

ECONOMICS

Buying known bull genetics adds value

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One of the most

important management decisions for a cattle operation is what bull to buy. When cattle producers make bull purchases, several

factors should be considered: number of bulls, type, acquisition time, age, source, quality and cost.

For this analysis, it is assumed the purchaser can do a good job of analyzing a bull's phenotype (physical characteristics) prior to purchase. If a producer does not have the necessary skills to visually evaluate the bull, the producer should either ask for help or purchase from operations or sales with breeding soundness or bull health guarantees.

How many bulls should be purchased is directly related to cow herd size. The typical bull-to-cow ratio is one bull to 25 or 30 cows but can vary by pasture size, property roughness and bull age. Producers with small cow herds are challenged to keep bull cost down while making sure all cows get bred. Having only one bull increases the risk of open cows for small herds because the bull might have or develop a breeding problem. With high value calves, an operation cannot generally afford to have open cows.



When selecting the type of bull to purchase, bull genotype (genetic makeup) should be selected to complement a cow herd to produce desirable calves. Knowing the genetic potential of the calves helps a producer determine whether to retain ownership past weaning. Uniform calves (both type and color) command higher prices than non-uniform calves at sale time.

Planning ahead usually results in a better selection of bulls with better genetics. Buying earlier gives the bull

time to acclimate to the region, the ranch and the handling procedures of the operation. Also, buying early allows for additional growth of 12- to 18-month old bulls, which is the typical age of many bulls in today's market. For spring-calving cow herds, this would mean purchasing bulls in the fall when the number of bulls needed is not yet fully determined. When bulls test infertile during a breeding soundness exam prior to the breeding season or are injured during the breeding season, replacement bulls ▶

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that match the existing bull battery must be obtained as soon as possible.

In determining where to buy bulls, a cow/calf producer should look for seedstock producers with good reputations, the breed needed, quality genetics and the documentation necessary to validate genetic quality, such as actual performance and expected progeny differences (EPDs).

The bull's quality and cost are commonly linked; a bull that can sire heavier calves should be worth more. The best way to determine a bull's value is potential revenues returned to the operation in the form of calf weight.

Once analyzing the numbers, visually inspect the bulls and rank according to priority. Then decide how much the bulls are worth. Three bull investment scenarios are provided in Tables 1 and 2: Bull 1 is a typical bull purchased out of a sale barn to just get the cows pregnant; Bull 2 is purchased from a neighbor or friend and could be of known parentage with individual animal performance available; Bull 3 is purchased from a reputable breeder with known genetics, and individual performance information and EPDs are available.

Table 1 shows the total annual economic bull costs per cow for each bull, assuming each performs for five years. From the analysis, the difference between Bull 1 and Bull 2 is \$12.69 per cow, which for a 550-pound calf is **\$2.30 per hundred weight**. There is a \$31.09 per cow difference between Bull 1 and Bull 3, which on a 550-pound calf is **\$5.65 per hundred weight**. Table 2 shows examples of how these investments could affect an operation. Tables 1 and 2 demonstrate the performance differences in

Table 1: Economic costs and assumptions

	Bull 1	Bull 2	Bull 3
Purchase price for bull	\$2,500	\$4,000	\$6,000
Average cows per bull	25	25	25
Total calves sired per bull	125	125	125
Years of expected use	5	5	5
Salvage weight of bull	1,850 pounds	2,000 pounds	2,000 pounds
Salvage value of bull	\$2,015	\$2,178	\$2,178
Total annual maintenance costs per bull* (e.g., feed and vet)	\$290	\$290	\$290
Total annual ownership costs per bull. (e.g. depreciation)	\$97	\$364	\$764
Total annual financial costs per bull	\$392	\$659	\$1,059
Total annual economic costs per bull**	\$586	\$903	\$1,363
Total annual economic bull costs per cow	\$23.45	\$36.14	\$54.54

*These assumptions hold the annual carrying cost (i.e., feed, vet, etc.) constant for all three bulls.

**This includes opportunity costs on land and equity capital.

Table 2. Performance and income differences between bulls.

	Bull 1	Bull 2	Bull 3
Increased weaning performance	XX	+50 pounds	+100 pounds
Value of increased weaning performance (at \$1.10 per pound value of gain)	XX	\$55 per calf	\$110 per calf
Increased yearling performance (difference in average daily gain)	XX	0.75 pounds	1.0 pound
Increased yearling performance (60 days preconditioned)	XX	45 pounds	60 pounds
Value of increased performance	XX	\$50 per calf	\$66 per calf
Total increased value	XX	\$105 per calf	\$176 per calf
Additional cost per cow	XX	(\$12.69)	(\$31.09)
Marginal return per cow per year	XX	\$92.31	\$144.91
Additional marginal income (for 125 calves over five years)	XX	\$11,538	\$18,113

subsequent calf crops and potential incomes related to purchasing bulls based on EPDs and pedigrees.

It usually pays to purchase good genetics. While every operation might not receive an increase in performance as projected above, there are operations that have seen greater increases. With a high value of gain, relatively small differences in marginal cost relate to significant differences in marginal return. When considering performance differences, bulls that increase calf growth performance are worth a lot more than average bulls and typically do not cost as much as they are worth. ■