The Use of Synovex-H as a Method for Androgenizing Heifers for Teaser Animals

R. G. Mortimer, *D.V.M., M.S*
M. Gutierrez, *M.V.Z*
M. Salman, *B.V.M.s, Ph.D. and*
J. D. Olson, *D.V.M., M.S.*
Fort Collins, CO 80526

Introduction

Detection of estrus is the most costly factor contributing to reproductive efficiency in dairy cattle (1, 2, 3). In Colorado alone, the potential economic loss from poor detection of estrus to the dairy industry is from $123 to $205 per cow per year (4). The use of teaser animals as an aid in the detection of estrus has generally been proved advantageous (5). Teaser animals are usually surgically altered intact males or androgenized females. The use of an intact male although surgically altered does not eliminate the potential of venereal disease transmission. In addition, the cost of surgical altering and time lost until the teaser animal can be used must be considered. Androgenizing heifers has proven effective. The accepted procedure has been intramuscular injections of 200 mg of testosterone every other day for 20 days plus biweekly boostering with testosterone injections (5, 6, 7). A simpler approach would be to use an implant containing testosterone to get a longer duration of activity in the androgenized heifer. This presentation will detail the preliminary results on the use of this procedure.

Materials and Methods

Heifers were androgenized by placing four (4) Synovex-H[b] implants in each ear for use as a teaser animal in each of four lots of cows furnished by Colorado State University Dairy. Each implant contains 200 mg of testosterone propionate and 20 mg of estradiol benzoate. Cows in each lot were exposed to an androgenized heifer for an observation period of 30 minutes followed by an additional observation period of 30 minutes without the androgenized heifer or the reverse. This occurred both morning and evening on each day of the experiment. Cows were observed for signs of estrus within each lot three days each week for six months. Observers were rotated among the lots after each observation period so no knowledge of the previous observation period existed. Days of the week, starting position of the androgenized heifer, and lot location of the androgenized heifer were rotated to eliminate possible bias. Heifers were reimplanted as necessary during the course of this experiment.

Results and Discussion

A total of 416 and 406 cows were detected in estrus during the observation period with the androgenized heifer in or out of the cow lots, respectively (Table 1). This represents only a 2.5% difference in the number of cows detected in estrus. However, the number of actual mounts increased from a total of 1479 mounts while the teaser animal was out of the lot compared to 1606 mounts while the teaser animal was in the lot. In this experimental situation, we did have three observers for the detection of estrus at all times. Thus, this may not be a true indication of cows that would have been detected under routine management. This particular herd routinely uses only one observer for detection of estrus.

TABLE 1. Effect of Presence of Androgenized Heifers On Number of Cows Detected In Estrus and Actual Mounts Observed.

	Location of Heifer		
Item	**In**	**Out**	**Difference (%)**
No. Cows in Estrus	416	406	2.5%
No. Actual Mounts	1606	1479	8.6%

The androgenized heifers appeared to be more selective about mounting only cows which were in estrus (Table 2). The number of attempts to mount other animals regardless of status of estrus was 92.7% by cows compared to only 7.3% by the androgenized heifer. In addition, the number of pregnant cows detected in estrus by the androgenized heifers was only 19 compared to 55 pregnant cows detected by other cows.

We concluded from this study that heifers can be androgenized with Synovex-H ear implants as indicated. Such androgenized heifers were beneficial in detecting cows in estrus. The androgenized heifers appeared to be very selective about their mounting activity in determining cows in estrus. During the course of this study, heifers had to be reimplanted after a period of approximately 90 days.

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Footnotes: *1. Production of Cattle Immunotolerant to Bovine Viral Diarrhea Virus. McClurkin et al. (National Animal Disease Center, Ames, Iowa.) Can. J. Comp. Med. 1984; 48: 156-161. *2. Mucosal Disease of Cattle: A Late Sequel to Fetal Infection. Roeder and Drew (Veterinary Investigation Centre, England). Veterinary Record, 1984; 114: 309-313. *3. Experimental Production of Fatal Mucosal Disease in Cattle. Brownlie, Clark and Howard. Veterinary Record, 1984; 114: 535-536. *4. "Safe vaccine for pregnant cows," Agricultural Research, September, 1976, Pg. 14. *5. "Evaluation of Acetylethyleneimine-Killed Bovine Viral Diarrhea—Mucosal Disease Virus (BVD) Vaccine for Prevention Of BVD Infection Of The Fetus." Proceedings of 79th Annual Meeting of the United States Animal Health Association, McClurkin et. al. (National Animal Disease Center, Ames, Iowa.) Nov. 2-7, 1975; 114-123.

TABLE 2. Effect of Presence of Androgenized Heifer on Attempts To Mount and Detection of Pregnant Cows In Estrus.

Item	Location of Heifer In	Out
Number and Percent Attempts to Mount by:		
Andy/Cow	146 (7.3%)	——
Cow/Andy	447 (22.4%)	——
Cow/Cow	1399 (70.3%)	1975 (100%)
TOTAL	1992	1975
Number and Percent of Pregnant Cows Detected by:		
Andy	18 (29.0%)	——
Cow	55 (88.7%)	70 (100%)
Both	—11 (—17.7%)	——
TOTAL	62	70

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