

## How Much Value is there in a Producer Branded Bred Heifer Program?

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## **How Much Value is there in a Producer Branded Bred Heifer Program?**

Agricultural producers are pursuing many methods by which to add value. Typically, some type of change in commodity form is used to add value. However, there exist methods by which added value occurs through intensive management practices, particularly in seedstock production. We investigated the brand premium to a producer-owned quality-based bred heifer program. Results indicated that producers garner in excess of a \$100/head premium, while potentially reducing future search/advertising costs through building brand loyalty.

## **How Much Value is there in a Producer Branded Bred Heifer Program?**

The selection of female replacements has one of the more significant long-term effects on a beef herd's profitability in addition to its production efficiency. Producers need to evaluate the long-term and short-term consequences of their heifer selection and how those choices can be affected by market price and the productiveness of long-term reproduction. Decisions made solely on short-term consequences of selecting replacement heifers often fail to recognize the importance of many different managerial strategies such as: replacement rate, reproductive soundness, death and morbidity rates, conception rate, incidence of disease, calving interval effects on weaning weight and prices, the effect of birth weight on dystocia, and comparative reproductive capacity between heifers and cows.

In response to the aforementioned concerns with heifer replacement, in 1997 University of Missouri Animal Scientists and Veterinarians initiated the Show-Me-Select Heifer Program<sup>®</sup> in two regions of Missouri. Today the program is "the first comprehensive, statewide, on farm beef heifer development marketing program in the U.S" (Patterson et. al 2003). The program has extended to every part of the state during the given six-year time frame. The Show-Me-Select Program<sup>®</sup> has had entered 45,432 heifers during the time frame.

Producers who wish to participate in the program have guidelines that have to be met for a participating heifer. Heifers that are candidates for the program have to be owned a minimum of sixty days before they are bred. There are also vaccination guidelines for the heifer during calfhood, weaning, prebreeding, and when the heifer receives her pregnancy check. Furthermore, the heifers must have all of the horns and scurs removed, be treated for internal and external parasites within 30 days of sale, and have been serviced by bulls of known breed and ID. They must weigh a minimum of 800 pounds, receive a minimum body condition score between 5 and

7, and be free of specified blemishes. The program heifers will have a reproductive evaluation exam before the sale in addition to being inspected by a certified screening committee for quality attributes. It is recommended that a brucellosis test is administered and that the animal is free from any implants.

During the fall and winter of 2002 and 2003 economic data was collected for certain farm types taking part in the program. These farm types varied in size, scope, and objectivity of involvement in the program, i.e., retain heifers versus the sale of heifers through sanctioned sales. The objective of this study is to assess the revenue and cost centers of a branded bred heifer development program where bred heifers are sold through sanctioned bred heifer sales.

This information provides the base for assessing the costs of producing the animal and the value of the heifer. We focus on heifers marketed through sanctioned sales in order to better define the revenue center of our assessment. Economic theory suggests that in the long-run  $MC=MR=P$ , so that profits trend toward zero in the long-run. However, product differentiation – in our case a quality developed bred heifer – can lead to deviations between costs and price in the form of brand premiums. This is not unlike the case of Pepsi or Coke where the trademark alone has considerable value. We will use economic cost data and sales value to assess the trademark value (brand premiums) of a producer-owned quality-based bred heifer program by assessing the difference between value and cost.

Brand premiums can convey quality, recognition, or marketing, and brand premiums can suggest brand loyalty, which in turn might reduce future search and advertising costs. Our approach to assessing the value of a producer-owned brand is quite simple. We utilize production budgets to accomplish our goal.

Secondly, brand loyalty is assessed. Brand loyalty arises from repeat business due to satisfaction during the previous consumption/use experience. To accomplish this we utilize two sources of information. We conducted a survey of registered buyers attending sanctioned program sales. Portions of this survey identify repeat customers and their willingness to pay for bred heifers, i.e., identify their satisfaction level. Also, a buyer database is used to assess the number of repeat buyers attending sales and purchasing additional heifers. This information will be used to assess the cost savings from reduced search and advertising costs.

Given recent interest in value added agriculture, many within the agriculture sector have made attempts to add value in various ways. Within the animal sector of agriculture there appears to be opportunities to add value through enhanced management decision-making. We believe we have identified the “why” of how value can be generated with a quality-based bred heifer program, and we believe our findings are applicable to others within the cattle industry specifically.

### **History and Requirements of the Show-Me-Select Heifer Program**

Missouri holds the number two ranking in the United States in regard to the number of beef cows with 1.99 million head. There are approximately 60,000 beef cattle farms throughout the state that generate nearly \$1 billion in annual revenue for beef cattle and calves (“Missouri Beef Facts” 2001). Missouri’s largest source of agriculture revenue, the forage-based beef cattle industry, could become a bigger player in the state’s total agriculture revenue and on-farm income with some industry modifications. Currently, many farmers have not integrated an ideal management system into their business indicating that adequate efforts have not been made to foster producer awareness (Patterson and Randle).

As a result, the Department of Animal Science and the College of Veterinary Medicine in coordination with the Department of Agriculture Economics decided to develop the Show Me Select Heifer Program. The program encourages beef producers to use existing technology to improve production efficiency (including replacement rate, reproductive soundness, death and morbidity rates, conception rate, and calving interval) and markets the program heifers to achieve maximum returns (Patterson and Randle). Previous studies have proven that buyers are willing to pay premiums for heifers with the given quality characteristics of Show-Me-Select heifers (Cox, 2003). Moreover, an assessment of the revenue and cost structures of branded heifer development program proves its value to producers.

In 1997, the initial efforts of the Show-Me-Select Heifer Program started in primarily two regions of Missouri, the northeast and southwest, and included 33 different farms. Now the program is “the first comprehensive, statewide, on farm beef heifer development marketing program in the U.S” (Patterson et. al 2003). As one can see from table 1, the program has extended to every part of the state during the given six-year time frame. The Show-Me-Select Program has sold 45,432 heifers during the period with a range of 1,873 sales in 1997 to 10,235 sales in 1999. Participation in the program has included 451 farms, 158 veterinarians, 17 regional extension livestock specialists, and 10 regional livestock coordinators.

**Table 1. Summary Statistics of Sales to Dates for Show-Me-Select Replacement Heifer Program**

<b>Region</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>Spring 1999</b>	<b>2000</b>	<b>Spring 2000</b>	<b>2001</b>	<b>Spring 2001</b>	<b>2002</b>	<b>Spring 2002</b>	<b>Total Head</b>
Northeast	1193	1430	2191	0	1895	0	2097	152	2223	226	<b>11407</b>
North Central	0	0	367	0	730	0	1069	10	1352	70	<b>3598</b>
Southeast	0	638	1108	1436	821	1353	885	333	835	6	<b>7415</b>
Southwest	680	934	848	0	600	0	642	239	772	438	<b>5153</b>
West Central	0	0	942	0	606	0	577	130	582	154	<b>2991</b>
Central	0	378	594	0	448	0	617	0	651	0	<b>2688</b>
Central	0	0	339	0	493	0	220	0	252	6	<b>1310</b>
South Central	0	322	319	0	57	0	0	0	0	0	<b>698</b>
South Central	0	0	472	0	667	0	901	279	775	503	<b>3597</b>
Northwest	0	724	482	0	510	0	359	0	363	26	<b>2464</b>
Other	0	763	1137	0	1211	0	0	842	151	7	<b>4111</b>
<b>Total</b>	<b>1873</b>	<b>5189</b>	<b>8799</b>	<b>1436</b>	<b>8038</b>	<b>1353</b>	<b>7367</b>	<b>1985</b>	<b>7956</b>	<b>1436</b>	<b>45432</b>

\* Taken from Patterson et. al, 2003

Moreover, producers have guidelines that have to be met before a heifer can be sold in a Show-Me-Select sanctioned sale. First, a prospective heifer has to be owned a minimum of sixty days before they are bred constituting the only guideline affecting the eligibility of the animal. Vaccination guidelines established by program administrators must be followed during calfhood, weaning, prebreeding, and when the heifer receives her pregnancy check. The animals entering the program must have all of the horns and scurs removed, be treated for internal and external parasites within 30 days of sale, and have been serviced by bulls of known breed and ID.

Furthermore, the heifers must weigh a minimum of 800 pounds, receive a minimum body condition score between 5 and 7, and be free of specified blemishes. Also, have a reproductive evaluation exam will be given before the sale in addition to an inspection for quality attributes conducted by a certified screening committee. It is recommended that a brucellosis test is administered and that the animal is free from any implants. Qualified heifers are approved by a

certified team of inspectors will receive a “Show-Me-Select” ear tag and are qualified to be sold at a Show-Me Select heifer sale (Patterson and Randle).

### **Survey Instrument**

Economic data was taken from various beef farm types during the fall and winter of 2002 and 2003. The sixteen operations differed in size, scope, and the objective of their program (ie retain Show-Me-Select heifers versus selling the heifer through a sanctioned sale). Half of the researched operations produced a cattle/crop or cattle/hay combination while the other fifty percent only raised cattle for their production income. Eighty percent of the respondents participated in the Show-Me Select Program to improve animal performance while 73% were using the service to obtain a brand premium for their heifers.

### **Results from the Economic Data**

The two different types of operations were analyzed: farmers that raised the heifers to sell them for a brand premium and farmers who retained the heifers for their own herd. In regard to the research, budgets were developed for each operation to help organize the information for comparison. Table 2 displays a modified summary budget of the surveyed beef farms comparing the cost and revenue analysis of an operation of non-program heifers to an operation containing heifers raised according to Show-Me-Select standards (Note: The table represents 1 heifer calf that will either be sold as a springer heifer (a cow that is pregnant with a calf), a cull heifer, or will perish before she is sold).

As one can see, the revenue streams for the Show-Me-Select heifer are approximately \$205 greater than a comparable animal that did not operate under the Show-Me-Select standards.



One reason is that a non program heifer has approximately twice the death rate than program heifers (probably due to an intense vaccinating system and an increase and an increase in labor). Also, there is a higher cull rate for non-program heifers (detracting from the springer value for the traditionally raised heifer) and Show-Me-Select heifers are sold at a premium over regular livestock prices at sanctioned sales (attracting a brand premium). The cull value of a Show-Me-Select heifer equals its counterpart despite a lower cull rate because a culled heifer from a Show-Me-Select sale may still be sold as a non-program springer heifer on the open market thus attracting a greater amount per animal unit sold.

Despite greater revenues for the Show-Me-Select products, there are also more expenses associated with raising the animal. Corn and mineral costs are likely increased to ensure a body condition score that will meet the minimum standards of a sanctioned sale and to ensure a healthy animal (Parcell and Daniel). Since Show-Me-Select heifers are required to have specific vaccinations and checkups at specific growth stages, veterinary costs are increased to meet the criteria. Breeding costs are higher since the Show-Me-Select heifer is artificially inseminated instead of naturally bred and information has to be collected and recorded (ie. heifer ID, breeding date & time, technician, and sire code) (Patterson et. al 2003).

Furthermore, the additional utility and machinery costs stem from an increase in livestock handling required by the program. Continuing, facilities are utilized more with the program leading to more repairs, interest, and depreciation per heifer. Given the increased expenses with the program, one could expect a rise in the interest expenses incurred by the participants of the program. Given that that the average participant's increase in expenses in the program was approximately \$85, the overall increased value for selling a heifer in the program was \$120 (Parcell and Daniel).

**Table 2. Cost of Production Differences from Raising Show-Me-Select Heifers**

RETURNS PER HEIFER		
	<u><i>Non-Program Heifer</i></u>	<u><i>SMS Heifer (AI)</i></u>
1. Market Animals:		
a. Springer heifer	\$712.00	\$915.92
b. Cull heifer	43.50	42.64
2. Less cost of heifer calf	\$425.00	\$425.00
3. Less death loss	7.65	4.79
<b>A. GROSS RETURNS PER HEIFER</b>	<b>\$322.85</b>	<b>\$528.77</b>
COSTS PER HEIFER:		
4. Summer pasture	\$48.45	\$47.98
5. Mixed Hay	34.08	31.72
6. Corn	30.60	61.20
7. Mineral and salt	5.02	10.04
8. Labor	72.00	79.20
9. Veterinary, drugs, and supplies	16.00	20.00
10. Marketing costs	24.73	22.50
11. Breeding cost	10.50	33.00
12. Utilities & Machinery	15.00	19.00
13. Facility and equipment repairs	25.00	27.50
14. Miscellaneous	6.00	6.00
15. Depr. & Int on facilities and equipment	26.31	29.10
16. Insurance and taxes on capital investment	14.68	16.04
<b>B. SUB TOTAL</b>	<b>\$328.37</b>	<b>\$403.28</b>
17. Interest heifer calf and 1/2 operating costs	42.16	51.57
<b>C. TOTAL COSTS PER HEIFER</b>	<b>\$370.53</b>	<b>\$454.85</b>
<b>D. RETURNS OVER TOTAL COSTS (A - C)</b>	<b>-\$47.68</b>	<b>\$73.92</b>

Although it is easy to recognize profits obtained by the farmers selling their cattle to obtain premiums, it is harder to assign a value to the heifers that are retained in their operations. However, the producers that took part in the operation noticed added value among the retained heifers. The most consistent comments among these producers were less calving problems, higher calving rates, and higher weaning weights. Other common responses included improved

breed back among the heifers, an overall increase in herd quality, and an overall increase viability of the cows that were raised as Show-Me-Select heifers.

### **Implications**

We show in this analysis that there is value to a branded production program. Analyzing a quality based bred heifer program we estimated the per animal value at over \$100/head for 2003. An economic survey of costs of production between non program and program heifers was used to arrive at our conclusions. The next step in the research stream is to look at how the value added component has changed since the inception of the program. One would assume that there is a life-cycle to the brand, build the brand value, reap the reward, plateau, and then the brand value decreases as new participants enter the market place.

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