

A Summary of 20 Years of Performance Testing through the North Dakota Beef Cattle Improvement Association

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The Animal Science Department has summarized the weaning weight data of calves owned by members of the North Dakota Beef Cattle Improvement Association since 1962. The summaries for each member provide information useful for making genetic selection and management decisions. Over 170,000 calf weaning weights have been processed to date. The number of different herds represented is 425.

Each year about 100 producers send in information on about 10,000 calves. The number of calves processed in 1984 from 96 herds was 11,675. The number of calves per year since 1969 is given in table 1.

Table 1. Number of Calf Weaning Weights Processed per Year from 1969-1984.

Year	Number of Calves
1969	5,958
1970	6,691
1971	9,375
1972	11,260
1973	14,751
1974	16,127
1975	9,793
1976	10,182
1977	10,089
1978	9,002
1979	9,072
1980	8,823
1981	10,373
1982	9,647
1983	10,340
1984	11,675

Producers from all areas of North Dakota participate in the program. Thirty-six of the 52 counties are represented in the 1981-1983 data. Table 2 shows that

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Table 2. Number of Consecutive Years of Participation for Herds Processed in 1983.

Number of years	Number of herds or average number of herds	Percentage of all herds
1	8	9.1%
2	9	10.2%
3	6	6.8%
4	5	5.7%
5	4	
6	3	
7	4	
8-9	3.5	68.2%
10-11	6.5	
12-13	7.5	
14-15	7	

producers who try the service tend to stay in the program. Approximately 70 percent of the herds processed in 1983 had been on the program five or more years.

The average weaning weight of the calves has increased 40 pounds in the last 15 years. Figure 1 shows the variation in adjusted weaning weight averages for these years and the plot of the average increase over these years of 2.6 pounds per year. The 1984 average weaning weight unadjusted for age of dam and sex of calf was 485 pounds. The average increase in herd unadjusted weaning weight from the first to the second year of participation is 12.3 pounds for the 104 herds that started in the last 15 years.

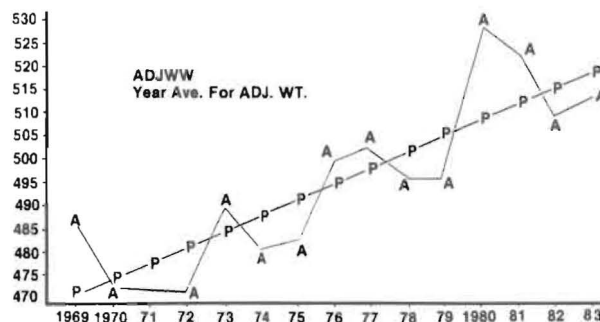


Figure 1

Figure 2 show 1983 adjusted weaning weight averages of herds that had been on test 1, 2, 3, . . . , 15 years. The benefit of being on test in comparison to other herds is about 2 pounds per year on test. That is the rate at which the straight line is sloping upward. Even more convincing evidence that participation increases the average weaning weight of the herd is presented in figures 3 and 4. Figures 3 and 4 show that the average adjusted weaning weight and average unadjusted weaning weight have gone up at the rate of 6 and 7.5 pounds per year, respectively, for straight breed herds that have been on the program 10 or more consecutive years. It is probably a combination of cow culling and selection and careful purchase of herd sires which subsequently get their performance thoroughly documented the first year of use that is responsible for the genetic portion of this substantial increase in weaning weight per year.

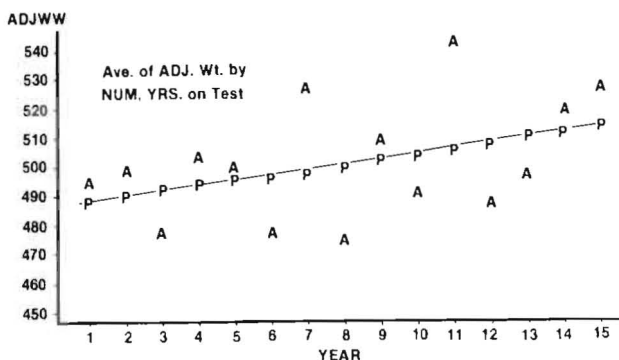


Figure 2

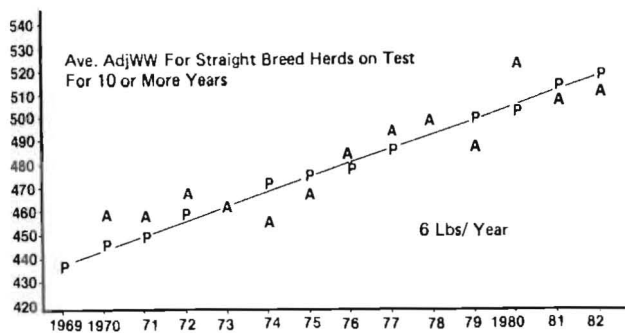


Figure 3

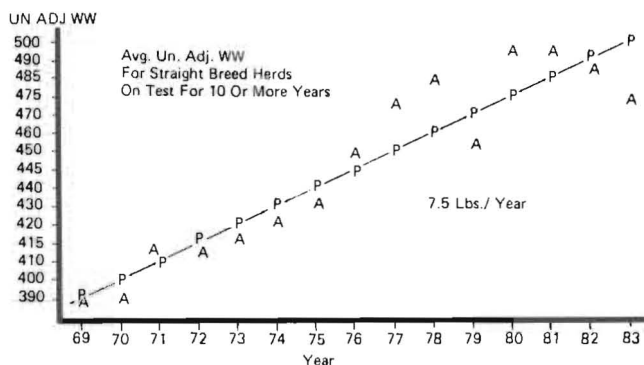


Figure 4

Table 3 roughs out the economics of a 6-pound-per-year-calf increase in weaning weight for a herd that sells 100 calves per year at \$.60 per pound. The additional income accumulated over 20 years would be \$75,600. This amount is approximately equal to 1.5 times the purchase price of 100 cows at \$500 per cow. The current charge for each calf processed is \$.20. At this rate the total investment in the computer cost of obtaining the information would be \$400 for the entire 20 years.

Table 4 summarizes the breed of sire and breed of dam of calves processed in 1979 through 1983.

Dr. Kris Ringwall, NDSU Extension Animal Scientist and Experiment Station Assistant Professor stationed at Hettinger, is now the Secretary of the North Dakota Beef Cattle Improvement Association. Starting this fall the data processing will be handled by him at Hettinger with a computer that can communicate with the main frame computer on the NDSU campus. This means that the same computer programs that have produced the summaries in the past will continue to produce the summaries, with their usual periodical enhancements, for at least the immediate future.

Table 3. Accumulated Extra Pounds Available For Sale and Income (at \$.60 per pound) for a 100 Calf Herd for Which the Average Weaning Weight is Increasing at a Rate of 6 Pounds Per Year.

Years	Pounds	Income	Computer Costs at \$.20 per calf
10	33,000	\$19,800	\$200
15	72,000	\$43,200	\$300
20	126,000	\$75,600	\$400

Table 4. Breed of Sire and Breed of Dam of Calves Processed in 1979-1983.

Breed	Breed of sire percentage	Breed of dam percentage
Angus	24	17
Horned Hereford	19	28
Simmental	17	5
Polled Hereford	14	12
Charolais	11	8
Red Angus	4	1
Tarantalse	3	1
Crossbreds of two or more breeds	3	23
Salers	1	1
Shorthorn	1	1
Gelbvieh	1	1
Other straight breeds (all less than 1%)	2	1
Total number of records	43,567	42,434