Buying Bulls

Extension specialists share important things to consider when shopping for bulls.

by ***Sara Gugelmeyer***

Buying a bull is a big decision. Especially if females are to be retained in the herd, the choices made today will affect the profitability of the operation for many years to come. But, bull buyers can easily be overwhelmed with the amount of information available. That's why we've compiled some information and resources to help make this all-important decision less daunting.

Kansas State University Extension Cow-Calf Specialist Bob Weaber says preparedness is key to making a good purchase. "As the winter and spring bull-buying season approach, seedstock purchasers should do their homework to help ensure the bull, or bulls, they purchase this year meet their needs," he says.

Know your operation, set goals

The first thing that's important to do is sit down and make a list of goals for your operation, if you haven't already. Then use those goals to form a list of what you're looking for in a bull. For example, a producer whose main goal is to improve performance and carcass merit in steer calves because of retained ownership through the feedlot might look at different bulls than one whose primary market is selling replacement heifers.

Weaber gives this advice: "Make sure you know what traits you would like to improve in your herd. What breed or breeds fit in your mating system? If you are using a crossbreeding system, make sure the breed you selected fits your objectives. Other factors to consider are: keeping replacement heifers, endpoints for progeny marketing (weaning, backgrounded or in the beef). Assessment of these factors will help point you to the best breed for your needs and the combinations of maternal/growth/carcass traits that best fit your operation and environment. Be sure to apply selection to traits that have direct economic importance in your production system."

University of Nebraska-Lincoln Beef Cattle Genetics Extension Specialist Matt Spangler agrees, saying, "It is critical for producers to understand what their breeding objectives and marketing goals are. This information helps to inform what traits are the most important to focus on. Once the traits of importance to a particular operation are identified, use expected progeny differences (EPDs) to select sires that have optimal values for those traits, keeping in mind environmental constraints (i.e. low feed and/or labor). Keep in mind that multiple-trait selection is important and many breeds now publish bio-economic index values to help with this. It is important to use indexes that fit your breeding objective."

See "EPD basics" for more on EPDs.

Be informed

In order to evaluate bulls and find one or more that meet your needs, it's important to have a good working knowledge of the numbers used to assess bulls. Spangler says, "There is a plethora of information available today to help producers make selection decisions when choosing the next sire for their cow herd.

EPD basics

Expected progeny differences (EPDs) allow for the comparison of animals within a breed for their genetic potential as parents for a given trait. EPDs have existed in the beef industry for decades, and their use has produced intended genetic change in many traits.

Basics of an EPD

Many traits (weaning weight, yearling weight, ultrasound measurements, etc.) must be recorded within certain age ranges to provide a fair comparison of animals.

University of Nebraska-Lincoln Beef Cattle Genetics Extension Specialist Matt Spangler says, "Too often seedstock producers and bull buyers get caught up in the actual weights, ultrasound data, etc., when selecting sires. EPDs (expected progeny differences) provide a measure by which animals within a breed can be compared to one another for their genetic potential as parents for specific traits. EPDs incorporate multiple sources of information, including full pedigree, an animal's own record, and progeny information. As additional sources of information become available, the accuracy of the EPD value increases."

EPD definitions

Spangler selected just a few EPDs to discuss as a demonstration. For a full list of EPD definitions, go online to *Hereford.org/content/epd-basics*.

	BULL A	BULL B
Calving ease direct	10	6
Birth weight	+2.0	+3.5
Yearling weight	+40	+52
Maternal milk	+3	-2
Maternal calving ease	4	6

Spangler explains each:

Calving ease direct — Bull A should have 4% more unassisted births from first-calf heifers than Bull B. While birth weight is an indicator of calving ease, it does not tell the whole story. Calving ease is an economically relevant trait. Producers should not use both birth weight and calving ease EPDs together since the birth weight EPD is already used in the calculation of calving ease.

Birth weight — Bull B's calves would be on average 1.5 lb. heavier at birth. Normally, producers should select bulls for use on heifers that are at or less than the breed average for birth weight. Depending on the breeds involved, you may need to limit use on heifers to bulls significantly below breed average. Keep in mind that when crossing breeds, heterosis or hybrid vigor can increase birth weights 10 to 15% over a straightbred average.

Yearling weight — Bull B's calves should average 12 lb. heavier at 1 year of age.

Maternal milk — Daughters from Bull A should produce calves that are 5 lb. (the difference between +3 and -2) heavier at weaning. This is not a measure of pounds of milk

This includes an individual's actual weights, ratios, ultrasound measurements, genomic profile and EPDs.

"For cow-calf or seedstock producers, understanding what this information means and how to effectively use it to make positive genetic change is critically important."

In the last decade or so, bull buying has changed significantly because there are many new genetic selection tools.

Spangler says, "There are more genetic selection tools now than there were five to 10 years ago. The list of available EPDs continues to grow. This makes identifying the most important traits to an operation, and using index values to alleviate the confusion that surrounds selecting on numerous traits at one time, even more important."

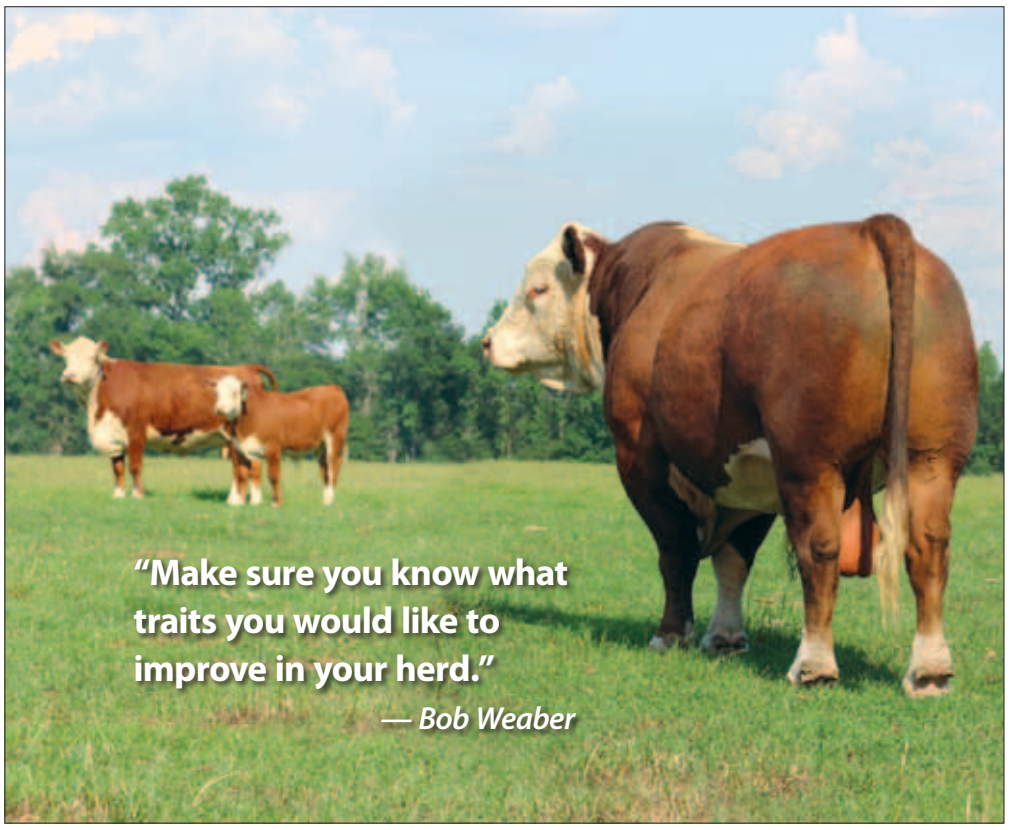
See "Hereford economic indexes" for more on indexes.

Now some breed organizations, including the American Hereford Association, have EPDs that are enhanced with the inclusion of genomic information. See Page 8 of this issue or visit *Hereford.org/dnatesting,* for more on genomically-enhanced EPDs.

Spangler adds, "This means that there can be differences between accuracy values on yearling bulls, whereas before there was traditionally not. Although the amount of information, specifically the number of EPDs, and the information included in EPDs (genomics) has changed, the fundamentals of bull buying have not."

Weaber agrees and says the first step to bull buying is to

continued on page 52...



Hereford economic indexes

Economic indexes allow for multiple-trait selection or simultaneous selection for more than one trait. They do so by combining multiple expected progeny differences (EPDs), each weighted by an economic value, into one numeric value, often expressed in dollars per animal.

Just like EPDs, indexes are to be used across herds within a particular breed. Although accuracy values are not published for indexes, use caution when making selection or mating decisions based on the index value of a young sire. As progeny information is added, indexes will change. Accuracy values associated with the EPDs in an index are good indicators of how accurate the index will be. The various indexes described below are intended for use within specific production goals. Adverse effects could be realized if indexes designed for terminal scenarios (terminal indexes) are utilized as the primary selection tool in a herd that retains replacement females.

Economic indexes defined

An economic index is a collection of EPDs weighted by their economic value such that traits with greater effects on production goals have a larger economic weight associated with them. For more on Hereford economic indexes, visit *Hereford.org/node/310*.

Baldy maternal index (BMI$)

This index is designed to select bulls for use on Angus-cross cows and heifers when some replacements are kept and all other offspring are sold on a grid-based system. These cattle could potentially qualify for either Certified Hereford Beef (CHB) or Certified Angus Beef (CAB) programs. Both calving ease (CE) and fertility (as measured by scrotal circumference) are emphasized. Weaning weight (WW) is weighted positively, while yearling weight (YW) is weighted slightly negatively in an attempt to promote pre-weaning gain but minimize mature cow size. Intramuscular fat (IMF) is emphasized more than ribeye area (REA) in order to enhance quality grade while maintaining an acceptable (3 or lower) yield grade.

Brahman influenced index (BII$)

This index is similar to the BMI$ except that calving ease (CE) is not emphasized as much, and it is assumed that all cull offspring are marketed on a commodity (weight) basis, since most grids do not accept Brahman influenced cattle. Fertility is strongly emphasized.

Calving EZ index (CEZ$)

This index is designed for selecting bulls to be used on heifers and thus emphasizes both CE and maternal CE. Although less emphasis is placed on growth and carcass traits, it still assumes that all cull offspring will be sold on a CHB grid.

Certified Hereford Beef index (CHB$)

This is a terminal index that places emphasis on WW and YW, CE and carcass traits. Fertility and milk are not index components, since all offspring are expected to be sold on a CHB grid. CE is included in an attempt to avoid extreme calving problems. Although fertility is not included in the index, it can be expected that scrotal circumference (SC) would increase due to its genetic correlation with growth traits.

Milk is obviously ignored in the CHB$ index. It is included in the other indexes, but is weighted slightly negatively because milk production in excess of the calf's needs becomes an added expense because of the influence milk production has on the maintenance requirements of the cow.

— Matt Spangler, *University of Nebraska-Lincoln*

but rather weaning weight due to milk production. This 5 lb., unlike the weaning weight figure attributed to growth from the bull, is the result of differences in the daughters' milk production and mothering ability. Excessively high milk levels in low input environments should be discriminated against due to increased nutrient requirements of cows.

Maternal calving ease — Bull B's daughters should calve as first-calf heifers with 2% more unassisted births (6-4) than the daughters of Bull A."

There are two new Hereford EPDs that are in research report distribution at this time: sustained cow fertility (SCF) and heifer calving rate (HCR).

SCF is a sire model where a sire gets credit each time a daughter calves beginning at 2 years of age instead of waiting to see if a sire's daughters make it to 5 or 6 years of age. In addition, SCF will account for censored records. For example, if a female goes into an embryo transfer (ET) program or is sold to another registered breeder, then that female will not be considered a failure, but the record will be censored with no credit. For more on SCF, go to *Hereford.org/content/sustained-cow-fertility.*

HCR is a sire model as well. It is shown by percentages of daughters calving and is somewhat similar to the units for calving ease EPDs. Higher values indicate greater likelihood of a sire's daughter producing a calf, given that she was retained as a replacement. To use these values, breeders should compare two or more sires and consider the difference/differences between or among them.

For example, if sire A has an HCR EPD of +3.0% and Sire B has an HCR EPD of -2.0%, the difference between the sires is 5.0%. If daughters of both sires are developed and bred in the same environment, you would expect sire A's daughters to have a 5% higher calving rate. Sires can also be compared to the breed average, currently +1.5%. The range in HCR EPD in the current analysis is from +23.9% to -25.3%. For more on HCR, log on to *Hereford.org/heifer-calving-rate-epds*.

In summary, Spangler says, "EPDs represent the genetic component of an animal's phenotype that is expected to be passed on to the next generation. Studies have shown that using EPDs are seven to nine times more effective than selecting based on actual phenotypes. While most producers think of increasing the economic efficiency of their operation by changing management systems (i.e., grazing schemes, calving dates, etc.) or utilizing different nutritional programs, the importance of correct genetic selection is all too often overlooked. If selection is based on nongenetic factors, as is the case when selecting on actual or adjusted measurements instead of EPDs or economic indexes, then an inefficiency is automatically built into the cow-calf enterprise. It is critical to understand how to interpret EPDs and to know breed averages, and be able to use percentile ranks in order to identify potential sires that fit the desired breeding objective." HW

...Buying Bullscontinued from page 51

Shopping at a sale

A sale, whether it's one hosted by a seedstock supplier or a consignment sale, is a great way to buy bulls.

Bob Weaber, Kansas State University Extension cow-calf specialist, reminds producers to keep these things in mind when planning to buy a bull or many bulls at a sale:

1) Once you receive the sale catalog, make a short list of bulls (6-12 head) that fit your specifications.

2) Seek out recommendations from your supplier well in advance of the sale.

3) Arrive at the sale site early to inspect the bulls on your short list.

4) Shorten this list of candidates based on conformation and updated data to identify your purchase candidates.

5) Keep the sale order in mind.

6) Stay focused on the bulls you selected earlier. Sticking to your plan will avoid impulse purchases. Remember: failure to plan is planning to fail.

A list of upcoming sales can be found in the Event Central tab at *Hereford.org* and a list of sale catalogs can be found at *HerefordMarketplace.com*.

Looking for a Hereford bull?

Here's where to start.

- Find a Hereford breeder near you by going to *Hereford.org/node/34*. You can find contact information for breeders in each state.
- Visit *HerefordMarketplace.com* to find feeder calves, commercial females and bulls for sale under private treaty sales. Also on Hereford Marketplace are listings for production sales. Catalogs are available for download to be printed or in searchable web format. Sale results are posted as well.
- Go to *BuyHereford.com*. Monthly consignment sales are hosted there, as well as production sales.
- Not online? Don't worry; just give the American Hereford Association a call at 816-842-3757.

make sure you understand the use of EPDs and selection indexes. "While EPDs are not the only selection information you should consider, EPDs are the most effective tools available to describe the genetic differences between animals within and across herds. EPDs are much more effective genetic predictors than actual or adjusted performance records. If an EPD is available for a trait it should be used instead of an animal's own performance record for that trait. The EPD removes age and environmental effects that can bias a decision based on actual or adjusted performance records. Use calving ease (CE or CED) EPD, rather than birth weight (BW) EPD if it's available, to select bulls that minimize calving difficulty. CE EPD calculations include BW data and other sources of information that affect dystocia."

Many commercial producers are switching to Hereford bulls, and for first-time Hereford bull buyers, it's important to remember that not all EPDs are the same. Weaber says, "Make sure you know the appropriate information for the breed of cattle you are purchasing. For a useful reference on EPDs and other genetic topics see the "Beef Sire Selection Manual" — *Nbcec.org/producers/sire.html.* Obtain the breed average EPDs and a percentile rank table available from the most current genetic evaluation for Herefords (or the breed of interest). These tools will enable you to compare the relative genetic merit of individual animals to other animals in the breed."

Budget accordingly

Also important is to set a budget. Weaber says, "Set a realistic budget for bull purchases. Like most things in life, price is driven by quality. Evaluation of a seedstock supplier's prior year sale averages will give you an idea of what to expect in terms of purchase costs. That said, prices over the last 12 months indicate that seedstock purchases are substantially more expensive, some as much as $500 more, than in previous years. The increased bull cost is largely driven by increased development costs incurred by seedstock producers. The added purchase cost makes it even more important to make a well thought-out decision."

Finally, it's critical to build a relationship with your seedstock supplier. If you already have a relationship, use it to your advantage. Weaber says, "Get to know your seedstock supplier and make sure he or she knows you and your operational goals." **HW**

Buying sight unseen

For some it's not possible or even necessary to travel to the sale or visit the seller's ranch. In many situations, it's perfectly fine to make a purchase without physically seeing the animal.

In order to make this "sight-unseen purchase" work, a large amount of trust must exist between buyer and seller. While the bull's genotypic information can be easily accessed from afar, phenotype is important as well. High-quality photos or videos can allow buyers to evaluate bulls when seeing them in person isn't possible. Most of the time, seedstock suppliers will provide photos and video upon request. These visual aids can help assure the buyer that the bull in question has the desired phenotype and can help prevent buyer's remorse when the bull arrives.

Matt Spangler, University of Nebraska-Lincoln beef Extension specialist, admits that phenotypic evaluation is important, but not necessary, to a purchase. "It is important that a bull has sufficient structural integrity to be able to do his job for several years. I would hope that commercial customers have a close enough relationship with their seedstock supplier, and that the seedstock supplier stands behind their product, such that this is not an issue."

He says properly using genetic selection tools is a must. "We really need to think of bulls as an envelope, a carrier if you will, of genetic material that will be passed to the next generation. We cannot see that from the outside, but we can quantify that through genetic selection tools such as expected progeny differences (EPDs). Phenotype is comprised of both genetic and non-genetic factors, but selection should focus on the genetic factors. With this in mind, visual appraisal via any medium, should take a back seat to using genetic selection tools as the primary selection method."

A marketing option that is gaining popularity is *BuyHereford.com*. The online tool hosts monthly consignment sales as well as hosting many producers' online sales.