HOW VALUABLE IS A SUPERIOR BREEDING PROGRAM?

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INTRODUCTION

The development of a superior breeding program, considering the cost and effort required, can be a thankless task when financial rewards are evaluated. Generally, a genetically superior market animal is worth little more in the market place than lower quality animals of similar weight. Confronted with this lack of economic appreciation for his efforts, it may become practical for the breeder of high quality beef cattle to evaluate marketing alternatives.

WHAT IS A SUPERIOR BREEDING PROGRAM?

For the purpose of clarification, the term "superior breeding program" must be defined. A superior breeding program is one which results in market cattle which are of high genetic merit. This high level of genetic merit relates directly to the ability of the animal to efficiently gain weight and ultimately produce a carcass of desirable yeild and quality. The key term here is efficiency. A genetically superior animal is one which possesses the potential to produce more product (live weight or carcass weight) per unit of input (capital).

HOW MUCH ARE SUPERIOR ANIMALS WORTH?

In an effort to dramatize the value of a truly superior breeding program, consider the following theoretical example. For the purpose of simplicity, let's evaluate only two steers, one may be thought of as possessing average genetic potential, the other possessing much higher genetic capabilities. The two steers will be assumed to be of similar age and to have been reared under similar management programs. All visible differences will be assumed to be genetic. The steers will be evaluated at four stages of the production chain. These are weaning, following 150 days on wheat pasture, following 150 days in the feedlot and on a carcass basis. The production capabilities of the two steers in each segment are described in Table 1. The steer with higher genetic potential possesses a heavier weaning weight, a higher rate of gain following weaning and a more desirable carcass. Actual prices from 1979 and 1980 were applied to the appropriate phases of the production chain. Both live (Table 1.) and carcass

Table 1. Description of production potential of two theoretical beef steers.

Steer	Weaning weight (lbs.)	Pasture A.D.G. (lbs/day)	Feedlot A.D.G. (lbs/day)	Quality grade	Yield grade
Average	400	1.5	2.5	G^{o}	3
Superior	500	2.0	3.0	Ch-	2

(Table 3.) prices were estimated based on actual market reports for the time period.

It becomes evident that the economic advantage of the genetically superior animal is elevated as he passes from one segment to the next (Table 4.). The difference of $68.00 at weaning to $108.25, $142.50 and $211.35 for "off pasture" value, ending feedlot value and carcass value respectively. This displays the relative economic advantage of the superior steer. This is not to imply that retaining ownership beyond weaning will always increase the profitability of the superior herd. This may or may not be true. The point that should be made is that the superior animal, because of greater efficiency, will always be of greater value, relative to the steer of average genetic potential, as time progresses.

Table 2. Weight and value of two theoretical steers at various stages

Steer	Weaning weight (lbs.)	Value $/cwt.	Off Pasture weight (lbs.)	Value $/cwt.	Off Feedlot weight (lbs.)	Value $/cwt.
Average	400	78.00	625	71.00	1,000	67.00
Superior	500	76.00	800	69.00	1,250	65.00

Table 3. Carcass discripition and value.

Steer	Carcass weight (lbs.)	Quality grade	Yield grade	Value $/cwt.
Average	630	G^{o}	3	103.00
Superior	775	Ch-	2	111.00

Table 4. Comparison of gross values at various market points.

Steer	Weaning value($)	Off pasture value($)	Off feedlot value($)	Carcass value($)
Average	312.00	443.75	670.00	648.90
Superior	380.00	552.00	812.50	860.25
Difference	68.00	108.25	142.50	211.35

DISCUSSION

The reasoning behind this example was to provide a rational for evaluating marketing alternatives for beef cattle of truly superior genetic merit. Under normal conditions, if the breeder were to sell his calves at weaning, the only monetary advantage he would realize would be due to heavier weaning weights. Some of this effect would be nullified by a lower price per pound because of their advanced weight. If his calves are truly superior, they would possess the potential to produce more efficiently at later stages (on wheat pasture or in the feedlot). We cannot assume, realistically, that the daily cost of pasturing or feeding these two steers is the same. But, as the term genetically superior was defined, these animals will always return more product per unit of investment. Though those differences would most likely be of less magnitude than the example herein, they would nonetheless be real.

It was assumed in the context of this paper that genetic potential was easily recognized. Realistically, genetic potential is generally masked by management. The breeder must first prove his calves are actually superior before he can

demand more from the market. In a market where "mismanaged" cattle are in high demand, merchandising genetically superior cattle may be difficlut. The breeder must show his calves are more profitable than these "mismanged" cattle. If they are truly genetically superior, they will be more profitable.