

# Early Breeding

Richard Wheeler, DVM, Diplomate ACT  
Board Certified, Reproduction  
Poudre River Veterinary Clinic  
Fort Collins, CO

The equine industry (let's blame the Jockey Club) has arbitrarily set each foal's birthday as January 1 of the year it was born. That means a foal born in October will celebrate its 1 year birthday as a 3 month old, along with the 11 month old foal born in February that same year. In shows and races, the older foal has an obvious advantage.

I am sure there is a logical explanation for a universal January 1 birthday; however the rationale eludes me. So I called the AQHA for an explanation. They didn't know either (but they said if I join the AQHA I would receive a discount on Michelin Tires). Likewise, the AAEP didn't know; but they recognize each foal's actual birthday (they define a weanling as "under 12 months", so you still have an age discrepancies in competition).

If it is just a matter of convenience, why not choose July 1 as the official birthday as they do in the Southern Hemisphere? Or flatter me and designate October 29. That would be a lot more convenient for me and all horse breeders.

Breeders want to give their foals every conceivable advantage. The greatest (legal) advantage a foal could have is a birthday on January 1. Unfortunately, it was pre-ordained by God that mares would naturally cycle and foal out during the fair weather between May and October. From roughly November until April most mares stop having heat cycles and enter a period of reproductive hibernation called **anestrus**. In the spring, as the days get longer and warmer, mares once again go into heat. However, there is a time period of quite variable length called **transition** when she shows signs of heat but will not ovulate (release the egg). Once the mare does finally ovulate, she is off to the races with regular heat cycles.

Pregnancy in horses lasts approximately 11 months. Therefore, to get a January foal it is necessary to breed the mare in February. Because mares are normally in deep anestrus, breeders must convince the mare that it is May. The only reliable way to achieve this super-natural feat is with artificial lighting at specific intensity. 16 hours of light and 8 hours of darkness each day for about 60 days will bring the mare into transition. If you do the math correctly, to get a February breeding it is necessary to start mares "under lights" in early December.

Often, as February rolls around, many breeders will ask me for a "shot" to bring the mare into heat. As I have already stated, the only reliable way to induce a mare to cycle is 2 months of artificial lighting which brings the mare into "transition". Once the mare is in transition, several drug regimens can be used to hasten ovulation (release of the egg).

Progesterone has been the most extensively used drug. Daily injection of progesterone or daily oral supplements of progesterone (Regumate) for 2 weeks often leads to ovulation 2 weeks after ending the treatment. Two advances in progesterone therapy have recently become available, long acting progesterone injections (weekly) and indwelling vaginal devices (CIDR, Cue-Mare) that release progesterone over a 2 week period. Most recently a commercially available form of equine follicle stimulating hormone (eFSH) has become available. eFSH, naturally produced by the brain, is a hormone that tells the ovaries to develop a follicle and mature egg. Studies have demonstrated that with daily injections of eFSH it is possible to shorten the transition period to 2 weeks. Prior to eFSH, researchers used Equine Pituitary Extract (which contained eFSH) for similar results. Sulpiride and Domperidone have also been used with variable results. They function by increasing prolactin levels (a hormone responsible for milk production and for ending anestrus).

To recap, the goal is to have a foal on January 1 and not before. The challenge is to get an anestrus mare cycling--out of season--for breeding. Because there are currently no drugs that reliably induce anestrus mares to cycle, sixty days of artificial light is necessary to stimulate mares into transition. Once in transition, a variety of drug protocols can be used to induce follicle growth and ovulation. Wouldn't it be easier to change the arbitrary birthday to May 1?!