

# CONTROLLED MATING IN BEEF COWS

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The development of compounds to regulate mating behavior in farm animals has created considerable interest among livestock men. The incorporation of those materials and artificial insemination into a successful management system has become the goal of some of the large ranches in North Dakota.

With this objective, a field study was initiated to test the feasibility of using synchronization and artificial insemination in a large herd. Three hundred Hereford cows in varying post-partum stages were involved. Two hundred fifty cows were grouped an oral hormone in three pounds of feed that was pelleted. The pellets were spread on the ground. The compound used was melengestrol acetate (MGA) at the rate of 1.0 mg per head per day. This compound is commercially used at a lower

dose to suppress estrus in feed-lot heifers. The 50 control cows were fed the same amount of feed daily but without the medication.

The cows were artificially inseminated at the first and second subsequent estrus after termination of the feeding period. Six different breeds of bulls were used with only one sire from each breed. Twenty-seven days after termination of MGA feeding, Hereford bulls were turned with the cows for clean-up purposes.

The degree of synchronization of estrual behavior is illustrated in Figure 1. The graph indicates synchronization was somewhat established. Failure to achieve greater synchronization of estrus was because many of the cows had recently calved and were not cycling. These results were considered satisfactory, considering degree of control of sexual activity. Also, as evidenced by other field trials, with this many potential cows in estrus it is extremely difficult to detect and separate all that might be rightfully inseminated.

The conception data with breeding at this synchronized estrus is presented in Table I. The first

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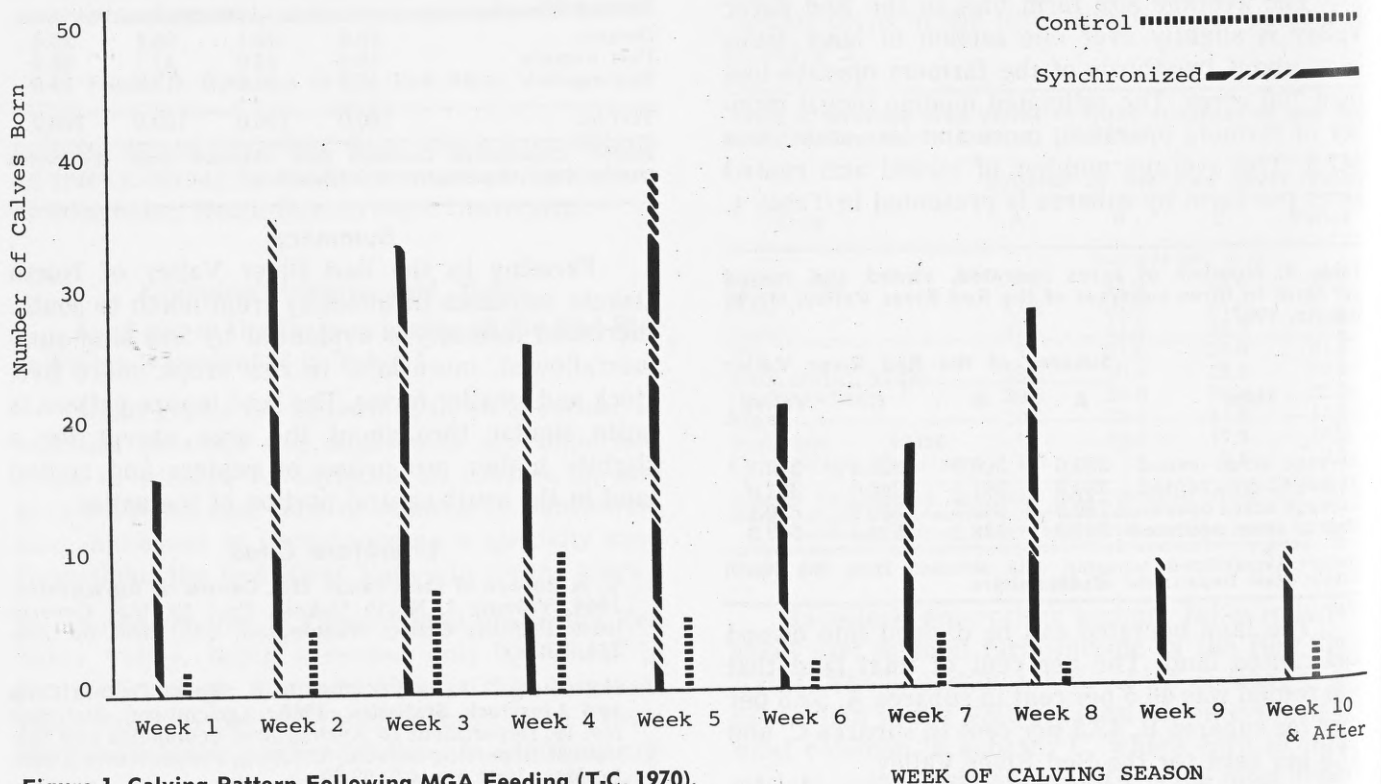


Figure 1. Calving Pattern Following MGA Feeding (T-C, 1970).

WEEK OF CALVING SEASON

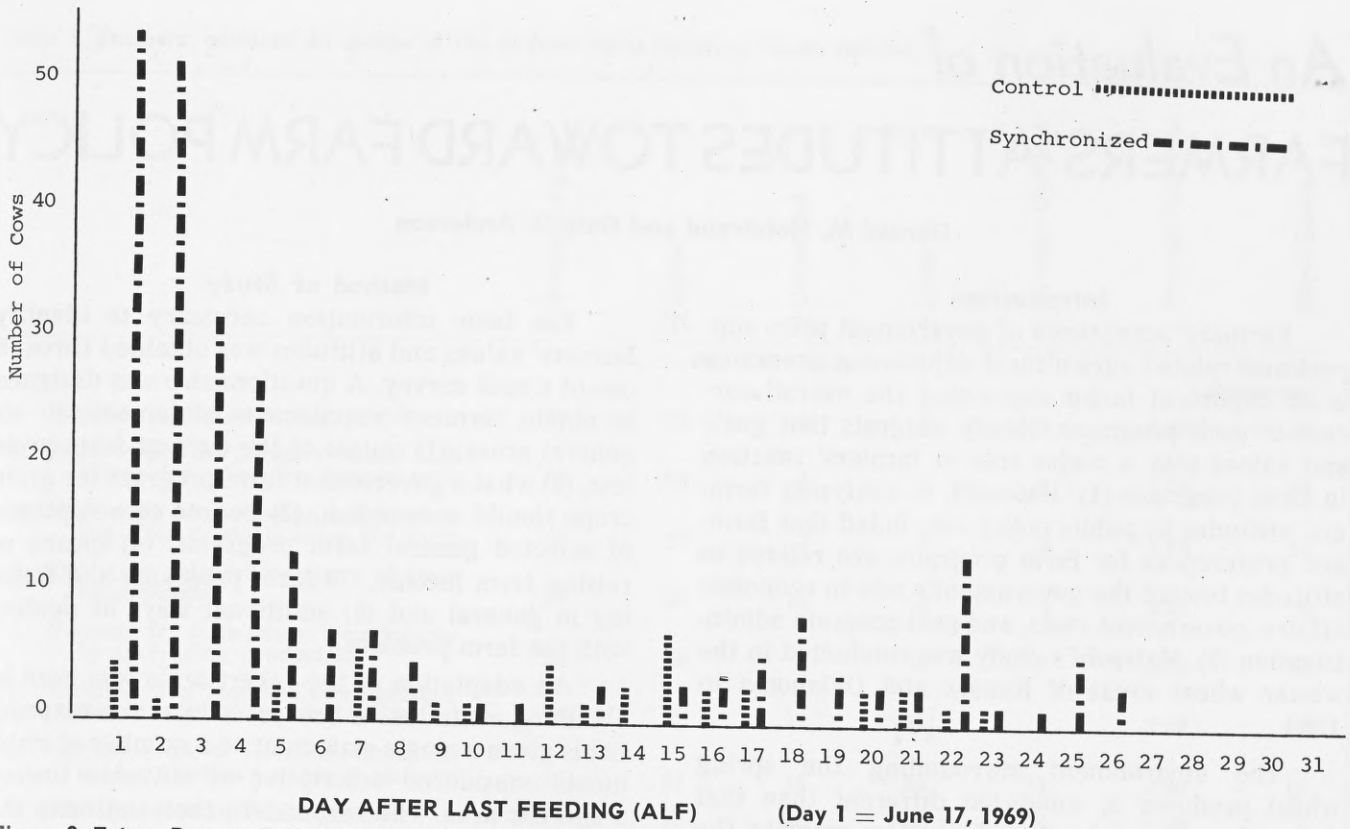


Figure 2. Estrus Pattern Following Heat Repression with MGA (T-C, 1969).

service conception rate of the synchronized cows was in the range normally found. Conception rate following two services in the treated cows was 71.4 per cent versus 85.3 per cent for the control cows. After only one service, none of the control cows had recycled before the twenty-seventh day.

Table I. Time of Conception After MGA Feeding

	1st Service Conception		2nd Service Conception		Total A.I. Conception		Nat. Ser. Conception	
	No.	%	No.	%	No.	%	No.	%
Total	141	53.2	53	20.0	194	73.2	71	26.8
Synchronized	112	48.5*	53	22.9	165	71.4	66	28.6
Non-synchronized	29	85.3	0	0.0	29	85.3	5	14.7

\* P < .05

The calving pattern is illustrated in Figure 2. Distribution of calving dates of the treated cows was not significantly different from the control cows. Calving was not bunched, as had been desired in this particular experiment. Although first estrus after feeding was synchronized, failure of large numbers to conceive resulted in a more or less random distribution of calving date.

A major goal for successful synchronization is to reduce the number of man-days needed to detect and inseminate beef cows under range conditions. Results (Figure 2) suggest that even though synchronization permitted insemination of 71.6 per cent of the cows within a 7-day period, subsequent calvings by synchronized cows were not grouped so closely as to make care of large numbers of cows calving at the same time a practical problem.

These results indicate some of the shortcomings of incorporating both estrus control and artificial insemination into large scale cow-calf operation. However, if a rancher would be satisfied with a 75 per cent conception rate to artificial insemination in 25 days after synchronization, it would permit the use of more high power bulls; then one could clean up with less expensive bulls.

### Summary

Three hundred cows were fed three pounds of feed per day with or without an orally effective hormone to synchronize estrus. Estrus was effectively synchronized in these treated cows. Conception at first estrus was slightly reduced but improved at the second post-treatment estrus. Date of calving was not significantly altered by artificial insemination of synchronized cows for 25 days post-treatment.