

## Foal Heat Breeding

Whether breeding mares for business or pleasure, a variety of costs are associated with the venture. These costs may encompass several categories: (1) the daily maintenance cost of mare, (2) mare replacement costs and insurance, (3) costs associated with breeding (i.e., veterinary services, transportation), (4) routine health and farrier work, and (5) the stud fee. Many of these costs will be incurred whether or not the mare produces a live foal. Mare owners seek to minimize these costs while ensuring the general health of the mare and her ability to produce a live foal.

With an average gestation length of approximately 340 days, mares must become pregnant within 25 days of foaling in order to continue to produce a foal at approximately the same time each year. If the 25 day window is surpassed, the mare will continue foaling later each year, until eventually she will have to miss a breeding season. This is commonly known as “falling off the calendar.”

In most breeding operations, the majority of mares are pregnant at the beginning of the breeding season and must foal before being bred during the current breeding season. In order to minimize the length between foaling and breeding, managers may consider breeding the mare on her first ovulation postpartum, referred to as foal heat breeding. One benefit of breeding on foal heat is that the mare will produce a live foal at approximately the same time the next year, assuming she becomes pregnant. However, studies in the 1980s and 1990s reported lower pregnancy rates following breeding on foal heat, compared to foaling mares bred on a subsequent cycle. Some studies even reported that mares bred on foal heat were less likely to produce a live foal.

The lower reproductive performance reported among mares bred on foal heat is likely related to insufficient time for uterine recovery post-foaling among many mares. Studies have reported mares bred on their foal heat ovulation (approximately 10 days or fewer postpartum) tended to have lower pregnancy rates than mares bred on foal heat more than 10 days postpartum. Mares under consideration for foal heat breeding should be examined for the presence of any uterine or cervical bruising, intrauterine fluid or vaginal discharge.

The second option to minimize the interval length from foaling to breeding is to administer prostaglandin F<sub>2α</sub> approximately one week following the first ovulation postpartum. The practice is often referred to as short cycling. This will reduce the length of time until the next ovulation, compared to waiting for the natural subsequent ovulation. This may be a good option for foaling mares ovulation fewer than 10 days post partum or mares that need additional time for uterine recovery.

A study was undertaken among a cohort of Thoroughbred mares in central Kentucky during the 2004 and 2005 breeding seasons. Results found similar pregnancy rates 15 days post-breeding among foaling mares bred on foal heat at least 10 days postpartum, foaling mares short-cycled with prostaglandin F<sub>2</sub> $\alpha$  and foaling mares bred on a subsequent ovulation. However, mares bred on foal heat less than 10 days postpartum had lower pregnancy rates. In this study, mares were selectively bred on foal heat based on management and veterinary discretion. This finding suggests that, even with careful management, breeding mares fewer than 10 days postpartum is not advantageous.

Other more recent studies involving reproductive performance among foaling mares have also reported no differences in the pregnancy rates of mares bred on foal heat compared to foaling mares bred on a subsequent cycle. The improvement in the pregnancy rates on foal heat breeding in more recent studies may be related to improved veterinary management and treatment of mare postpartum.

In conclusion, breeding on foal heat can be a beneficial practice for improving the overall efficiency of a breeding program by maintaining consistent foaling dates over time. However, foaling heat breeding should only be considered if ovulation occurs at least 10 days postpartum and veterinary examination reveals normal reproductive health. The health of the mare should be the primary consideration in all breeding decisions.

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