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Testosterone-Treated Cows to Aid in Heat Detection

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Summary

Eight cull Hereford cows were given 200-mg. injections of testosterone propionate repository (Haver-Lockhart, Shawnee, Ks.) every other day for 20 days (10 injections). Four cows were given weekly booster injections with the same testosterone propionate; the other four were injected every three weeks with testosterone enanthate (Sigma Chemical Co., St. Louis, Mo.). Each cow was equipped with a chin-ball marker and each was used to detect heat in other cows. The detection period lasted approximately 45 days. Testosterone-treated cows served satisfactorily as heat detectors; those given boosters of testosterone propionate marked more cows in heat than those given testosterone enanthate.

Introduction

For artificial insemination to be effective, time and effort must be minimized detecting heat without overlooking cows in heat. Many heat detection aids have been developed, among them are "detector" animals equipped with markers that identify cows that have been ridden.

"Detector" animals in the past have been primarily gomer bulls prepared in various ways to prevent copulation or fertilization. They include penectomy, which involves severing or removing a portion of the penis; penal blocks inserted into the prepuce to prevent extension of the penis; deflecting the penis (side-winders) by putting a hole in the side of the sheath; and putting a ring in the sigmoid flexure to prevent extension of the penis. All methods have disadvantages such as cost of surgery, maintenance, becoming sore, and various reasons for not working.

Researchers at Michigan State University discovered that treating cull cows with testosterone induced bull behavior to the point that the cows made good heat detectors. They injected testosterone enanthate after a "warm-up" period of 10 injections every other day with 200 mgs. testosterone propionate. A cull cow thus used can be disposed of after the breeding season.

Because testosterone enanthate is difficult to obtain and expensive, we tried using testosterone propionate throughout the detection period.

Experimental Procedure

Eight cull Hereford cows were injected with 200 mgs. testosterone propionate every other day for twenty days (10 injections). Cows were then equipped with chin-ball markers and placed in pastures with cows

to be bred. Four of the experimental cows were then injected with 200 mgs. testosterone proprionate weekly, and four were injected with 1 gm testosterone enanthate every three weeks. Each pasture had approximately the same number of cows to be bred and a detector cow from each treatment. Cows with different testosterone had different color dye in the marker so the number of cows marked by each testosterone treatment could be counted. All cows were checked for marks twice a day. The treated cows were rectally palpated once a week for structures on their ovaries.

Results and Discussion

The testosterone proprionate-treated cows marked more cows than the testosterone enanthate-treated cows. Nine cows were marked by the testosterone proprionate cows that the testosterone enanthate cows did not mark. The testosterone enanthate-treated cows marked only 2 cows that weren't marked by the testosterone-treated cows. Cows quit working for 2 days after testosterone enanthate injection and then came in heat. They still worked while in heat, but the possibility of false mounting exists when that happens.

Palpations indicated that the testosterone enanthate-treated cows were cycling. Ovarian structures of the testosterone proprionate-treated varied. Some quit cycling due to lack of ovulation or a retained corpus luteum; others continued to cycle.

At the time of this study, one testosterone enanthate dose cost as much as five testosterone proprionate doses, but testosterone proprionate has to be injected more often.

Testosterone-treated cows served satisfactorily as heat detectors for other cows. Aggressive cull cows in good condition should do a better job as detectors than timid cows or cows in poor condition would.