Supervised yard mating of alpacas

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Breeding recommendations for supervised yard matings

- First breeding of maiden alpacas usually begins from 12+ months of age, if and when females have reached 65 % of their estimated mature body weight. Parous females may be mated 15-20 days after delivery of the cria if parturition was straightforward and unassisted, as ovarian function returns and the uterus recovers quickly after delivery of the cria.

- There is no simple way of selecting "more fertile" females from a group to mate on a particular day. There is no association between the time it takes a sexually receptive female to sit down for mating and likelihood of conception. Some females sit down immediately for mating, but fail to conceive; some females wander around the yard for 1-2 minutes before becoming recumbent for mating, and do conceive.

- Breed each female once when receptive*. Multiple matings of a single female may lead to uterine infection as the male penetrates the cervix with his penis during copulation and deposits semen into the uterine horns.

- Place the mated female into a yard with a male 7 days after mating to check for ovulation (perform a "spit-off test"). If the female is sexually receptive, ovulation did not occur and she should be mated again on that day (**start protocol again*). If the female is sexually non-receptive (known as "spitting off") at 7 days then she has ovulated i.e. has a corpus luteum on one of her ovaries and elevated plasma progesterone. So …

- … place the female into a yard with a male 14 days after the original mating to check for pregnancy. If the female that was non-receptive at 7 days is now receptive, conception did not occur and the female should be mated again (**start protocol again*). Non-receptivity by a female at 14 days indicates continued elevation of plasma progesterone (the hormone of pregnancy) and extended life of the corpus luteum … and we may *infer* that the female is pregnant. This variable sexual behavior in the presence and absence of plasma progesterone is characteristic of South American camelids, and is a very useful management tool.

- Perform a "spit-off test" in "early pregnant" females regularly (every 2-4 weeks) until ultrasound pregnancy diagnosis at (30 and) 60 days after joining to observe the foetus and thus confirm pregnancy status. There may be 10% embryo losses between a 14 day positive spit-off and 60 days of gestation, so re-mate any female that becomes receptive durning this time and minimise stresses such as showing, shearing, transport during the first 2 months of pregnancy to optimise conception rates.

- Perform a "spit-off test" with females intermittently throughout gestation, as up to 5% foetal loss occurs between 60-days gestation and full term. To minimise stress on pregnant females, this procedure may just entail bringing the pregnant females into a yard next to a mating pair. Any female that has aborted will usually walk up to the fence and sit adjacent to the mating pair. These females can be ultrasounded to confirm loss of pregnancy and re-mated depending on the management calendar and birthing pattern of the farm.

*A female should be given three rounds of this management before seeking veterinary advice for failure to conceive. Assuming males achieve a 50% conception rate per mating, 90% of females will conceive in the first 3 mating attempts after reaching puberty or post-partum (Mate 100 females and 50 conceive; mate non-pregnant 50 females a second time and 25 conceive; mate non-pregnant 25 females a third time and 12.5 conceive = 87.5% pregnancy rate). Ensure that dates and findings are recorded at each mating to assist your veterinarian with further reproductive investigations.

Male maturity and fertility

The definition of puberty in alpaca males is two-fold:

- The adhesions between penis and prepuce present at birth, have broken down so the male can physically mate a female; and
- The male is producing viable sperm; usually associated with a mean testicular length > 4 cm (ideally > 5 cm long).

All males should have reached puberty by the age of 3 years, but remember that 10% of yearlings and 70+% of 2 year-olds are fertile. Males over 3 years that have not achieved any pregnancies are considered sub-fertile and should be castrated.

Use fertile males and plan ahead. It takes approximately 60 days for a fertile male to make healthy sperm. It is imperative that all males are subjected to a health check by their owner/manager (and their veterinarian as necessary) at least 2 months prior to the start of the breeding season. During this check:

- Males should be identified (brass ear tag *and* paddock tag so there is no confusion as to who is mating whom!)
- Weighed/body condition scored
- Shorn at appropriate time
- Vaccinated (see *Cria Genesis Vaccination information sheet*)
- Drenched for worms/fluke (depending on faecal egg count results; see *Cria Genesis Liver Fluke information sheet*)
- Any other husbandry performed as necessary
- Males should be certified and have DNA collected if owners wish to register their off-spring.

Depending on body condition scores and pasture conditions in the weeks prior to mating, supplementary feeding of males may be indicated. There is no single recipe, but lupin supplementation may be of benefit if pasture is low in protein. Remember that over-conditioned males are prone to heat stress which could result in sperm damage and infertility.

Prior to the joining season, unproven/recently purchased males should be given time to acclimatise to the new property, herd, pasture, management, yards etc. They should also be used in supervised yard matings to confirm their fertility and ability (veterinarians can confirm pregnancies using trans-rectal ultrasounds as early as 18 days after a female is mated). Don't expect a new male to successfully impregnate females the day he arrives.

As a rule of thumb, use a male twice per day during supervised yard matings. There is a spectrum of fertility in males, so whilst some will perform up to 6 successful matings per day, others will go-through-the-motions but fail to achieve any pregnancies. With time, you will identify where your males fall on the spectrum of fertility.

There is no association between copulation length and pregnancy rate.

Australian alpaca farmers have been successfully using supervised-yard matings for the last 25 years. It is imperative that you use fertile males and prepare them 8 weeks prior to joining so they are fertile, fit and healthy. Set up a farm husbandry calendar on your farm in consultation with your local veterinarian to ensure optimal alpaca health, fertility, production and welfare.

USE GOOD HUSBANDRY TECHNIQUES. KEEP GOOD RECORDS. WRITE DOWN TREATMENTS/MATING DATES/MEAT WITHHOLDING TIMES.

NO PRODUCTS ARE REGISTERED FOR USE IN ALPACAS. CONSULT YOUR VETERINARIAN AND ALWAYS READ THE LABEL BEFORE USING ANY OF THE PRODUCTS MENTIONED. *NEVER* USE ANY PRODUCT IN ALPACAS THAT IS NOT REGISTERED FOR USE IN FOOD PRODUCING ANIMALS.

FOR ANY SIGNS OF UNUSUAL OR SERIOUS ANIMAL DISEASE, RING THE DISEASE WATCH HOTLINE: 1800 675 888.