

## **A Producer Perspective on Heifer Development, Reproductive Management and Marketing**

**By Mike Kasten**

In the last few years the beef industry has finally become a consumer driven industry. This is a very positive change in my opinion from the commodity driven industry we have been from the beginning of this country. The beef industry is in a time of branded products. Each of those products has or will have specifications that must be met to carry the individual label. Genetics is and will continue to be, by far the largest component for meeting those specifications. To meet these specifications, bull selection becomes a very critical first step. The main improvement in your herd, however, will come from heifer selection and the proper development of those heifers.

Heifer development has become the main focus of our operation over the last 8 years. We now generate about 55% of our gross income from heifer sales. We have been breeding and selling heifers for over 20 years. The management practices that we used prior to the Show Me Select Heifer Development Program (SMS) could hardly be classified as “development”. In the past we took a very minimalistic approach to raising heifers. We would barely get them big enough to breed. After breeding we would grow the heifers to a reasonable size, however, they did not have the flesh on them that they needed to do what we expected of them. We obviously ran into rebreeding problems at both the two and three year old stages. This practice even led us to do a 5 year study on the economics of early weaning to solve our reproduction problems. After adopting the management practices that make up the SMS, I can now look back and see that all the problems we had were the result of incorrect heifer development. Heifer development is expensive up front, but if done incorrectly, it is even more expensive in the long run.

The SMS program has a number of important management tools to meet the requirements to qualify. Two of the cornerstone requirements, in my opinion, are the tract score and pelvic measurements taken at pre-breeding. The tract scoring is based on the 1 to 5 scale, 1 being infantile and 5 is a cycling heifer. Nine years ago, when we first started the program, over 1/3 of our heifers were in the 3 category at pre-breeding. These would be heifers in good reproductive health but not cycling. Today over 98% of our heifers are cycling at the pre-breeding examination. This is the result of getting our heifers to 65 to 70% of their mature weight and a good body condition score at the beginning of the breeding season.

Anyone who has seen my operation can attest to the fact that I don't like to spend money on anything if I don't have to. I have listed my cost for developing heifers below. These are the cost for spring born heifers. The cost to develop fall born heifers usually averages about \$50.00 a head less.

## Cost of Heifer Development Spring 2005

Value of heifer at weaning	\$674.25
Feed (grain) 2550 lbs.	\$163.20
Forage (pasture and hay)	\$66.66
Veterinary and vaccines	\$11.48
Breeding fees (semen and synchronizing)	\$32.87
Clean-up bull	\$6.27
Open heifer charge	\$18.72
Interest on heifer	\$38.81
Interest on feed	\$5.11
Labor	\$40.86
Sale expense	\$40.00
Total development cost	\$423.98
Total costs	\$1098.23
Average cost per day	\$1.08

As you can see from our list, developing heifers correctly has some significant costs. We have found out that you will either pay for it now or in the future. I stated it before but it is worth repeating. **In the long run, poorly developed heifers end up costing much more money than heifers developed properly.**

I have calculated our retention rate of heifers in our herd after we started using the SMS program. Rebreeding rates and cows that maintain a 365 day calving interval are the most important traits to have for the bottom line of our business. We have been very pleased with the results from this program.

Year born	Number breeding seasons	% maintaining 365 day intervals
1999 J	6	71%
2000 K	5	81.48%
2001 L	4	80.50%
2002 M	3	94.60%
2003 N	2	97.00%

One of the best aspects of a not losing cows from your program from reproductive failures is the flexibility this gives you to cull cows for other reasons.

I have read some articles recently about developing heifers in a low input manner. If a person chooses to do this first and foremost, be sure you are comparing apples to apples. **Keep a proper perspective.** I have listed below some things to keep in mind when considering a low input system.

1. You must keep more heifers to begin with (probably 30 to 50% more) to maintain your numbers. This will certainly lower your short term income.
2. You must be able to finish the open heifers in a feedlot or have a good market for open heavy heifers.
3. If you have limited pasture you will have to reduce your cow herd to allow enough forage for the extra animals on the operation.
4. You will experience more open cows in the first, second and third calf years so you will need a market for young open cows.
5. If you select for heifers that will breed only in a low input forage system you most likely will be reducing the mature size of your cows. This is not necessarily bad, however, if you reduce them to the point where the steer mates and low end heifers get docked on size, this will affect your pocket book.

These are just a few of the things that I experienced trying to raise heifers this way. It has become very obvious to me that the most economical way to raise heifers in the long run is to spend the money up front and develop them properly.

## **Reproductive Management**

I have had the opportunity and pleasure over the last 6 or 7 years to work with Dr. David Patterson at the University of Missouri on different synchronization protocols. The latest insemination protocols we have been using are fixed time. We have been using them on both our cows and heifers.

I have been using A.I. heavily for the last 32 years. Over those years I have tried just about every type of breeding system imaginable. We have used 2 and 3 times a day observation, MGA, Prostaglandin, Pregnant Mare serum, Syncro-mate B, limit suckling and early weaning. All of these systems worked to some degree. None, however, have worked remotely as well as the time-breeding protocols we are using today.

On the heifers we are using the 14 day CIDR, day 14 CIDR removal, day 23 GnRH, day 30 PG and breeding 72 hours after the PG. We give another GnRH at breeding.

On the cows we are using day 0 GnRH CIDR, day 7 CIDR removal plus PG and breeding 66 hours after the PG. We are giving another GnRH at breeding time.

We have been getting in the 60 to 70% range on our cows and 55 to 65% on heifers on average. Bull selection plays a very important part in the pregnancy rate. There is a wide variation in conception rates on bulls with fixed time A.I.

The time and labor saving coupled with better results, make the time breeding systems very appealing.

The number of times the animals must go through the chute seems to be a sticking point for people with the timed systems (3 times for cows and 4 times for heifers). We, however, have found that we actually spend less time with this system than with estrus observation.

The 4 trips through the chute for heifers take a total of 5 minutes and 20 seconds per heifer. If you multiply this times 3 men, our total labor per heifer is 16 minutes.

The 3 trips through the chute for cows take a total of 5 minutes per cow. If you multiply this times 3 men, our total labor per cow is 15 minutes.

For us, this is a tremendous system and a tremendous time saver. We calve mostly in the fall so we are breeding in late November and early December. The daylight hours are very short which makes it even harder for good visual observation for signs of heat. We no longer observe heat **at all**. We just breed when the calendar and clock says it's time.

The most exciting thing for me about the time breeding systems is selection for cattle that respond to the system. We have now been time breeding heifers for 3 breeding seasons for which the results are shown below.

Our 2002 born heifers (M) have now completed 3 breeding seasons and all the pregnancies have been confirmed with ultra sound.

Of the heifers that conceived on timed heat as virgin heifers, 78% of them have now conceived all 3 times to the timed heat breeding.

If we take those same heifers (that conceived on timed heat as virgin heifers) and count the number of services (3) per heifer, 90.02% of the time, these females were inseminated they have conceived A.I. In that same group of females, there are some that have only bred once A.I. and a few that have never conceived A.I. This certainly has convinced me that I can do some selection for females that respond to the protocols and have success. Selecting replacements that conceived on the first timed breeding service has a great deal of merit. The ability in the future to select heifers from females that respond and that are sired by bulls that work well in a timed system I think has tremendous potential.

## **Marketing**

### **Steers**

Marketing has to start with deciding what type of animal you want to produce and what market you want to hit with that animal. For us, I want to produce females that work on grass with minimal inputs and can produce a calf that can hit the white table cloth market. This has led us to Angus cattle. We have done a lot of selection for carcass quality over the years. This selection has paid off for us in the form of premiums on the grid market on our finished cattle. We have averaged over \$50.00 per head and had as high as \$121.00 per head premiums. Jessica Robertson did her masters thesis VALUE ADDED TO THE BEEF CATTLE CHAIN THROUGH GENETIC MANAGEMENT by taking our carcass data from 1999 to 2005. She did this under the supervisor of Dr. Joseph Parcell. In her results it showed that stacking generations for high quality grade (Prime) we were able to increase on one stack generation our likely hood of primes by 11%, on two generations stacking increased the likelihood by 19% on three generations by 23% after that point it seemed to level off. This is a very positive point that stacking genetics for quality grade has a very beneficial effect on the marketability of these animals.

### **Heifers**

The Show Me Select Heifer Program (SMS) Sales have become an excellent market opportunity for us. We also market heifers at the Sydenstricker Influence Sale and to our Alliance producers. The SMS program has helped us make bred heifers the largest source of revenue for our operation. The A.I. bred heifers have consistently sold for more money (this is documented in Roger Eakins part of these proceedings). I think, as we stack more and better proven genetics in these heifers and find a way to document those genetics, the value of our heifers will continue to increase.

As I stated above, bull selection is certainly an important part of genetic improvement, but heifer selection is where you make the long term progress toward your breeding and marketing goals. It is very difficult and expensive to turn your herd over quickly. Because of this, your genetic selections become much more important. You will have to live with your decisions for a long time. With this in mind, I think with today's timed breeding protocols and the proven genetics available to cattle producers through the use of A.I., your genetic goals can be reached much faster and with less risk than ever before.