

# Ask the Animal Scientist

## Early Female Breeding



Dear Dr. Steve,

Settle a dispute between my husband and me. We have a female alpaca that is 12 months old and weighs about 95 pounds. She's ready to be bred, flirting with the boys but she certainly is not yet full size. Her dam is quite large as is her sire. My husband says that "time is money," so he feels she should be bred right away. I'm not so sure. To me this seems way too soon. What are your thoughts?

Signed, Winnie from Winnipeg



Dr. Steve Hull, PhD  
Animal Scientist



Dear Winnie,

Breeding at 12 months is increasingly thought of as ill-advised. Breeding at 18 months or older is much wiser – sometimes you need to wait 24 months (or even later). It has nothing to do with receptivity. Read on for physiological/ anatomical and financial details.

The musculo-skeletal system of the growing alpaca, its development, and the parallel development of the endocrine/ reproductive and other organs are not necessarily in synchrony. There are alpacas that have given birth at approximately 18 months of age. These females were obviously bred at about 6-7 months of age as they were showing signs of receptivity - or more frequently, "the stud got out." These young dams as later adults are often stunted, with poor bone density, do not have adequate milk, and often have poor maternal instinct. Some way to start life as a breeding female...

Some have successfully bred alpacas at 12 months of age. The rationalization is that the fetus stays small for the first two trimesters and this time allows the young female to finish her growing. Those breeders also assert that cattle people do this all the time with their females. Unfortunately, physiology tells us otherwise.

The increase in blood progesterone (think "pro-gestation") during pregnancy (starting at four days after breeding) causes inappropriate and early closure of the bone epiphyseal plates. This is where the "hard" long bone meets the joints. When this closure occurs, there can be no further hard bone development. Physiology also tells us that bone development continues through the second year and often into the third year of life.

Many of us have seen small maiden females, who were not bred, but showed a tremendous growth spurt in her second and sometimes third year. That later

growth simply would not have occurred had she been bred early on. Progesterone "tells" the female body to physiologically completely shift its focus to pregnancy and to stop any maturation. If growth were to still occur in an undersized animal, then that is stopped.

With early breeding, mammary development is incomplete, and as bone development ceases, the future lactational calcium resources will be scanty as well. Again, this is no way to start out a breeding female for a career as a productive and maintenance-free mom.

Additionally, four-legged animals have tremendous loads on their spinal columns as a function of pregnancy. Just look at heavily gravid alpaca females close to term. Not only do they waddle, but also the backbone is under terrific strain. Not surprisingly, they spend a lot of time lying down. That backbone needs every bit of development and muscular support and this development simply takes

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## From a purely financial issue, a later breeding will derive far more healthy offspring.

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time. This is why the judge in the ring will often put both hands on the backbone and push down. That judge is assessing the integrity of the back muscles and bone.

For you human females – think of a baby approximately 2-3 times (or more) the size of a normal human baby, with at least double the placenta weight and uterine mass - an incredible total! Imagine the load those alpacas are under from a purely mechanical aspect (and we wonder why pregnant alpacas spit...).

There are many human females that are terribly “receptive” at twelve years (or less) of age. These girls weigh 80-90 lbs and are at extremely high risk for pregnancy complications. Prematurity in this group is very high. Fetal death is very high and babies are often born quite

undersized. Pregnancy related death in these early pregnant moms is many times that of what it is in a mom of twice that age (mid- 20’s). Rarely is their good maternal instinct and care for the baby. Sadly, the medical problems continue out beyond that early pregnancy.

Likewise, early breeding in camelids is associated with many still births, early abortion and undersized crias. Yes, the pregnancy is now gone, but the consequences of that early pregnancy remains fixed in place. But the recurring and future veterinary costs (for dystocias, lactation herbs, bottle feeding, C-sections, etc) remain for as long as you will pay for it and the dam survives.

I will argue from a purely financial issue that a later breeding will derive far more healthy offspring than early breed-

ing. This issue has been looked at in other species and the human examples above. The clear consensus is that allowing proper frame and bone development is key to future reproductive and lactational health. That requires that NO progesterone be present during growth and development.

Alpacas are distinctly social animals that observe and learn from others in the herd. It is quite clear that young females that have watched other females give birth and nurture those crias are far better at providing care for their own cria. A young female, bred too early, is often terrified by this little cria who just wants to nurse and snuggle up to her.

Alpacas are not cattle. If a pregnant alpaca female has problems, we don’t ship her to the slaughterhouse. Just because something can be done, does it mean it is good management.

As an industry, we are clearly shifting our philosophy from early breeding (crias at any cost) to choosing that first breeding time to maximize that female’s later reproductive health. Yes, we may not have the first pregnancy as early, but we will have many more healthy crias over that female’s lifetime. This seems like an appropriate tradeoff to me.

Let’s think wisely on our early breeding decisions and give our future productive females every option to have many trouble free pregnancies, health crias, a solid nutritional lactational foundation, and the instinct to protect and nurture those valuable crias.

**Bottom line – hold off for another six months!**

*Steve*

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Right: Ellen Karman; intro photo by Jennifer Clark

