

# Breeding Cows Without Estrous Detection

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Estrous detection is a major management problem on many dairy farms. It has been estimated that approximately 40 to 50 percent of all estrous periods of lactating dairy cows are not detected (1,2). It has also been estimated that 16 to 20 percent of all dairy cows presented for insemination are not in estrous as evidenced by high levels of milk progesterone at the time of breeding (3,4). Many errors are made in not "detecting" cows that are actually not in heat. Both of these problems can be very costly errors. Methods to improve or eliminate the necessity of estrous detection should be of interest to all dairymen and their veterinarians. The use of rapid progesterone assays may be of benefit to dairymen with estrous detection problems.

The necessary technology is now commercially available to enable every bovine practitioner to economically assay milk, plasma, or serum progesterone levels for their clients. Rapid progesterone assay kits indicate the presence or absence of a functioning corpus luteum. High levels of progesterone (greater than 5 ng/ml milk) are an indication of the presence of a functional corpus luteum and low levels (less than 5 ng/ml milk) indicate that a functional corpus luteum does not exist. Progesterone assays allow evaluation of the functionality of the corpus luteum. By rectal palpation one can only determine if a corpus luteum is present or absent—not whether a corpus luteum is functional. An indepth knowledge of the physiology of the normal bovine estrous cycle and of gestation coupled with rapid progesterone assay technology allows the dairy practitioner to offer his clients a new lever of reproductive management (5,6,7).

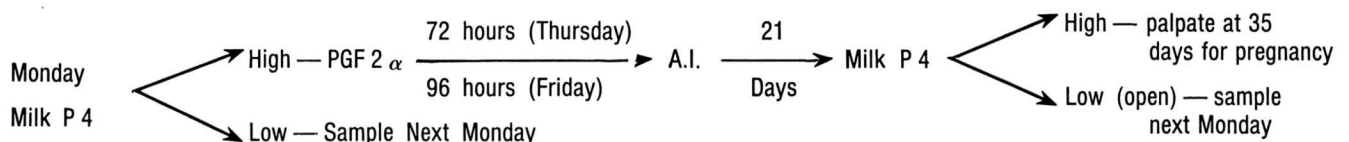
A breeding program incorporating the use of rapid progesterone assays and prostaglandin treatment has been successfully used to circumvent estrous detection problems in a 1200 cow dairy in central Texas. Each Monday morning milk samples are obtained from all known open, reproductively normal cows greater than 60 days postpartum for evaluation with rapid progesterone assay<sup>1</sup> (Fig. 1). Each of those cows with high progesterone levels (indicating the presence of a functional corpus luteum) are

injected with prostaglandin  $F_{2\alpha}$  on Monday and then bred by artificial insemination on Thursday and Friday, regardless of heat signs. Each cow is inseminated twice—at 72 and 96 hours following prostaglandin treatment. Those cows with low progesterone levels (less than 5 ng/ml milk) on Monday are re-evaluated the following Monday. Cows that repeatedly have low progesterone levels are anestrus and should be examined to determine the cause. The cows that are bred on Thursday and Friday are again evaluated for progesterone levels 21 days following breeding. Approximately 75 percent of those cows that have high progesterone levels 21 days following breeding are actually pregnant. However, nearly 100 percent of those cows with low progesterone levels at 21 days following breeding are open. Therefore those cows with low progesterone levels at 21 days following breeding are re-evaluated for progesterone levels the following Monday and placed back in the breeding program. Those cows with high progesterone levels at 21 days following breeding are rectally palpated for pregnancy diagnosis at 35 to 40 days following breeding. Those cows that are found to be open are placed back into the breeding program. Every cow is cycled through the program until diagnosed pregnant by rectal palpation or culled.

The use of rapid progesterone assays to select cows for prostaglandin treatment and breeding has been very successful. Of 251 cows bred on the program between December, 1985, and April, 1986, 109 became pregnant (43% of those bred). Of 293 cows bred during May, June, and July, 1986, only 53 (18% of those bred) became pregnant on the program. These pregnancy rates are not different than those seen in the typical southern Texas dairy herd. Pregnancy rates decrease dramatically during the hot summer months.

There are many benefits of utilizing a breeding program as described here. Probably the greatest benefit is the savings in labor. The breeding program as described here for a 1200 cow dairy requires approximately 6 to 12 hours per week. It takes two people approximately 2 hours on Mondays to assay milk samples for progesterone and inject the

FIGURE 1. The Use of Rapid Progesterone Assay Kits to Select Cows for Prostaglandin Treatment and Breeding.



appropriate cows with prostaglandins, two hours on Thursday to breed cows, and two hours on Friday to breed cows. Adequate estrous detection in a herd this size requires far more time than this total program takes. The breeding program as described here is conducted entirely on Mondays, Thursdays, and Fridays. There is no need for estrous detection or breeding at any other times. There is no need to have estrous observers or inseminators present during weekends or holidays.

**The use of rapid progesterone assay kits to select cows for prostaglandin treatment and artificial insemination is just one of many ways that veterinarians can utilize modern technology in their dairy practices.**

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<sup>1</sup> *Progestassay, Pitman-Moore, Inc., P.O. Box 344, Washington Crossing, New Jersey 08560.*

<sup>2</sup> *Lutalyse, UpJohn Company, Kalamazoo, Michigan 49001.*

## References

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