Cattle Business in Mississippi – January 2006
"Beef Production Strategies" article

A Closer Look at the Cow Herd

Jane Parish – Extension Beef Cattle Specialist, Mississippi State University

With the extensive amounts of information available on bulls today, sire selection can be almost intimidating. Identifying the strengths and weaknesses of the cow herd is a critical first step in bull selection, whether matching artificial insemination or natural service sires to the herd. Instead of sifting through sale catalogs in search of the "perfect" bull, it is first key to sort through the cow herd to see what traits need the most improvement and what traits need to be maintained at current levels or simply fine-tuned.

Where do I start in evaluating the herd?

Begin by ask the following questions:

Where are the holes or weaknesses in the herd?
Where is the herd excelling?
What traits am I currently getting paid for?
Based on my marketing plans, what traits do I anticipate being economically important in the future?
How consistent is the herd for traits of interest?

First priority in a cow-calf operation must be given to reproductive efficiency because of its significant impact on herd profitability. Complete breeding and calving records along with pregnancy check results allow producers to determine the current reproductive status as well as lifetime reproductive performance of herd females. Look at the herd as a whole and by age group to see if any trends are revealed. If problems are apparent, then look for underlying causes. For instance, if the second-calf heifers have low rebreeding rates as a group, then look for potential causes such as less than optimum nutrition or a fertility or breeding problem with clean-up bulls. Forage test results, heat detection records, and breeding soundness examination results are additional records that can make this evaluation process more valuable. After looking at the herd in groups, evaluate individual herd females. The herd may be performing well for conception to first service or calf adjusted weaning weight, for example, but individuals within the herd may be underperforming in these areas. Identifying these individuals enables producers to make better culling, grouping, and related management decisions.

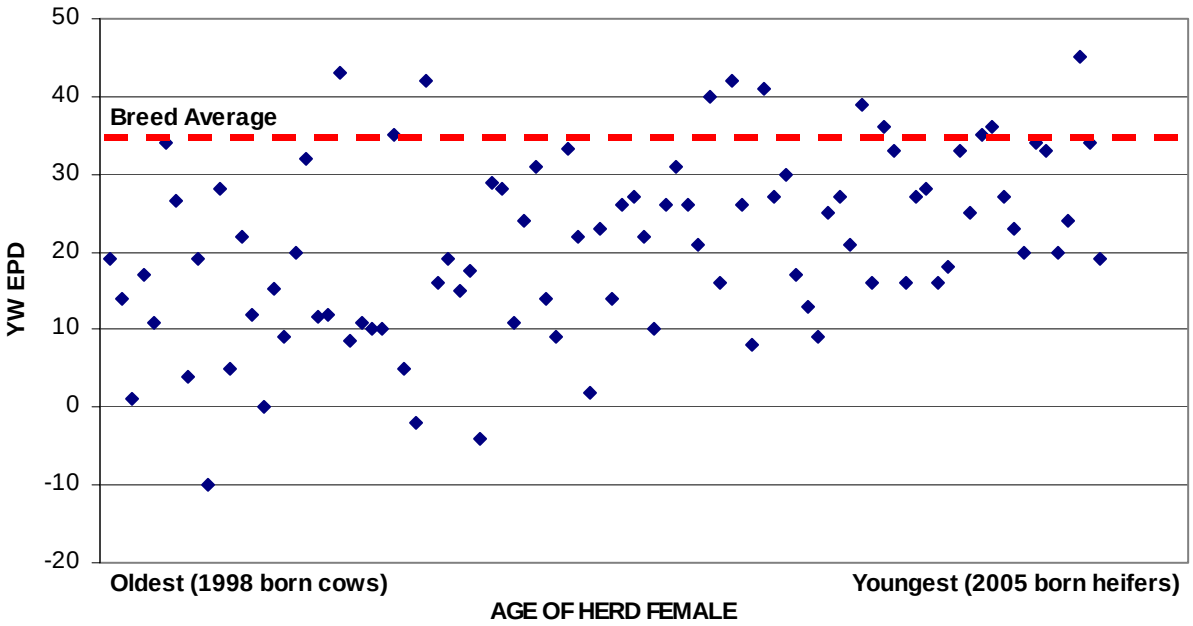
Rainfall distribution was not ideal for most Mississippi cattle operations in the latter half of 2005. This stressed forage resources on many farms, bringing about the need to more closely look at culling strategies and supplemental feed purchases to cope with limited on-farm nutritional resources. Culling decisions involve not only how many females to cull from the herd, but also which particular animals to cull. Starting with reproductive problems is the first step. Open females hurt profitability, and should be at the top of the cull list. Other reasons to cull may include temperament, health, age, and

historical calf performance. Good herd records are essential for culling. A detailed working knowledge of the herd puts cow-calf operators in a better position to match resources to herd needs. A good understanding of herd and individual performance potential also allows producers to more accurately sort out the bottom end of the herd. It provides benchmarks for determining the nutritional needs of the herd. Cow size and milking performance are two examples of herd traits that impact nutritional needs. Timely, relevant records make this task easier.

How do I go about evaluating herd genetics?

With seedstock herds, assessing Expected Progeny Differences (EPDs) for economically important traits is a logical place to start in evaluating herd genetics. This can then be coupled with other factors such as reproductive performance, temperament, muscling, frame size, structural soundness, and udder quality in the overall herd analysis. For commercial producers, identifying production strengths and weaknesses within the cow herd involves analyzing performance ratios and records. Adjusted calf weaning and yearling weights account for age of dam, calf sex, and calf age. Proper contemporary grouping and ratio calculation are a must if meaningful comparisons are to be made among herd mates. The latest edition of the *Uniform Guidelines for Beef Improvement* is posted on the Beef Improvement Federation website and provides detailed information on performance record measurement, calculation, and interpretation: *www.beefimprovement.org*.

Sire selection becomes more challenging when it is discovered that there is little consistency in the cow herd. It may be difficult to achieve breeding goals with one type of bull in herds with wide ranges in the cow herd for specific EPDs. For example, the plot below shows yearling weight (YW) EPDs for an actual herd. Notice that the older herd females are more variable in terms of YW EPD than the younger females. It also appears that there is a genetic trend within the herd for increased YW EPD in the younger generations. In fact, the average YW EPD of the 2005 born heifers is approaching breed average, while the average YW EPD of the 1998 and 1999 born cows is well below breed average. Yearling weight is an obvious weakness of the entire herd and particularly of the older herd females.



This approach can be used to evaluate many economically important traits. In the yearling weight example above, the data indicates that use of high YW EPD sires should be a priority for this herd. Consider the following scenario. After artificial insemination to a performance sire offering high yearling growth, the operation has two bulls available for use as clean-up bulls. One is in the top 25% of the breed for YW EPD, while the other one is in the top 50% of the breed for YW EPD. Otherwise, the only other major difference between the bulls is that the lower YW EPD bull is also has a lower BW EPD that is very acceptable for breeding heifers. The herd analysis for YW EPD shows that herd females can be grouped into older herd females well below breed average for YW EPD and younger herd females plus older herd females closer to breed average for YW EPD. This strategic mating plan should improve yearling growth genetics throughout the herd while improving consistency for this trait as well. In other words, the females that are lagging further behind for this economically important trait are given more of an opportunity to catch up to desired performance levels. Although herd breeding decisions are often not this simple or clear cut, the general concept presented here can be applied to most situations. A balanced selection approach for several traits of interest should be undertaken.

At the recent MSU Extension Service Beef Genetics Short Course Dr. Daryl Strohbehn with Iowa State University referred to producers who have severe independent culling levels as living in a “dream world” if they planned to routinely find natural service sires who met all of their criteria. He was referring to situations where producers insist that bulls need to be in the extreme top end of the breed for almost all traits while at the same time having a perfect appearance, gentle temperament, homozygous polled genetics, etc. The take home message is to be realistic about breeding goals, and be prepared to make trade-offs to achieve overall breeding objectives. Also keep in mind that artificial insemination does have the advantage of allowing strategic mating of

multiple sires within a small seedstock or commercial herd where strategic mating could not be accomplished through natural mating.

Be Patient

Once breeding goals are defined based on herd evaluation, farm resources, and marketing plans, stick to them. Genetic improvement takes patience. Significant progress can be made in the genetics of the calf crop when cow herd genetics are well below desired levels. However, when the breeding program brings the cow herd to a level where genetics are closer to desired levels, then the focus becomes fine-tuning certain traits without sacrificing performance in others. The results of breeding decisions made now will not be known for some time, and these decisions will affect calf crops for years down the line. It is worthwhile to invest time and effort in studying the herd. A well thought out breeding program is one of the best ways to improve cow-calf profitability, and it contributes to beef product improvement all the way to the final consumer. For more information on beef cattle production, contact your local Extension office.

BIF 2006 Countdown

Only three months left until the Beef Improvement Federation annual meeting visits Mississippi for the first time in nearly forty years. Program and registration information is available online at *www.beefimprovement.org/convention* or through your local county Extension office. This is a tremendous opportunity to learn about the latest in beef cattle breeding and genetics from leading experts from around the world. Make plans now to attend BIF 2006 on April 18-21, 2006 in Choctaw, Mississippi.