# Researchers Study Early Postpartum Breeding in Horses

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Covering broodmares during the first month postpartum, often on the first postpartum estrus (termed "foal heat"), is routine practice at many dedicated breeding operations to ensure mares foal at roughly the same time each year. A mare that fails to conceive shortly after foaling continues to have subsequently later foaling dates, eventually missing a breeding season altogether and creating a financial setback for the farm. Generally breeders have a three- to four-week window of opportunity to achieve pregnancy after foaling to still maintain yearly foaling intervals, but a team of researchers recently set out to evaluate the impact of postpartum breeding date on pregnancy rates, pregnancy loss rates, and foaling rates.

Texas A&M University researchers analyzed data for the breeding cycles of 2,003 foaling mares over a three-year time frame at a Kentucky Thoroughbred breeding farm to determine the relation between postpartum breeding day and fertility outcome (producing a live foal).

"Use of multiple logistic regression (a statistical technique utilizing several explanatory variables) to control for factors influencing fertility outcomes and a fairly large database allowed us to examine influence of each specific day postpartum at breeding," explained Texas A&M's Terry Blanchard, DVM, MS, Dipl. ACT. "Looking at each day postpartum is novel, rather than picking an arbitrary cut-point."

Researchers found:

- Mares bred within 22 days of foaling were less likely to become pregnant.
- Mares bred within 13 days of foaling experienced increased risk of pregnancy loss.
- Mares bred within 20 days of foaling were at greater risk of not producing a foal.

Based on these findings, researchers concluded that fertility in mares continues to improve for about two and a half months after foaling, resulting in a greater likelihood of becoming pregnant and successfully bearing a foal. Broodmare managers and veterinarians might find it useful to manage certain foaling mares so that their first breeding occurs about three weeks postpartum.

Blanchard noted that the inclusion of additional factors would be beneficial in further research. "Since the mare herself explains so much of the variation in fertility outcomes, specific mare uterine involution and reproductive health factors would be a good place to start," he said. "Additionally, factors in mare management might explain differences in fertility outcomes."

The study, "Influence of day of postpartum breeding on pregnancy rate, pregnancy loss rate, and foaling rate in Thoroughbred mares," was published in *Theriogenology*.

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