

DEFINITIONS AND ABBREVIATIONS

BIRTH WEIGHT:	Weight taken before the calf is 24 hours old.
ADJ 205 WEIGHT:	Weaning weight adjusted to 205 days and adjusted for age of dam. Creep (C), Non-creep (NC), and Embryo Transfer (ET) are indicated in the management (Mngt) column. Number of contemporaries (Cont) are also indicated below Mngt.
TEST ADG:	Average daily gain on 84 day test. ADG ratio determined within breed group and age group. Ratio above 100 indicates ADG above group average.
FINAL WEIGHT:	Actual weight of bull at the end of the 84 day test period (November 5 th for senior bulls, December 3 ^d for junior bulls).
WDA:	Weight per day of age at the end of test. WDA ratio is determined within breed group and age group. A ratio above 100 indicates a WDA above the breed group average.
YRLING:	Adjusted 365 day yearling weight (BIF formula used) for bulls on performance test.
FE:	Feed Efficiency defined as pounds of feed required to put on one pound of gain. Feed efficiency ratio determined within breed group. A ratio above 100 indicates a bull used less feed to put on one pound of gain.
FRAME:	Frame Score using BIF formula.
UFAT:	Adjusted Ultrasound Backfat Thickness measured at the 12th and 13th rib in inches.
UREA:	Adjusted Ultrasound Ribeye Area measured at the 12th and 13th rib in square inches.
UIMF:	Adjusted Ultrasound Percent Intramuscular Fat measured in the ribeye muscle. This will predict marbling in the ribeye, which determines USDA Quality Grade. See page 7 for more details on how to interpret this measurement.
SCROTAL:	Scrotal circumference in centimeters taken at the end of the 84 day test period.

EXPECTED PROGENY DIFFERENCES (EPD): The expected difference in performance of a bull's progeny when compared to the average progeny performance of all bulls evaluated. EPD's are reported in pounds and are directly comparable across all herds within a breed, but not across breeds. Several economically important traits in beef cattle have EPD's. Traits include:

CALVING EASE DIRECT: Predicts the ease with which a bull's calves are born to first calf heifers. EPD's for calving ease are reported as deviations in the percent unassisted births. When comparing calving ease EPD of two sires, the larger EPD indicates a higher percent of unassisted births for calves sired by this bull. Available in the Gelbvieh, Hereford and Simmental breeds.

CALVING EASE DAUGHTERS: Maternal Calving Ease - The ease with which a bull's daughters calve as first calf heifers. EPD's for calving ease are reported as deviations in the percent unassisted births. When comparing maternal calving ease of two sires, the larger EPD indicates a higher percent of unassisted births for calves born out this sire's daughters. Available in the Gelbvieh, Hereford and Simmental breeds.

BIRTH WEIGHT EPD: Predicts the difference in average birth weight of a bull's calves compared to calves of all other bulls evaluated. Compare the bull's EPD to the breed average to determine whether he is above or below average for birth weight EPD for his breed. If the birth weight EPD is higher than breed average, he will sire heavier calves at birth than the average bull calf born in 2002.

WEANING WEIGHT EPD: Predicts the difference in average 205 day weight of a bull's calves compared to calves of all other bulls evaluated. Compare the bull's EPD to the breed average to determine whether he is above or below average for weaning weight EPD for his breed. If the weaning weight EPD is higher than breed average, he will sire heavier calves at weaning than the average bull calf born in 2002.

MATERNAL EPD: Maternal (Pure Milk) EPD predicts the difference (due to milking ability) in **average 205 day weight** of a bull's daughter's calves compared to calves of all other bulls evaluated.

YEARLING WEIGHT EPD: Predicts the differences in average 365 day weight of a bull's progeny compared to progeny of all other bulls evaluated. Compare the bull's EPD to the breed average to determine whether he is above or below average for yearling weight EPD for his breed. If the yearling weight EPD is higher than breed average, he will sire heavier calves at yearling than the average bull calf born in 2002.

SCROTAL CIRCUMFERENCE EPD: Scrotal circumference EPD value predicts the difference in a yearling scrotal circumference (measured in centimeters) of a bull's male calves compared to male calves of all other bulls evaluated.

CARCASS WEIGHT EPD (CW): Carcass weight is a good predictor of **total** retail product, but not **percent** retail product. Selecting sires with higher EPD values for carcass weight will result in progeny carcasses with more total retail product at a constant fat and age endpoint. The industry target weight range for carcasses is 650 to 850 pounds.

MARBLING SCORE EPD (MARB): The marbling score EPD can be used to select sires that will produce progeny with more marbling at a constant fat or age endpoint. The higher the marbling score EPD, the higher the amount of intramuscular fat in the ribeye muscle. The genetic correlation between marbling score and external fat at the 12th rib is nearly zero. This means breeders can select for increased marbling and will not have to worry about selecting for increased external fat. Intramuscular marbling contributes to the overall eating experience of beef. It is a significant component of juiciness and flavor of the beef product. Intramuscular fat plays a small role in tenderness of beef.

RIBEYE AREA EPD (REA): expressed in square inches, is a predictor of the difference in ribeye area of progeny at a given end point.

ULTRASOUND INTRAMUSCULAR FAT (UIMF): is a predictor of the difference in sire's progeny for percent intramuscular fat in the ribeye muscle compared to an average sire.

ULTRASOUND RIBEYE AREA (UREA): is a predictor of the difference in square inches of ribeye area for a sire's progeny compared to an average sire.

ULTRASOUND BACKFAT THICKNESS (UFAT): expressed in inches, is a predictor of the difference in external fat thickness at the 12-13th rib of a sire's progeny compared to an average sire.

ACCURACY (ACC): A measure of certainty regarding the genetic merit of a bull. Accuracies are reported as a decimal number between zero and one. Larger values indicate greater accuracy and more certainty that a bull's EPD value will not change significantly with additional progeny information.

For selection of breeding stock, it is important to know how EPD values for an individual animal compare to current breed averages. Average non-parent EPD values for some economically important traits are found in the table below, These averages are useful for making comparisons within breeds.

AVERAGE EPDs FOR 2002 BORN ANIMALS FROM 2001 BREED SIRE SUMMARIES

Breed	Birth	Weaning	Yearling	Milk	Scrotal	UBF	UREA	UIMF
Angus	2.6	36.0	66.0	18.0	0.27	0.003	0.10	0.05
Brangus	2.0	21.0	34.0	9.0	0.35		0.20	0.08
Charolais ¹	1.5	17.6	30.9	5.4	0.42			
Gelbvieh	1.4	36.0	66.0	18.0	0.30			
Hereford	3.7	34.0	58.0	12.0	0.50	0.00	0.04	0.00
Limousin ¹	1.2	11.9	22.9	5.1	0.20			
Simmental	2.0	33.7	57.3	5.6	n/a			

¹ Averages include both males and females. Average carcass EPD values (BF, REA, Marb) for Gelbvieh cattle are 0.00,0.00,-0.01; and Limousin cattle are 0.00, 0.15, 0.01. Average carcass EPD values for Simmental cattle (Marb, Retail cuts) are 0.14, -0.01.

Care of Newly Purchased Performance Tested Bulls

Several management practices should be observed when newly purchased bulls are brought home. These practices can help to ensure that each new bull has a long and productive future with good productive performance.

- Feeding:** This is a young calf (13 to 15 mo. old) that still has a lot of growing to do. Feed this young bull well. Feeding 5 to 10 pounds of grain and 1 to 2 pounds of a protein source will assist him in the completion of the growth process. Continue to supplement this young bull during and after the breeding season.
- Only use this young bull in a 45 to 60 day restricted breeding season. Observe him closely to see if he is servicing females properly.
- Young bulls should be limited to a minimum number of cows to service. The number is decided by his age. The following guidelines can be used:

Bull's Age	Number of Females
12-15 months	10 to 12
15-18 months	12 to 18
18-24 months	18 to 25
24 months and older	25 to 35

- Place young bulls in well fenced lots before and after the breeding season to keep bulls away from cows in heat. There should be shade and plenty of clean water in each lot. Provide free-choice minerals and routinely treat for parasites.
- Remember bulls are guaranteed by the consignors to be breeders only if they are managed correctly after the sale.