural diversity of color, so the more color combinations we get, the more we like it, and we always can find enough of the basic solid colors to meet our needs. After each spring's shearing, we combine fleeces based on quality and color and come out with a range of colors that is unique to that year.

### **Fibre - grading**

There seems to be a lot of different scales used in grading fibre, all using the basic criterion of microns. A micron is 1/1,000,000 meter.

Here is the breakdown we use, and which follows the breakdown of one of the major South American fibre producers.

Royal			
Baby	Baby	Superfine	Utility
under 20	20.1 to 25	25.1 to 30	over 30

### **Fibre - grooming**

Did you ever read that diet book that had one page full of the basic rule: “do not over eat”. It's like that with llamas and alpacas: do not over groom! The one exception is if your business is showing, and you don't care about harming the fibre.

The most we do is this. If the animal is going in an auction, we will clean out the basic debris, and dirt, and do a small amount of brushing. If the animal is being cleaned for shearing, we will hand pick out the basic debris, and gently blow out the dust and smaller debris. To blow out, we use a small compressor on low setting. We acquaint the animal with the sound, and blow across the fibre away from the animals head. They don't mind it at all. They might even like it!

If your interest is showing, you will have to do more grooming. We can't help you with that, because we don't do much showing.

### **Fibre - processing**

One of the bottlenecks in this business in the past few years has been getting fibre processed quickly and properly into yarns and fabrics. Thankfully, there are many good mills now getting started. We can point you to a few if you contact us.

### **Fibre - shears**

You will need a set of hand shears, and a set of small clippers (like human hair clippers), both of which you will need for general care of the animals. If you are going to do you own shearing of the animals, you will also need a set of commercial grade large shears. We can point you to manufacturers that we use if you contact us.

### **Fibre - shearing**

Shearing is done as the volume on the animals requires. Generally, you want to shear if the fibre length before the next shearing will exceed 6 inches. Letting fibre grow to longer lengths ruins the fibre and is hard on the animal. Shearing is done in the spring. This allows a



little growth before the hottest sun (to avoid sunburn), and plenty of growth before the next winter.

As mentioned elsewhere in this information, we use a care table to shear all alpacas and very small llamas, and we shear the other llamas in the chute. We use commercial grade electric shears.

The pattern used to shear an animals is designed to separately remove the various qualities of fibre on each animal, and to insure animal safety. Basically, you take off the blanket (chest area), and then move towards the limbs. I expect that each shearer may have their own preference. There are many text books on the subject. We will email you the pattern we use if you contact us.

### **Fibre - sorting**

We sort the fibre as it is sheared from each animal; that is, we put the best fibre into one bag, and so forth for other fibre. Once we have it all in storage, we then combine the various bags based on our planned usages of that fibre for the year.

We use large, clear plastic bags to contain the fibre as is taken off the animals. If the fibre is to be stored for more than a few months, we move it into old pillow cases (extras purchased at the second hand store), adding lavender to protect from moths, even though we have never had a problem with moths.

### **Fibre - testing**

Yocom-McColl. [www.ymccoll.com](http://www.ymccoll.com) , will give you everything you need to know about the sampling procedure.

We test fibre every time it is sheared, so this means that the first time is usually at around 1 year. It is reasonable to suggest that a better measure of the animals capabilities is the test at 2 years, because the 1 year test will contain a lot of baby fibre, which is usually pretty good.

### **Field layouts**

This is a common sense item. Your needs will change as the size of your herd grows. You need to determine your needs, and then sit down and start sketching out layouts. In doing those sketches, here are some items to consider.

- You will want to have a care area. If you have a barn, it would be there. The care area is where you would do your animals care (shots, weighing, caring for sick, shearing, etc.)

- You want to be able to move animals from all fields into your care area. You can accomplish this by runways (narrow corridors that lead to the care area) or by having all of the fields fan out from the care area, or really any other way you wish.

- You may want to have more fields than the number of groups into which your herd is split. This will allow some fields to be given a rest.

- You want to keep intact males away from females that they are not intended to breed. The best situation is to have them out of sight and smell, but that is not always possible. At least, have them separated by more than just a single fence line.

- You will want to have enough fields to accommodate the following groups: one field for each male breeding a group of females; females not being bred; males older than 1 year; males under 1 year.

### **Guanaco**

Guanacos, llamas, alpacas and vicunas are all at the same hereditary level. Guanacos are similar to llamas, although not as big, and they have a consistent two-tone brown color. Vicunas are more like alpacas, and have the finest fibre of them all. If you were a South American native in ancient times and caught with vicuna fibre - end of the road for you. It was reserved for only

the royalty. Guanacos and vicunas are wild. Llamas and alpacas are domesticated. There is a lot of debate on who came first.

### **Guard llamas**

Llamas, male or female, are excellent guard animals for themselves, for alpacas, and for other livestock. They will point to danger just like dogs and horses. They have a high pitch scream that is an alarm and deterrent.

One should not count alpacas out of the game for guards. I know of alpacas that cornered and injured a coyote who had the misfortune of getting into the pasture. They point just like llamas, and have the same alarm call.

### **Handling**

Like most animals, llamas and alpacas will sense your mood and approach. Generally speaking, if you are calm and kind, they will be too.

Llamas and alpacas are not like dogs in their approach to humans; that is, they generally do not want to be in your space. Instead, they usually choose to be just at the edge of your space. They are extremely curious and will come to check out anything going on, but they will usually stop a few feet away. At the same time, when you make the effort to bring them into your space, for haltering or some other activity, they will usually calmly accept this switch.

We use wands to move llamas and alpacas. These wands are about 5 feet long, and have red ends. Ours are fiberglass, but essentially anything light and handy will do. I am not sure of the need for color, but it looks nice and it may catch their attention more than no color. The wands allow you to extend your reach, and waving them a bit (not frantically) catches their attention. The wands can also be used for a gentle prod.

You can also get control of animals in a large area by using a rope. Hold the rope between two people, or tie one end to a post. Flicking the rope tends to keep the animals away from it, and you can thereby use the rope to guide the animals as you wish.

To get control of a llama or alpaca, give yourself the advantage of some barriers; that is, a small area (10 ft x 10 ft), or a corner. There is no point in chasing llamas around an open field.

Like all animals, llamas and alpacas have a balance point along each side of their body. The exact point is determined by their eye set. If you are ahead of that balance point, they will stop and turn back. If you are directly opposite the balance point, they will stop. If you are a little bit behind the balance point, they will move ahead. If you are a large amount behind the balance point, even to the point of being right behind them (where they might not be able to see you) they will become unsettled and unpredictable. The best way to learn this balance point is to work with your animals. For example, if you are trying to move animals along a fence line, just stay about 20 feet away and a little bit back of the balance point and they will start to move in the desired direction. You can easily observe their responses as you advance or retreat relative to the balance point.

Some animals will want to be stubborn for a moment, refusing to move. We find that just standing there, crowding their zone, will eventually lead to the movement you desire.

To halter an animal, get it to a point where its flight can be discouraged. There are many ways to do this. For example, use a corner with the assistance of wands, or use a corner with a couple of people with or without wands, or use a corner with a rope, etc. Have the lead draped around your neck with the clip on the right side. Have the halter in your left hand. Approach calmly. We say, firmly and loudly "stand". I doubt they understand the word, but they eventually relate the general sound to the desired activity. If your approach leads to nervousness, stop and let them settle. Once you are close enough to do so without lunging, put your right arm around

the neck of the animal. If you have wands, drop them calmly to the ground. Get as high up on the neck as you can with your arm. Slowly bring the halter up to their nose, out in front so they can see it. Slip the loop over their nose. While still pressing their neck between your right arm and your side, use both hands to do up the buckle on the halter, reach with your left hand for the clip on the lead and attach it to the underside of the halter. Keep the lead taught as you release the pressure of your right arm, take hold of the lead a short distance from the halter with your right hand, and let the rest of the lead calmly slide off your neck, eventually taking the end of the lead in your left hand. If you are doing this for the first time with an animal, break the entire process down into many steps, doing a little more each time. The time gap can be as short as you wish.

We usually lead an animal with one hand on the lead a short distance under the chin, and the other hand at the end of the lead. Sometimes on long walks, we will just hold the end of the lead.

To get an animal to walk, let them first get used to a halter. Then encourage them forward with the lead. This is not a tug of war, or at least it is not a tug of war you will win. Instead you want them to go in little increments from a slight movement of their legs to a full walk. We put tension on the lead, and then as we release that tension we say, firmly and calmly, “walk”. This conveys the message that the annoyance of tension on the lead is replaced by the word “walk” and that the annoyance will stay away if they move forward. If they don’t move forward, we apply tension and repeat the process. When I say little increments, I mean little - even the slightest movement of a toe or unlocking of the knee is progress. As in the case of haltering for the first time, you should break the learning into small steps.

To release an animal from a halter, reach around the neck with your right arm, creating pressure between your arm and your side. While maintaining that pressure, use both hands to undo the buckle on the halter, and slip the halter off the nose taking the halter and lead into your left hand. At this point, the animal is being held only by your arm pressure. It is best to retain this pressure and to restrain the animal until they settle. If you let them jump away, they will repeat that every time. A well behaved animal will often just stand there once released, but will eventually realize they can now go back to their non-human space.

When picking up a cria, put one arm in under their neck and the other under their groin. If you put the other arm behind their hind legs, they will kick and make it difficult.

If you want to restrain a cria on the ground, reach across its back, reach through to the legs closest to you, pick those legs up, put the cria on its side, keep the legs in the air (this way they have nothing to push against), drop to your knees, put the neck of the cria under one leg between your knee and foot, and the groin of the cria under the other leg between your knee and foot. In most cases they will accept this.

In South America, the natives will transport animals without leads or restraint by making them cush, and placing a tie around the back and under their rear legs. This works well.

To create good behavior in your animals, you need to work with them regularly, right from birth.

### **Health - Acute allergic reaction**

This is a sudden reaction to medication, and can be lethal. Your vet can give you the solution to carry with you whenever you are giving medications. This solution counteracts the reaction. Time is short so have it with you.

### **Health - AI and ET**

This has been tried in llamas and alpacas, but generally does not work because of some physiological reasons.

## **Health - Antibiotics**

We have general purpose antibiotics on hand in injection form, and in a paste. We use these if there is some minor injury. For major health challenges, we consult our vet for appropriate antibiotics.

## **Health - Behavior**

These animals are very stoic. This is admirable - no whining so to speak - but at the same time it means that by the time you realize they are sick, they might be really sick. The best indicators of illness are unusual behavior and weight. Watch for changes in behavior, because this usually means that something is changing for them. It might be minor, and it might be a developing health challenge.

## **Health - Birthing**

Any good reference text will have a section on birthing, and there are usually courses going on to help with some hands on practice.

Here are some general guidelines we follow.

- Get lost. If you observe a birth, you are best to observe from a distance, because it will probably be impossible for you to observe close at hand without creating anxiety. If you feel some problem is developing, step in.

- Once the cria is delivered, here are some of the things we do

- dry it off

- make sure it is breathing normally, and generally ok

- desensitize it by touching it all over (this will help with future

handling),

- check for maturity

- umbilical cord care: with scalpel remove excess beyond 3 inches, doing so by shaving at the removal point, not cutting because cutting may lead to bleeding; dip in iodine (get this from your vet); tie off with dental floss if bleeding persistently (usually not needed)

- once again, get lost

- We usually check the dams udder to make sure there are no plugs in the teats. Even this may not be needed, because I doubt checking them happens in the wild.

- From a distance, watch for nursing. If you stand there, and worse still if you try to make it happen, you will disrupt the natural process. For example, the cria's nuzzling around under the dam looking for the udder is what stimulates the dam to release her milk. Just let it happen.

- If nursing is not observed within 3 hours you will have to intervene and give colostrum by bottle, and maybe later on give some whole milk.

- We also give an enema at 2 hours. The cria do not mind this, and it eliminates any worry about constipation.

- We give the cria's umbilical cord a second dip with iodine at 4 hours

- We will put a cria jacket on the cria if the weather is cold, but we usually try to avoid doing this for the first few hours to avoid interfering with the natural bonding which relies a lot on smell.

## **Health - Birthing checklist**

- Here is the checklist we keep at delivery

Health Cria Born

Time of birth

Naval dip, at birth and at 4 hours  
Weight  
Maturity\_\_\_\_\_

Desentized  
Birth Complications  
Colostrum, 4 oz at 3 hours, if not nursing  
Whole milk at 5 hours if not nursing  
Enema at 2 hours

Health Dam Delivering  
Weight dam, as last checked before delivery  
Weight placenta  
Udder            were plugs removed?  
                     was colostrum observed within 6 hours, and when?

### **Health - Birthing kit**

Here are some of the items we keep together, ready for birthing

Betadine surgical scrub - for disinfecting/cleaning  
Cria jacket  
Dental floss  
Gloves - surgical  
Gloves - arm length  
Iodine dip bottle (we use a 35 mm film container)  
Iodine for naval dip  
J-Lube - for lubrication  
Nasal aspirator to suck fluid from nose if necessary (usually not)  
Oxytocin  
Penicilin  
Scalpel knives  
Towels

### **Health - Blood plasma**

We usually keep a stock of blood plasma for use with crias who are not thriving,  
or  
for other animals that need a boost. Your vet can tell you how to get this and your vet will have to administer it.

### **Health - Blood drawing**

Blood can be drawn from animals for health checks, and is also needed for registrations. For the first several years, we had our vet do all of these. We now do them ourselves. Your vet will have to show you how if you decide to do them on you own.

### **Health - Blood restoration**

Sometimes blood characteristics need a boost. This is usually the result of an illness. Your vet can give you the injections to be used.

### **Health - Blood tests**

Sometimes blood tests are needed to see what is going on, in terms of blood characteristics, vitamins and minerals. See "Blood drawing" for how to do this.

### **Health - Breeding**

See the Breeding section for how we handle the breedings.

We give all breeding females, and males being used a lot, an injection of Vit B at the start of their breeding season. Your vet can give you the details.

### **Health - Choanal atresia**

This is a hereditary defect that blocks the usual flow of air in the nose. It is usually fatal. If the cria is struggling, it is usually best to put it to sleep. Your vet can help you with this.

### **Health - Colostrum**

This is the milk first produced by a dam for her cria. See Passive Immune Transfer. If the cria does not receive this from its dam, you can bottle feed it to the cria. Check with your vet for recommended volumes. Local goat farms often sell frozen colostrum in small bags. Thaw then slowly in warm water.

### **Health - Diarrhea**

It is no different in these animals than in humans. It can mean just an upset stomach, or something more serious. Animals can die quickly from dehydration. Kaopectate works well. Ask your vet for instructions.

### **Health - Dystocia**

This means "birth complication". The incidence in these animals is low - I think around 2-3%. You need to be prepared to handle this because your vet may not be able to get there in time. To prepare yourself, take a course that includes a wet lab.

### **Health - Enema**

We routinely give an enema to cria at birth. See Birthing.

We use a 60 cc syringe with a 1/4 inch shaft, with warm water and dish soap. Inject slowly.

### **Health - Fever**

Body temperature can be taken rectally. Add a little lubricant such as petroleum jelly. Insert and hold the end of the thermometer gently against the inside of the rectum for a minute or two. Normal adult temperature is 37.2 - 38.7 C. Normal baby temperature is 37.7 - 39 C. If it is high, it usually means they are fighting an infection. If it is low, it may be one of the signals that they are shutting down, and could die.

### **Health - Flax Oil**

This is an excellent all purpose skin conditioner, for minor sores or scaly skin.

### **Health - Foaming**

Foaming at the mouth can occur just from eating too fast, and usually does not mean anything more. If it seems excessive and continuous, have your vet take a look.

### **Health - Heart**

Normal resting heart rate is 60 - 90 beats/minute. If you get a stethoscope, your vet can show you how to use it. This is sometimes useful information to convey to a vet if you are discussing a sick animal.

### **Health - Heat stress**

Although these animals are used to extremes in temperatures, they are really not used to continuous hot calm weather. Their tolerance declines with activity, such as walking or breeding.

If heat stressed, you will notice heavy breathing and nostrils flaring. They need to be cooled down, with shade, water mist, cool ground. Once on an alpaca that got stressed, I wetted her fore leg pits and groin with a slow running hose. She did not complain.

In most cases the animals will find a cool spot. You just need to make such a spot available.

These animals cool off by spreading their legs forward (instead of folded underneath), and by widening the stance of their rear knees when pushed down. These steps open up these areas to heat exchange. Conversely, when it is cold they cover up these areas by tucking all legs in tight to their body when pushed.

### **Health - Injections**

At first, you will probably have your vet give injections, and after a while you may start to do them yourself.

Use your animal restraint system, even for your most docile animals. Needles are sharp and the injection might sting a bit.

Injections are either intramuscular (IM) or subcutaneous (SQ).

Your vet will show you the best places to do each, and the appropriate procedures.

### **Health - Nursing**

If the dam is not lactating right away, don't panic, because it often starts very soon after delivery. If the dam persists in not lactating, you can encourage her with oxytocin (your vet will give you the dosages), and it is sometimes helpful to give the dam's udder a warm water sponge massage.

### **Health - Nutrition Boost**

If an animal gets really run down from some illness, they may benefit from a rapid boost in nutrition. We have used a product called Ketamalt successfully. Get details from your vet.

### **Health - Pain**

The presence of pain can be obvious. It also can be subtle, as displayed by hard breathing or grunting. Obviously you want to find the cause of the pain, and in the meantime your vet can tell you how to give some relief to the animal by injections.

### **Health - Oxytocin**

This is the chemical that a dam produces that naturally releases her milk. If the milk has not appeared, you can give oxytocin by injection. Your vet can give you details.

### **Health - Passive Immunity Transfer**

This refers to the passage of immunity from the dam to her cria by the cria ingesting colostrum soon after birth and the by antibodies in the colostrum passively going from the cria's stomach into the cria's system. Unlike some other mammals, llama and alpaca dams do not pass these antibodies to cria in utero. The cria's ability to obtain these antibodies through their stomach ends shortly after birth. This is why it is essential that the cria get colostrum within the first few hours of life. All reference texts have a good discussion of this.

### **Health - Penicillins**

There are penicillins for fast, strong short term effect, and others for long term effect. We keep a supply of both on hand. Your vet can recommend some for you.

### **Health - Poisonous plants**

Although it is rare, these animals can consume poisonous plants. The reference texts will have lists.

### **Health - Pregnancy checks**

There are four basic pregnancy checks; field tests; ultrasound; progesterone levels; and fact.

Field tests means that the female and male are not interested in each other.

Ultrasound is taking a picture of the uterus, either rectally or through the abdominal wall. Progesterone levels change with pregnancy. All of these are subject to error.

Fact is the only one not subject to error. Fact is you have a cria, or you do not.

At first, we relied on the first three and spent a lot of money on testing. Slowly we learned that it was a waste of money. Fact is all that counts. Now we leave the males with the females when we want them to breed, we don't do any pregnancy testing, and we let the facts speak for themselves.

### **Health - Premature**

The reference texts will give you details on how to determine if a cria is premature, and the extra care that is needed. Don't give up on a premature cria. We saved an alpaca cria that was born weeks early and under 10 lbs. They are fighters. You just have to stick with the cria by bottle feeding. Help the dam get ready by warm water udder washes - to bring her milk in, and a few shots of oxytocin.

### **Health - Prolapse**

This is the inversion of the uterus, allowing it to extend outside after delivery. It is scary. It usually results from a dystocia. We have had one. It started when the cria caught one front foot, which resulted in our having to push the cria back a bit to release the foot. The cria delivered normally, but a prolapse developed. Call the vet. While you wait, try to keep the dam quiet and down. She probably won't resist. Keep the uterus clean. Put a clean towel between it and the ground. Put sugar on it to absorb the fluid which allows it to contract. The vet will put it back and stitch up the vagina to retain it. The vet will give you instructions on special care. Hold off rebreeding for a couple of months. Remember that the cria will want to nurse soon, so get the dam fixed up and ready to nurse as quickly as you can, and then step back.

### **Health - Reproduction**

You should become familiar with general reproductive information. Reference texts are your best source.

### **Health - Rickets**

This happens from insufficient minerals and vitamins. It appears as rosebuds at the end of the ribs (which you can feel), or enlarged front knees. Fall crias may be more susceptible. Low growth rates may occur. There are vitamin shots you can give, and your vet can give you details.

### **Health - Selenium**

Selenium deficiencies and excesses can cause problems. The only way to control this is to have your feed tested.

### **Health - Stitches**

If your vet has to put in stitches, you may want to remove them. You can clean the area with betadine scrub, and clean out the holes with hydrogen peroxide. Snip the cord, and gently tug out each end with tweasers. You can then apply an antibiotic paste to ward off infection.

### **Health - Teeth**

On females, the only thing you might have to do is cut off excessively long incisors. To do this, use a cutting wire just like for cutting horns on cattle. You will have to restrain the animal in your chute, with a halter, and have an assistant hold the mouth open a little and hold the head steady. We tie the lead off to help hold the head steady. Once you get a groove started (which is very quickly), the rest is easy.

On males, you may have to do the incisors, as for females.



On males, you will always have to do the fighting teeth. These are on the top and bottom, and emerge around 2 years. We use wire snips - small size. You will have to have the animal in your chute, in a halter, and tie the lead off. We used to put a padded tub across the mouth, but have since decided that it added little except annoyance for the animal. Separate the lips, and insert the snips over the tooth, leaving about 1/8 inch to the gum and clip. The animal will try to resist, but just stay with it and you will succeed.

### **Health - Tubing**

Tubing is an extreme procedure by which fluid is sent down a tube to the animal's stomach. It is scary. You should learn how to do that at a clinic, or let your vet do it. The risk is that you send fluid down the wrong tube into the lungs, with obvious and immediate lethal results. In our opinion, it is a last resort procedure.

### **Health - Ulcers**

These animals have sensitive feelings, and I think that results in their sometimes getting stomach ulcers. There is a substance you can give them orally that helps. Your vet can give you details.

### **Health - Urethral stones**

I guess females can get these, but we have only seen it in males. The stones block the urethra. They are painful and may require operation. Probably (in a male) breeding is ended.

### **Health - Weaning**

Weaning by human control is usually at 50% of the dam's weight, but no sooner than 4 months of age and no later than 6 months of age. We usually just go to 6 months. Many people adopt the natural pattern of letting the dam decide when to wean; that is, natural weaning. We are moving to this pattern.

### **Health - Weight**

Monitoring weight is the single best indication of overall health. These animals are very stoic, and will not readily display illness. Their weight, however, is a sure sign. We weigh our animals every month, with the exception of cria which we weight every week for the first few weeks. We expect alpaca cria to gain about 1/2 lb/day, and llama cria to gain about 3/4 lb/day. If we have a sick animal, we monitor weight every day (sometimes twice a day) to make sure they are maintaining their average weight, or gaining weight if that is necessary.

We assess condition by feeling the backbone. If it is pointed, they are lean. If it is bulbous, they are fat. We do this regularly as we handle the animals, even without weighing.

### **Health - Worming**

We take a fecal sample every 3 months and have it checked by our vets for intruders (worms, etc). If they recommend worming, we do it. Otherwise, we don't worm.

### **Identification**

In order to register your animals, they must be identified, and the best way for that is microchip. Your local association will give you the name of a microchip supplier. You may also choose to tag your animals. Some use tags hung around the neck. Others use ear tags. We have about 50 animals, and we don't use any tags. At some point, you just won't be able to remember animals without tags.

### **Insurance**

Insurance is relatively inexpensive - about 2 - 3% of insured value.

### **Microchip implantation**

This is an easy procedure. We usually implant at the base of the left ear (call the poll of the ear). Others prefer the underside of the tail. Clean the area of fibre. Apply some rubbing

alcohol. The instructions from the microchip supplier take you the rest of the way. It's easy.

### **Record keeping**

In varying amounts, depending upon your tendency towards paperwork, you should keep records of key facts about your animals. You will refer to this record regularly as you manage your herd. We keep a record, by animal, of all of the following, in alphabetical order: antibiotics, breeding and deliveries, nursing, teeth care, vaccinations, weight, worming, and vitamins.

### **Parentage verification**

DNA testing is the best way to prove parentage. Proving this is required for registrations. The best way to prove this is blood tests. In Canada, we use Davis Labs in California. They will fax you the procedures. It requires drawing blood.

### **Reference texts**

There are many good reference texts. You should get a couple. We use: *Medicine and Surgery of South American Camelids*, Murray Fowler, DVM, and *The Alpaca Book, Management, Medicine, Biology, and Fiber*, Eric Hoffman and Murray Fowler, DVM.

### **Registries and Registrations**

If you are in the breeding market you will want to have your llamas and alpacas registered. The Canadian Livestock Records Corporation registers both llamas and alpacas in Canada. For information on procedures, policies and fees you may either visit their website at [www.clrc.on.ca](http://www.clrc.on.ca) or contact them directly at 2417 Holly Lane, Ottawa, ON, K1V 0M7.

The United States has two registries, one for llamas and one for alpacas. Their respective websites are: [www.lamaregistry.com](http://www.lamaregistry.com) and [www.alpacaregistry.net](http://www.alpacaregistry.net).

You have a choice on which countries in which to register. You will want to register in the country in which you live. Registrations beyond that it is a marketing decision. Living in Canada, we register in both Canada and the U.S.A.

### **Scales**

To obtain the weight information we recommend, you will need a set of weight scales. The only practical way to manage this requirement is to have the scales incorporated into your animal chute.

### **Sheds**

See Barns.

We look after 50 animals with 3 sheds, each about 10 ft. x 10 ft. We will fax you a basic design if you wish. They cost about \$400 each plus labor.

### **Trailer**

You will need a trailer to transport your animals for shows, to the vet, breedings, etc. We have a 13 ft "V" front trailer that serves our purposes with 50 animals. We pull it with an AWD minivan. The "V" front reduces wind resistance and encloses the front tongue area.

### **Vicuna**

See Guanaco.