



## eFSH

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Induction of multiple ovulations has been an elusive goal in the mare. Superovulation would potentially increase the efficiency and decrease the cost of embryo transfer by increasing embryo collection rates. In addition, mares that ovulate multiple follicles may have a higher probability of conceiving when bred to a stallion with limited fertility.

Unfortunately, techniques used successfully to superovulate ruminants, such as administration of porcine follicle stimulating hormone (pFSH) and equine chorionic gonadotropin (eCG) have little effect in the mare. The most effective and consistent therapy to induce multiple ovulations in mares has been administration of equine pituitary gonadotropins.

A highly purified equine FSH product (eFSH) has become available commercially in the past couple of years. The original or 'standard' protocol for use of eFSH involved initiation of treatment 5 to 7 days after ovulation and administration of prostaglandins the day after treatment was started to lyse or destroy the corpus luteum and therefore decrease progesterone production. Using this protocol, mares are typically treated with eFSH twice daily for 7 to 8 days before a group of large follicles (i.e. >35 mm in diameter) are present. Mares are then administered hCG to induce ovulation of the

follicles. Mares should be bred the day hCG is given or the day after hCG treatment dependent on stallion availability, etc.

A study conducted in 2004 demonstrated that follicular development continues if mares are allowed to 'coast' after follicles reach a diameter of 32 mm following several days of eFSH treatment. Follicles will continue to grow and develop in the absence of eFSH therapy. HCG can be administered approximately 36 to 48 hours after the last dose of eFSH. Ovulation rates utilizing the 'coasting' protocol have been similar to rates using the 'standard' protocol and potentially the number of eFSH treatments can be reduced.

A more recent study looked at the efficacy of eFSH treatment that was started after mares were allowed to spontaneously develop a group of follicles after prostaglandin administration. Treatment with eFSH was initiated when follicles reached a diameter of 25 to 30 mm. Mares were given eFSH for 3 to 4 days until the majority of the follicles were at least 32 mm in diameter. They were then allowed to 'coast' for 36 hours before receiving hCG to induce ovulation.

In general, mares treated with eFSH in the various studies have averaged 3 to 4 ovulations and 1.5 to 2.0 embryos collected

per cycle. Unfortunately, some mares do not respond to eFSH therapy (i.e. still ovulate a single follicle despite treatment) and some treated mares develop multiple large follicles that do not ovulate. Another overall perception is that superovulation treatment is more effective in younger mares than in older mares.

Ultimately, it is likely that the most efficient way to use eFSH for embryo transfer will be to tailor therapy to the individual needs of a specific mare. Judicious use of eFSH has a place in equine reproduction. Please consult with your equine veterinarian for recommendations.