

Breeding, Birthing and Crias.

Last updated on 25/04/2021

HOME

THE BASICS

THE ALPACA

KEEPING ALPACAS

WELFARE

REPRODUCTION

HEALTH

ALPACAS & PEOPLE

Use the menu above to navigate between alpaca subject areas.

For your reference, a pdf file of this complete page (correct at 25/04/2021) can be [downloaded here](#). This webpage is regularly updated so do return for the latest pdf version.

Background biology.

It is common practice in New Zealand to start mating females at around 2 years old when there is physical and mental maturity and she may breed until she is about 15 years old. Mating can start after shearing in late spring though is commonly done after New Year so that the cria are born during the following summer.

Although male alpacas reach reproductive age at about 18 months, they should not be allowed to mate until at least 2½ years of age. Earlier matings may result in damage to the penis if the prepuce has not detached from it, a process that is not complete in 100% of males until 3 years old [24]. Damage caused by premature matings may then result in associating mating with pain and prevent a successful stud career. Moreover, the testes do not physically mature until 3 years of age.

Camelid species do not have a breeding season but are induced ovulators. Previously, it was believed that the act of mating resulted in the dam ovulating and although this may contribute, it is now known that a stimulating protein factor (known from unrelated studies as β -nerve growth factor) is deposited with the sperm directly into the uterus [3]. As a result, ovulation occurs within 48 hours and the egg is then fertilised. As a result of ovulation, a functional corpus luteum is present 2–3 days later. The fertilized egg may be found in the uterus seven days after mating, and this implants at around 30 days. The functional corpus luteum is responsible for the production of progesterone. At about one week after mating, the increasing levels of this hormone start to cause changes in the alpaca's behaviour. Although ovulation occurs equally between left and right ovaries, pregnancies are invariably carried in the left horn of the uterus. An embryo created in the right horn must therefore migrate to the left - the mechanism for this is unclear.

Mating

On introduction of a male, a receptive female will kush (sit) for the male to mount her which he does whilst making a distinctive **orgeling sound**, believed to be another contributing factor to the induction of ovulation. It is interesting that females can be induced to ovulate by sitting next to an enclosure where mating is happening.

There are two breeding methods: pasture breeding in which a male is put in with a group of females, and managed breeding which involves introducing a male (normally on a halter and lead) to a female within an enclosure, ideally 3 x 3 metres in size. Apart from giving a clear conception date, the latter method allows for control of the mating time. Extended (>30 minutes) or repeated matings can cause injury to the lining of the uterus and cause an infection. The alpaca penis has a hard cartilaginous tip which impacts the uterine lining - blood traces may occasionally be seen on the fleece around the vulva after mating.



Pregnancy

Gestation averages 355 days from the conception date with a few not unpacked (born) for 380+ days. Swelling of the abdomen is noticeable in the last three months with the cria's movements and occasional kicks clearly visible in the last month. The female develops noticeable udders only about two weeks before unpacking. It should also be added that some dams hide the pregnancy well, even to the experienced eye.

It is good practice that all breeding activities and observations are recorded for future reference.

Confirmation of pregnancy can be done by:

- 'Spitting-off'. If fertilisation was achieved, the female will repel any further attempts to mate with her. The term 'spitting-off' is a slight misnomer as although some dams will spit at the male, others (particularly maidens) may run away, scream, kick out or even try to jump out of the pen to escape him. Spitting-off is done by reintroducing the male (on a halter and lead) into a penned area and the female behaviour noted. On occasions, the female reaction is so strong that taking the male into the pen is not needed and is very likely to result in the spitting of regurgitated grass. Spitting-off should be done after about two weeks post-mating and again at four weeks if a male is available. Further spit-offs may be carried out every two months to confirm continued pregnancy.
- Ultrasound scanning - Usually performed after 60 days when the pregnant uterus can be seen. This requires a skilled operator and appropriate facilities otherwise the method does carry a risk of false negative results.
- Serum progesterone level - this rises to a peak 7 days after mating and if the mating was successful, the level remains elevated.

If pregnancy was not achieved, the serum progesterone level drops back to normal by 14 days after which dam will sit ready to be mated again. The induction of ovulation and resulting 14 day progesterone cycle should be considered in mating and remating.

The great majority of dams will unpack within the 340-370 days window with most crias arriving in the warmest hours between 11 am and 4 pm. If the weather conditions are poor or likely to deteriorate, the dam is able to defer going into labour. This is a legacy of evolving at high altitude where the maternal instinct is to time unpacking during good weather. This gives her cria the greatest chance of survival as it must dry, stand and feed



quickly.

Identifying the typical behaviours of a dam going into labour is not easy and around the expected unpacking date, requires either frequent paddock visits or ideally having a birthing paddock next to the house.

The birthing process.

This can be broken into three stages:

Stage 1. The start of contractions. The dam may become restless, hum frequently and usually move away from the herd. She will stop grazing, make frequent visits to the communal midden and may alternate standing and sitting in an effort to become comfortable. The duration of this stage varies considerably but finishes when contractions reach one each two minutes.

Stage 2. Birthing of the cria. Rupture of the fluid (chorioallantoic) sac starts this phase and is completed by the expulsion of the cria. The process normally lasts between 5 and 30 minutes but may be interrupted by resting periods and can take significantly longer for a dam's first cria, or if she is overweight. Assistance is seldom required, particularly with older females who have unpacked many times. Almost all crias are unpacked head-first, facing downwards, with the majority of dams standing. As contractions increase the head appears, closely followed by one forelimb, the second appearing some minutes later. Strong contractions occur to pass the cria's shoulders and chest. Interestingly, some dams will pause and resume grazing for a period during this stage of labour, with the cria dangling. Time in this position does allow fluid to drain from the cria's lungs however. The remainder of the cria is passed shortly afterwards, with the help of gravity. The dam does not lick the cria once on the ground. The umbilical cord detaches very soon after unpacking.

Stage 3. Expulsion of the placenta. This normally occurs within 20 minutes of the cria unpacking but can take up to one hour. If it has not passed within 8 hours, veterinary assistance will be needed.

It should be noted that neither the unpacking cria nor the placenta should be pulled to 'assist' their passage. Doing this can cause serious damage to the dam.

Dystocia (abnormal labour) is unusual in alpacas but indicated if stage 1 of labour is longer than 6 hours or the dam shows distress through repeated standing, sitting, rolling and vocalising. Should this be seen, a veterinary must be called immediately. The most common dystocia is when a head and a single leg emerge but the other leg is retained in the uterus - a situation that may be corrected with veterinary intervention.

Crias unpacked before their due date may be immature, indicated by unerupted incisors, drooped ear tips, showing tendon laxity and being very slow to stand after birth. Depending on their degree of prematurity, these crias may require assistance. This can range from help in standing and introduction to the dam's teats through to needing to be sheltered with the dam. Immediate veterinary support is vital for those weighing less than 5 kg.

With the cria on the ground, the dam and cria should be allowed to bond and all the herd members will examine the new addition. At the earliest opportunity, the epidermal membrane covering the cria's neck and thorax should be removed and the umbilical cord stub disinfected using alcoholic iodine or chlorhexidine solution dip or spray. Be aware that the dam may attempt to protect her cria from your activities.

Your birthing kit should comprise:

- Electronic thermometer,
- A tube of water-based lubricant,
- A [cria sling](#) (belly sling) and weighing scale (digital suitcase types are suitable),
- Disinfection spray as described above,
- Clean towels or paper towels,
- Colostrum powder plus appropriate feeding bottle and teat,
- Mobile phone with your vet's number available.

The newborn cria

All newborn crias will have a period of post-birth recovery and then move to a cush position before attempting to stand. Once standing, it will instinctively look to suckle from the dam. The birth to suckling sequence can be achieved in under an hour and most will be there in under two hours.

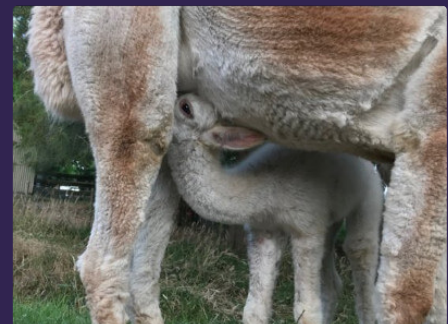
Birth weight should be taken, and this should be checked on a regular basis to confirm a normal weight gain pattern. The cria may lose up to 0.25kg in the first 24 hours but gain between 0.25-0.5kg daily from that point. Although the average weight of a newborn cria is about 8kg, maiden dams tend to have lighter offspring. Cria birth weights increase until the dam is 9 years old and then steadily decrease again [48]. Notable is that the dam and cria will hum to each other frequently as part of bonding and this may continue for several weeks. A few crias will need help to locate their dam's nipples as they may attempt to suckle from the wrong dam or even head for a dark area in a stable. New mothers should be checked to ensure milk flow as waxy plugs block the nipples.

It is vital that the cria drinks the dam's colostrum as it contains antibodies that provide passive immunity for the cria. These antibodies are unable to pass across the alpaca placenta so must be consumed. Other compounds contained in the colostrum provide gut protection from pathogenic bacteria. Immunisation of the dam with a 5-in-1 vaccine ([details here](#)), 2-4 weeks prior to the unpacking date, is effective in increasing the antibody concentration in her colostrum. A cria should consume 10-20% of its body weight of colostrum within the first 24 hours though antibody absorption is greatest in the first 12 hours.

Dams will only feed their own crias and they check that the right one is feeding by sniffing at the base of the tail where there are scent glands. The cria's tail will be raised at the start of feeding but slowly drops during the session. Opportunist crias may attempt to 'steal' feeds but are quickly pushed away when noticed.

Within 24 hours, the cria will pass meconium, a thick and tarry dark waste composed of cellular material, mucus and ingested amniotic fluid. Should the cria not excrete the meconium, it may become lethargic and require veterinary assistance. Unfortunately, these droppings are easily missed in the paddock so the behaviour of the cria must be watched over this period.

A single cria is almost always unpacked. Twin births are fairly rare and due to low birth weights, one or both crias may not survive. Most twin pregnancies are either resorbed or aborted early in gestation. However, there have been recent cases in New Zealand of both thriving. Twins born at the Nevalea stud, Lucy and Lucas, [6] weighed 3.9 kg at





birth and developed to normal adult weights. At the Gilead stud [9] the crias were born weighing 5.5 kg, which developed normally, and 2.8 kg (Timmy, pictured) which only grew to the size of a four-month-old. Remating of the dam can be done at a minimum of two weeks after birthing. In nature, the dam will wean the cria after some 6 months which coincides with an increase in growth rate of the new foetus she is carrying. On New Zealand farms, weaning is usually done at six months or 25 kg body weight. However, some dams will part or fully wean the crias themselves at an earlier age by refusing to feed the cria or only allowing feeds at dusk. Weaning is normally achieved by relocating the crias into a separate paddock, ideally out of sight of the dams. This sudden adjustment is stressful for them so one or two unrelated adults can accompany them. The process takes around 12 weeks; if the crias are reintroduced back to the herd too early, some may successfully suckle their dams.

[Back to the top](#)

References.

Most of the literature below can be accessed by clicking on the highlighted link. Some links will access the appropriate web page from which the article can be downloaded but others will immediately start downloading the full reference.

3. Kershaw-Young, C.M., Druart, X., Vaughan, J. and Maxwell, W. M. C. (2012). β -Nerve growth factor is a major component of alpaca seminal plasma and induces ovulation in female. [Reproduction, Fertility and Development, 24, 1093–1097](#)

6. Ferguson, F. (2018). Nevalea Alpaca farm welcomes rare twins. [Stuff Online, 20th February](#).

9. Rogers, M. and Goffin, H. (2009). Timmy - the tiny twin's story. *New Zealand Alpaca*, Autumn, pp. 36-39.

24. Cebra, C., Anderson, D.E., Tibary, A., Van Saun, R.J. and Johnson, L.W. (2014). *Llama and Alpaca Care*, Ch.15. 1st Ed., Elsevier.

48. Bravo, P.W., Garnica, J. and Puma, G. (2009). Cria alpaca body weight and perinatal survival in relation to age of the dam. [Animal Repro. Sci., 111:2-4, 214-219](#).

[Back to the top](#)

Quick page links:

[Home page](#)

[Stud Services](#)

[Alpaca products](#)

[Alpaca Sales](#)

[Alpacapedia](#)