



**SO YOU WANT
TO BE A
LLAMA MAMA**

**NOTES ON REPRODUCTION,
BIRTHING AND CARE OF THE
NEWBORN LLAMA**



*International Lama Registry
Educational Brochure #8*

LLAMAS ARE FUN!

These unique animals are rewarding spiritually and financially. Whether raising llamas as a business or a hobby, many people have had their lives and lifestyles totally changed by these lovable, easy-to-care-for creatures. One can quickly become a member of the growing ranks of “llamaholics.” No matter how long you own llamas you can learn something from or about them every day. They are kind, clean, quiet, peaceful, stoic, cute, uncomplaining and beautiful.

This brochure covers basic information on breeding, birthing and common problems and procedures for care of mother and baby. Welcome to the wonderful world of camelids!

BREEDING

(Shearing both males and females before breeding makes the whole procedure cleaner and healthier.)
When is your llama old enough to breed? Males become fertile between 10 and 36 months of age, with the average being 24 months. In fact, from several months of age on, young males will mimic adult breeding males. These youngsters are often seen playing by piling on top of each other, a female in prone position or a male in the act of copulation. We firmly believe that pasture breeding (allowing the female and male to live together for a period of 14 to 21 days) produces a higher conception rate and is more natural than hand breeding (putting male and female together for as long as it takes for them to copulate and then separating them.)

The female is normally ready to be placed in the breeding herd between 15 and 20 months of age, or when she has reached approximately 60% of her adult weight. A female may conceive as young as four months, but this is extremely rare. Pregnancy at an early age can endanger not only your llama's life, but her health and physical development as well. If a mature breeding male is living in the same field as females with babies, the young females should be weaned and removed at 4-6 months of age (depending on their size and condition), or they and their mothers should be separated from the breeding male.

Female llamas are induced ovulators, which means that the act of copulation will set into gear the mechanism initiating ovulation. They do not exhibit common outward signs of estrus or heat (as

cattle or horses do), thus it is difficult to ascertain the day a female might be receptive to a male unless you actually see them breeding, or can “hand-tease” the female by presenting the breeding male to an isolated female to detect receptivity. You will not always see your female being bred, unless she is being hand bred, because copulation often occurs at night as well as during the day. During copulation, both the female and male are in sternal position for 5-50 minutes. A non-stop array of sounds from humming to grunt-chortling and orgling may be heard.

Females probably begin a follicular wave pattern about three days post partum. Normally the female remains receptive to the male until she has been bred and ovulated, although spontaneous ovulation can occur. Because it takes about 21 days for the uterus to totally involute and clean up, we recommend waiting this period of time until breeding. Your female should be checked for any outwards signs of discharge before being put in for breeding. Having your veterinarian do a vaginal check with a speculum 14-21 days post partum is highly recommended.

Because ovulation is induced, llamas may breed and conceive any month of the year and produce healthy babies. As a result, you may want to regulate the length of the breeding season according to your climate and conditions by introducing and removing the breeding male at specific times of the year. Where winters are severe, hypothermia, frostbite and exposure to cold rain or snow are factors to consider, just as extreme heat, humidity or dryness are in summer.

GESTATION AND SIGNS OF PRE-PARTURITION

Gestation is normally between 335-365 days, with 350 days as a mean. Our ranch has yet to induce labor in a llama, preferring to let Mother Nature take her course. As the time of birth, or parturition approaches, you may notice some, all or rarely none of the following signs which are seen when kneeling or on your hands and knees beside or behind your female. (Shearing your female helps immensely in observation.)

1. The posterior portion of the abdomen becomes gradually more distended.
2. The udder begins to swell close to the body. Swelling then continues into all four quarters, which normally have one nipple per quarter.

3. At 1-72 hours before parturition the nipples may swell and become tight and warm with globules of sticky or crystalline colostrum (the first milk) on the nipple tips.
4. The lips of the vulva may elongate and swell, relaxing for the imminent birth. When the female is resting in basic (sternal) position or goes on her side, the vulva may part, showing some of the inner vaginal lining. Do not become alarmed. This is normal.

DELIVERY

Llamas give birth in daylight hours unless a problem with presentation occurs. Any difficult birth is called dystocia. There is no special English term for the process of the llama giving birth (like foaling, calving, lambing). Birthing or parturition are most commonly used.

The mother-to-be may stay off by herself for several hours to several days before giving birth. She may also seem more subdued and quieter than usual, lay down and stretch out sideways and emit louder, more frequent distressed humming sounds, or more "llama talk," than normal. If she lives with a male, this is a good time to separate her, as breeding males will occasionally try to mount a birthing female - not a good situation for the mother or unborn baby!

Your llama will give birth in a standing-squatting or prone position. If all is well, the water will break, lubricating the birth canal, and a small shiny bag will be pushed out (it may appear and disappear several times before remaining out). The front feet, nose and head should follow, and may sometimes be seen inside the bag. With the next strong push, the sack is usually ruptured by the extension of the legs to the outside as the elbows are pushed over the pelvic rim. Sometimes there is a short delay at this time while the shoulders slip through the birth canal. When the rest of the body slides out, the umbilicus is automatically disconnected. Usually all of the placenta remains inside with nothing hanging out or showing until the entire placenta is expelled later.

Since most babies are delivered while the female is standing, fluids in the lungs, trachea and nasal passages have a chance to drain out due to gravity before the baby is dropped on the ground head first. If the baby is having trouble breathing, do not be afraid to give mouth-to-mouth resuscitation or hold

it by the hocks and swing it around to expel fluid from the lungs.

The baby will be delivered with a unique thin membrane (the epidermal membrane) covering its entire body and attached to the lips and toes. Make sure the nasal passages and mouth are clear of mucus and other debris, including the membrane which is sometimes tightly adhered to the edges of the lips and nostrils. After towel drying the baby (called a "cria" in Spanish) carefully follow the standard operating procedures outlined below. In the case of first-time mothers, it is helpful to move the mother and baby to a quiet stall or paddock, in sight of and in close proximity to llama friends so bonding can develop uninterrupted. Simply pick up the baby and the mother will follow. In hot weather, a shady spot with fresh water and hay or grass should be provided.

Llamas are good mothers and love their babies, but they are passive and do not lick their newborns or eat the afterbirth. They do commonly smell and touch the baby with their nose.

NEONATAL CARE

The following procedures are both recommended and commonly used, but may not be applicable in every situation.

1. Treat the navel with Betadine (tamed iodine) Chlorohexadine (Nolvasan) or use any antibiotic ointment if the above are not available. If the umbilical cord is dripping or pumping blood it should be clamped or tied off 1 to 1-1/2" from the body. Special ties and clamps can be obtained from your veterinarian or, in case of emergency, short pieces of dental floss or suture material work well. Use care in tying these materials to avoid amputating the stump. If the umbilicus is already dry or has been contaminated with dirt, treatment is not recommended.
2. Give a warm enema - squeezing **gently**. If the baby later appears to be straining even though it has previously passed a quantity of meconium (the first fecal material), it may be necessary to give another enema. A drop of liquid Ivory soap in 4-8 ounces of warm water is fine. A human Fleet enema, warmed in a bucket of hot water, also works well. Your veterinarian may recommend injectable Vitamin A and D at birth.
3. **Only in a selenium deficient area**, administer

injectable selenium (Mu-se) sub-cutaneously or intramuscularly in the hind leg.

4. Weigh each baby at birth and monitor its weight carefully for the first week, or longer if necessary. Normal birth weight is 22-35 pounds. Most crias either lose or maintain weight for the first day or two, but should gain a minimum of 1/2 pound per day thereafter. This gain may be irregular but should average out.
5. Other vaccines or anti-toxins may be indicated in your area. Your veterinarian will best advise you in the matter.
6. The baby should ideally have colostrum within the first 2-4 hours of life because of the natural laxative effect of this milk, the energy provided by the nutrients and the high antibody content. It is known that colostrum is produced only during the first 24 hours of lactation and that the cria dramatically loses the ability to absorb the antibodies after 24 hours of age. The newborn llama is born without any antibodies. Therefore, it is of the utmost importance to be sure that all neonates receive adequate colostrum as soon as possible after birth. An IgG (immunoglobulin) test may be done 24-48 hours after birth. If the IgG level is not adequate, a plasma transfusion may be necessary. We recommend milking the dam at birth and bottle feeding the cria 2-6 ounces of colostrum. The sucking response is normally excellent when the baby is first born. If baby will not drink from the bottle, it should be tubed.
7. We also recommend "Malloning" or desensitising crias at birth, this involves laying the cria on a towel and touching, rubbing and flexing all parts of the head, ears, mouth, body and tail. Around 15 - 20 minutes twice a day for the first few days works wonders for later training. We want baby to bond with mom, not with us - so no huggy kissy.
8. First day of life priorities are: A) Make sure baby is breathing without trouble. B) Check the eyes, bite, and umbilicus carefully. C) Be positive the baby is actually nursing. D) Be positive the baby has passed fecal material. E) Be positive the baby has urinated and that no urine is leaking from the umbilical area.

If you have any reason to think your baby has a problem, call your veterinarian and have a physical exam and a complete blood count (CBC), and Routine Llama Panel (RLP) done.

WHEN THE BABY WON'T NURSE

The author's personal tips:

1. It will be much easier for baby to find the "right place" if mom is shorn. Crias can and do die from ingesting fiber.
2. Prime the pump by milking the mother and putting the milk in a stubby bottle with a sheep nipple (hole slightly enlarged) or other apparatus of similar nature. Two to four ounces every 4-6 hours is a normal amount to expect. After the baby has sucked down 1-2 ounces, place it at the mother's side and coax it to nurse. It helps to gently rub and blow warm air on the baby's hind quarters, especially on top in front of the tail in imitation of the mother. This and "humming" help initiate the search and nurse response. (Macho guys don't laugh - you can do this too!) Babies should be up and nursing within two hours.
3. Each neonate needs to receive 10% of its body weight in milk or milk replacer each day in order to grow and gain normally. If the baby will not suck from the bottle or nurse, it should be stomach tubed. Using a Lady Clair type bottle and a 16" cat/puppy tube, place the llama in a sternal position between your knees. Bending over and holding the head in your left hand, insert tube (unattached and lightly lubricated) through the baby's mouth and into the esophagus which you should normally see or feel on the left side of the neck. To make sure you are not in the trachea, listen at the end of the tube to be sure there are no breathing sounds or suck gently back on the tube. You should be able to feel the resistance. Attach bottle to tube when tube is about 12" down. Squeeze gently, giving 4-8 ounces. Repeat every 4 hours if the baby is not nursing on its own. Then, stand the baby at the mother's side and coax to nurse.
4. Do not be afraid to perform all of the above with baby males, even if it takes several days. They do not turn instantly into "berserk males" - just treat them like llamas, taking care not to cuddle or talk to them.

POST-PARTUM CARE OF THE MOTHER

Milk a squirt from each teat to dislodge the small plug of colostrum in the opening. If the udder is small and there is little or no milk, hot pack and massage it with warm water. Your veterinarian may

suggest giving an injection of Oxytocin subcutaneously or intramuscularly. If, on the other hand, the udder is tight, distended, hot or swollen, milk out as much as possible and feed it to the baby from a bottle. Keep milking, extra milk should be frozen and put into a colostrum bank for future use. Rarely, it may be necessary for your veterinarian to administer an injection of Lasix to reduce udder edema and make the milk come more easily. If Lasix is given, make certain free choice fresh water is available for mother. Should blood be noticed in the milk (causing a pink tinge), the mother may have mastitis and should be checked by your veterinarian.

The mother should be watched carefully for the first week. If any discharge or pus is noted coming from the vulva after the first few days, ask your veterinarian to check her to determine whether or not she needs to be cultured and/or infused intra-uterinely. This will be an easy matter for the veterinarian to decide.

The placenta (afterbirth) should be passed within 4 hours and often comes shortly after birth. Call your veterinarian if after this length of time you cannot find evidence of the afterbirth or if membranes are still hanging out. **Do not pull on the membranes** since this can easily cause hemorrhage and/or retention of pieces of the placenta in the uterus and predispose the llama to uterine prolapse. Treatment should definitely be decided by your veterinarian and often includes the use of Oxytocin and systemic antibiotics along with intrauterine treatment.

WEANING

Babies are most commonly weaned by the age of 6 months. We halter train our crias before weaning. Except in extremely rare instances, male and female weanlings may be safely placed together until the age of 1 year. This is also an excellent time to further train and work with your new llama.

Finally, the most important thing to remember when your llama begins to give birth is **DON'T PANIC!** Most of the time there will be no problem. If you suspect a problem and delivery seems prolonged, call your veterinarian immediately. If help is not available, pray and use your good common sense. If a neonatal care clinic is being held in your area, do attend it.



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Kay has been closely involved in the breeding and daily health care of over 7,000 llamas, alpacas, guanacos, and camels since 1965 and has handled over 600 dystocial births.

Kay grew up on an Ohio farm with an M.D. father and a brother who is an exotic animal veterinarian. She was a pre-med graduate of the University of Colorado and received a teaching degree from John Carroll University, after which she spent two years at Case Western Reserve Medical School doing canine surgery for a pulmonary physiologist.

Since 1973, she has lived in Sisters, Oregon breeding camelids and Polish Arabian horses. Kay organized the first Llama Medical Conference for veterinarians on the Patterson Ranch in 1981. She was a founder not only of the North American llama industry, but of the ILA and the International Llama Registry on whose board she served from inception in 1985 until stepping down as president in 1991. Kay is a charter member of ALSA and a steering committee member of the Heifer Project International "Bolivian Llama Improvement Project."

Love for animals, medicine, and the education of llama lovers on all aspects of management, breeding, obstetrics, and neonatal care remain priorities as she and her husband, Eric Sharpnack, DVM continue caring for a herd of over 200 llamas on Hinterland Ranch.

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