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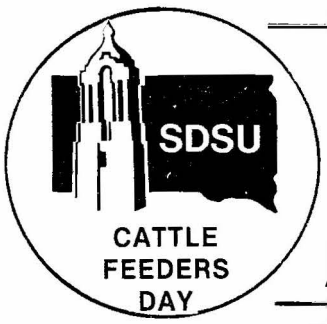

HEI-GRO INTRAVAGINAL DEVICE AND SYNOVEX-H IMPLANTS FOR FEEDLOT HEIFERS

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Recently considerable publicity has been given to an intravaginal device (Hei-Gro) as a means of improving weight gain and feed efficiency of feedlot heifers. A need for research with the Hei-Gro device for feedlot heifers was indicated.

Another concern in feeding of heifers is pen position in relation to steers. It has been advocated that heifers should be separated from steers by as much as 40 feet. Research is not adequate to support this recommendation. However, it could be a matter of some practical concern in feeding operations involving both steers and heifers.

The research reported herein was conducted to evaluate the Hei-Gro device when used alone and in combination with Synovex-H implants. In addition, the experiment was designed to study effects of pen position in relation to steers on feedlot performance of heifers.

Procedures

Ninety-six Hereford heifers were used in the experiment which was divided into a growing phase and a finishing phase. The cattle were allotted into 16 pens of six each after stratifying on basis of weight. Experimental treatments were control, Synovex-H, Hei-Gro intravaginal device and Synovex-H plus Hei-Gro.

One row of eight pens was adjacent to steers separated by a 16-foot feeding alley. The other row of eight pens was isolated from steers by the 16-foot feeding alley, the row of heifers (32 feet) and a 16-foot work alley. The other side of this row of heifers was an open area. Each heifer treatment group was represented twice in each row (referred to as isolated and nonisolated), so there were two pens of six heifers from each treatment group isolated from and adjacent to steers (16-foot alley separation). Heifers and steers were not fed in adjacent pens in the experiment.

Implanting with Synovex-H and inserting the Hei-Gro devices were done following allotment for the experiment. The initial ration for all pens during the growing phase on an as fed basis was reconstituted alfalfa haylage, 79.8%; rolled corn grain, 15.3%; and supplement, 4.8%. The supplement was corn-based with added minerals, vitamin A and monensin. After 63 days of the growing phase, oat haylage replaced the alfalfa haylage and was fed at the same level.

Three randomly selected heifers from each pen were rectally palpated weekly to monitor ovarian size and structure to study cyclic activity.

For the finishing phase, no changes were made in allotment or pen assignments. Those implanted with Synovex-H initially were reimplanted at the beginning of the finishing phase.

The ration during the finishing phase was rolled corn grain, 74.2%, oat haylage, 18.9%, and supplement, 6.9%, on an as fed basis. The supplement was soybean meal-based (about 32% protein) with added minerals, vitamin A and monensin.

Observations were made for signs of estrus during the first 21 days of the finishing phase. Pens were checked frequently for loss of the Hei-Gro devices. When found or detected missing during palpation, a new device was inserted.

Upon termination of the experiment, the heifers were slaughtered at a local packing plant. Carcass data were obtained and reproductive tracts collected for examination.

Results

Size of heifers and type of ration could have an effect on response to the treatments involved in the experiment. Therefore, results are presented separately for the growing phase and the finishing phase.

Growing Phase

Results of the 112-day growing phase are shown in table 1. The average initial weight of 516 lb. exceeded the minimum weight (450 lb.) recommended for devicing of heifers.

Table 1. Feedlot Performance of Growing Beef Heifers
(May 11 to August 31, 1977--112 days)

Item	Control	Synovex-H	Hei-Gro	Hei-Gro + Synovex-H
No. animals	24	24	24	24
Init. shrunk wt., lb.	514	516	517	516
Final shrunk wt., lb.	730	749	706	746
Avg daily gain, lb.	1.93	2.07	1.69	2.05
Avg daily dry matter intake, lb.	15.0	15.6	14.0	15.2
Feed/lb. gain, lb.	7.77	7.54	8.28	7.41

Heifers implanted with Synovex-H gained at a faster rate (7.25%) than did the control group. They consumed slightly more feed and had a small advantage (3.03%) in feed efficiency.

Heifers which received the Hei-Gro device gained at a lower rate (12.44%), consumed less feed and had higher (6.82%) feed requirements in comparison to the control group.

Heifers which received both Synovex-H implants and the Hei-Gro device performed in a similar manner as to weight gain, feed consumption and feed efficiency as those which received only the Synovex-H implants.

Average daily gain and feed efficiency as affected by pen position in relation to steers are shown in table 2.

Table 2. Effect of Growth Stimulants and Location on Performance of Growing Beef Heifers (May 11 to August 31, 1977--112 days)

	Nonisolation[a]		Isolation[a]	
Treatment	Average daily gain, lb.	Feed/gain[b]	Average daily gain, lb.	Feed/gain
Control	2.03	9.18	1.83	9.04
Synovex-H	2.07	8.83	2.07	8.76
Hei-Gro	1.79	9.38	1.61	10.00
Hei-Gro + Synovex-H	1.96	8.97	2.14	8.42
Average	1.96	9.09	1.91	9.06

[a] Averages of 12 animals per treatment.
[b] Dry matter basis.

Average performance for the eight pens adjacent to steers and the eight pens isolated from steers was about the same. There were some small differences between isolated and nonisolated heifers within treatment groups. These data represent only two pens of six heifers each and, therefore, provide limited data for evaluating position effects.

No differences in cyclic activity were detected among any of the treatments as determined by rectal palpation during this phase of the experiment.

Finishing Phase

Following the growing phase, the heifers were changed to the high-grain finishing ration over a period of about 10 days. Feedlot performance during this 100-day phase is shown in table 3.

Table 3. Effect of Growth Stimulants on Finishing Beef Heifers (August 31 to December 9, 1977--100 days)

Item	Control	Synovex-H	Hei-Gro	Hei-Gro + Synovex-H
No. animals	24	24	24	24
Init. shrunk wt., lb.	730	748	706	746
Final shrunk wt., lb.	902	939	868	937
Avg daily gain, lb.	1.72	1.91	1.61	1.89
Avg daily dry matter intake, lb.	17.2	18.7	16.1	18.5
Feed/lb. gain, lb.	10.0	9.79	10.0	9.79
Carcass wt., lb.	541	563	522	568
Dressing percent	59.9	59.9	60.1	60.6
Quality grade[a]	19.2	19.2	19.7	18.9
Fat thickness, inches	.55	.58	.53	.48
Rib eye area, sq. in.	9.9	11.2	10.6	11.3

[a] Quality grades are coded: 18 = high good; 19 = low choice; 20 = average choice.

Rate of gain was similar during this phase as during the growing phase even though the ration was higher in energy. Heifers implanted with Synovex-H gained at a faster rate than controls. The advantage was some greater (11.05%) than during the growing phase. Synovex-implanted heifers again consumed more feed but varied only slightly (2.42%) from controls in feed efficiency.

Heifers which received the Hei-Gro device gained at a lower rate in comparison to controls. The reduction was less (6.40%) than during the growing phase. They consumed less feed but had about the same feed requirements as the controls.

Hei-Gro with Synovex-H resulted in similar performance as for Synovex-H.

Carcass data (table 3) show some differences between treatment groups. Some of these would be reflections of differences in rate of gain and carcass weight. None of these differences were statistically significant.

Weight gain and feed efficiency as affected by position in relation to steers are shown in table 4. The eight pens of heifers isolated from steers had an average daily gain greater (8.82%) than for the eight pens fed adjacent to steers. Examination of the data by treatment groups would indicate that any advantage from isolation occurred only with Synovex-H. However, small numbers of animals were involved (two pens of six) in these comparisons and the interaction of position and treatment was not statistically significant. One might also question the apparent lack of response to Synovex-H in comparison to controls in the nonisolated group. Further comparisons would appear desirable.

Examination of reproductive tracts revealed substantial differences among treatments. Heifers with the Hei-Gro device had significantly more vaginal scarring and infection in comparison to those without the device. Infection was more severe when the device was used with Synovex-H implants.

Table 4. Effect of Growth Stimulants and Location on Performance of Finishing Beef Heifers (August 31 to December 9, 1977--100 days)

	Nonisolation[a]		Isolation[a]	
Treatment	Average daily gain, lb.	Feed/gain[b]	Average daily gain, lb.	Feed/gain
Control	1.69	10.56	1.74	9.50
Synovex-H	1.67	11.20	2.13	9.34
Hei-Gro	1.72	9.67	1.50	9.59
Hei-Gro + Synovex-H	1.74	10.32	2.02	9.26
Average	1.70	10.44	1.85	9.42

[a] Averages of 12 animals per treatment.
[b] Dry matter basis.

Summary and Comments

Results of the experiment show that feedlot performance of heifers was improved by Synovex-H implants during both growing and finishing phases. The Hei-Gro device appeared to offer no improvement over controls. Neither did Hei-Gro plus Synovex-H offer any improvement over Synovex-H.

Isolation of heifers from steers appeared to have no effect during the growing phase of the experiment. Results were more variable during the finishing phase. Any advantage from isolating heifers from steers appeared to be for heifers implanted with Synovex-H. However, numbers were small and the Synovex treatment resulted in essentially no response in the non-isolated group in the experiment. In view of this, results appear inconclusive regarding effects of isolating heifers from steers. Also, comparisons were not made with heifers and steers in adjacent pens. Further comparisons would be desirable.

Treatments appeared to have no effect on cyclic activity of the heifers. The Hei-Gro device resulted in considerable scarring and infection of the vagina.

Loss rate of the device was high. During the course of the experiment, 43.8% of the heifers lost one or more devices which were replaced when discovered. Six of the 48 deviced heifers were without the Hei-Gro device at slaughter.