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Synovex-H Treatment of Cattle as an Aid for Detection of Estrus

Introduction

A common measure of reproductive efficiency in lactating dairy cows is the pregnancy rate or the percentage of eligible cows in a herd that become pregnant every 21 days. Two major factors influencing the pregnancy rate in a herd are 1) the conception rate which is also known as the pregnancy rate per artificial insemination (PR/AI), and 2) the heat detection rate which is also known as the service rate. In herds using AI, the service rate directly reflects estrus detection efficiency because a cow must first be detected in estrus before she can be bred. Unfortunately, recent studies have indicated that less than 50% of all estrus periods are accurately detected on an average dairy farm in the United States. This inefficiency in estrus detection not only increases time to first AI but can increase the average interval between services to 40 to 50 days. Many dairy managers choose to focus on improving PR/AI in their herds; however, over three times as much of the variation in average days open among farms is due to differences in service rate as is due to differences in PR/AI. Thus, successfully and accurately detecting estrus is paramount to a successful AI program.

The use of androgenized marker animals as an aid for estrus detection has been shown to improve both estrus detection efficiency as well as the accuracy of estrus (Kiser et al., 1977; Mortimer et al., 1987). This is especially true for smaller herds in which the sexually active group may include only one or two animals per day. Androgenized heifers have been shown to mount fewer pregnant cows compared with non-treated animals (Mortimer et al., 1987). In many cases, androgenized marker animals are fitted with marking devices or used in conjunction with tail chalk or paint. However, visual identification of standing behavior during routine estrus detection periods is the best indicator of standing estrus. Hormonal treatments for androgenizing marker animals typically include an induction period in which testosterone is administered via subcutaneous or intramuscular injections administered every other day for 20 days, and a subsequent maintenance period in which injections are administered every 10 to 14 days (Kiser et al., 1977). The use of Synovex-H (Syntex Laboratories, Inc., Palo Alto, CA), however, is a more convenient alternative to androgen injection for androgenizing marker animals (Mortimer et al., 1987).

Synovex-H Treatment Protocol

The following procedure constitutes extra-label use of Synovex-H. Please consult with a veterinarian before using Synovex-H as a method for androgenizing marker animals.

Synovex-H

Synovex-H is approved for use as a growth promotant to increase rate of weight gain and feed efficiency in feedlot heifers. Dairy and beef heifers for future reproductive replacements in the breeding herd should not be treated. Pellets should be implanted in the ear only; implantation at any other site may result in violation of Federal law. Each pellet contains 200 mg of testosterone propionate and 20 mg estradiol benzoate, both of which are endogenously produced steroid hormones. No slaughter withhold time is required for label use, however, milk from treated animals should not be sold for human consumption. Bulling, udder development, ventral edema, and elevated tailheads may occur in heifers treated with Synovex-H. Synovex-H is distributed by Syntex Agribusiness Inc., Des Moines, IA 50303.

Selection of marker animals

Lactating cows should not be treated with Synovex-H because milk from treated animals should not be sold for human consumption. Yearling freemartin heifers weighing 800 to 1000 pounds are commonly used as marker animals. Older, dry cows also have been used and are good marker animals because their pecking order within the herd is already established. However, older cows may be less desirable because they may not withstand the physical stress of constant walking and mounting activity compared with younger animals. Over-conditioned animals, animals with poor feet or legs, and those animals at the bottom of the herd pecking order should be avoided.

Treatment

Generally, one implant per 100 pounds of body weight has been recommended as an effective dose, and implants are evenly divided between the two ears. Most animals respond to treatment within several days to several weeks from the time of implantation. An intramuscular injection of 200 mg testosterone propionate at the time of implantation usually hastens the onset of the response but is not required for response. Treated animals are usually effective for about six months after implantation. Although animals can be retreated after their effectiveness begins to wane, most producers choose to treat a new animal. About 80% of treated freemartin heifers respond to treatment, and those animals that do not respond to treatment should probably be eliminated.

References

- Kiser TE, Britt JH, Ritchie HD. 1977. Testosterone treatment of cows for use in detection of estrus. *J Anim Sci* 44:1030.
- Mortimer RG, Guitierrez M, Salman M, Olson JD. 1987. The use of Synovex-H as a method for androgenizing heifers for teaser animals. *Proc Annu Conv Assoc Bov Pract* p.212.