

## Basic Beef Cattle Records

Successful commercial producers and purebred breeders must be able to evaluate records. Both should understand the importance of records to their breeding programs; however, the commercial producer does not need the detailed records that the purebred breeder needs.

Commercial producers sell beef by the pound. This means that reproductive efficiency and growth rate are critical. Once the herd is established, they only buy bulls from purebred (seedstock) breeders.

The purebred breeder sells low-performing cattle by the pound through commercial channels. However, superior performers are sold by the head, with most bulls going to commercial herds and females to other seedstock breeders.

Commercial producers and purebred breeders sell to slightly different groups of buyers, but reproductive efficiency and growth rate is critical to both. Commercially, cattle are primarily sold by the pound and as a uniform group. Purebred animals sell by the head, and performance history (performance pedigree) provides an added value to these animals.

### COMMERCIAL PRODUCERS

*Commercial One-Bull Unit* - A commercial cattleman with a small herd, a one-bull unit (30 cows), needs very little in the way of records. The cows should be permanently identified by either a brand or ear tattoo. Ear tags can be used along with tattoos. Brands and tattoos are the only means of permanent identification. The record-keeping system starts at birth. The calf should be tagged and tattooed, matched with its dam and birth date, and its weight and sex recorded.

Formal records with adjusted weights for age of dam in a small commercial herd can be excess baggage. After all, the commercial cattleman is interested in actual marketable pounds per cow. This makes culling simple—sell the cows weaning the lightest calves. It does not matter whether the calf is light because its dam milked less or because it was born late in the season. Either way, the dam is not pulling her weight and is putting a burden on YOUR profits.

*Commercial Multi-Bull Unit* - The situation is different when there are enough females to run two or more bulls. The reasons are simple: cow numbers complicate informal (pocket) records and the progeny of two or more bulls must be compared. Table 1 is an illustration of what might happen when several bulls are being used.

**Table 1. Progeny Comparison of Three Bulls**

Bulls	Number of Progeny	Actual Weaning Weight, lb
1	27	512
2	24	450
3	12	514

By carefully analyzing the information on the three bulls in Table 1, it is obvious that bull 2 is the inferior individual. Every calf sired by bull 2 averages 62 pounds less per calf in actual weaning weight, or a total of 1,488 pounds for the 24 calves. In most herds, this fact would be overlooked, but an efficient cattle producer must know these facts. A producer cannot afford to run multiple sires and not know exactly what each sire's progeny is doing within the herd.

The South Carolina Beef Cattle Records Program is a comprehensive, total-performance records program. It is designed to make the collection and recording of performance information uniform across herds, to give summaries on the progeny at weaning and post-weaning, and to summarize cumulative data on sires and dams. The goal is to use these performance records to make the best management and selection decisions. Records are adjusted for known sources of variation so that needed comparisons can be made intelligently. Annual sire and dam summaries on these records are very important when making breeding decisions.

In summary, the commercial producer with a one-bull unit (30 cows or less) should purchase bulls with the most complete and positive growth records possible; then annually cull and sell cows with the lightest-weight calves at market time. The larger commercial producer must have more detailed records to be able to evaluate each bull's progeny and provide a cumulative record on the progeny of each cow and rank her within the herd. In this way, poor-performing bulls and cows can be identified.

*The Purebred Breeder* - What records do purebred breeders need and commercial cattlemen searching for young herd sires expect to see? Two types of records are available. The traditional or typical records are adjusted 205-day data and postweaning data. However, estimated performance data is newer, highly reliable, and should be used.

**Table 2. Traditional Records**

Preweaning Data	Postweaning Data
Birth weight	Days on feed
Birth weight ratios	ADG/ratio
205-day adj. weights	365-day adj. weights
205-day ratios	365-day ratios
No. of contemporaries	BSE on bulls

In Table 2, the preweaning data is typical of most record programs— those used in state beef improvement and/or purebred associations, for example. Birth weights may or may not be recorded in commercial herds but are essential in purebred herds because every buyer wants to know the birth weight of the bull about to be purchased. Concerns over

calving ease are real; difficult births not only lower the number of live calves born but also increase the vet bill and delay rebreeding. Birth weight ratios are more meaningful than actual birth weights, therefore, all birth weights should be recorded by the purebred breeder.

The 205-day record and, better yet, the 205-day ratio indicate the maternal influence upon the calf. For example, mean or average ratio is always 100; ratios below 100 indicate below-average maternal influence and ratios above 100 indicate above-average maternal (milking) influence. A 205-day ratio of 110 indicates that the calf weighed 10 percent above the average of his/her contemporaries and that its dam is 10 percent above the average of the herd for pounds of calf weaned. A bull selected out of this dam (cow) should add milking ability to his daughters.

The number of contemporaries or the number of calves compared within an age group lends reliability to records. For example, if the number of contemporaries is 10, the calf is compared with 9 others, and the record is accurate for predicting genetic ability. With fewer than five contemporaries, the record reflects environmental influences more than genetic ability. These records are only good for comparing calves within a herd— contemporary management groups. They can not be used to compare individuals from two different herd/management groups.

Preweaning data (205-day information) indicates the maternal environment, while postweaning data reflects individual growth ability. Some animals look good at weaning but fail to perform under postweaning environments. Testing bulls on the farm or in test stations is an excellent way of weeding out these losers. Cattlemen who purchase young bulls at weaning are taking a tremendous risk with a management practice that is not recommended.

**Table 3. 205-Day vs Postweaning Performance in Bulls**

Bull No.	205-Day Adj. Wt.	205-Day Ratio	365-Day Adj. Wt.	Test A.D.G.	305-Day Ratio	No. Cont.
36	755	131	1,373	4.43	109	8
38	766	89	1,226	3.00	97	8
40	822	87	1,271	2.93	101	8
42	789	120	1,370	4.04	108	8
44	761	83	1,117	2.78	88	8

Table 3 shows that the bulls' records were more alike at weaning (205-day adjusted weight) than they were at their 365-day adjusted weight. A cattleman who purchased bull 44 at weaning definitely would not have been pleased with his calves. In fact, bull 44 would sire calves that would be expected to have decreased weights (12 percent) at 1 year of age. If a cattleman was selecting a bull to help with postweaning performance, bulls 36 and 42 would get the job done best. However, one could have very easily made the mistake of purchasing bull 40 at weaning. Never purchase young sires before you see the complete record, 205-day, test ADG and 365-day records along with ratios, and the number of contemporaries. EPDs (estimated predicted difference) are available on young sires in breeds that have sire summaries, and these estimates are more accurate than most cattlemen realize.

### BREEDING SOUNDNESS EXAM

A bull's breeding soundness exam (BSE) is another necessary piece of data when buying bulls. This may be new to many cattlemen, but it is an essential part of a yearling bull's record. In no way should a bull be purchased without knowledge of his reproductive ability; after all, isn't that what is expected of the bull? Bulls with exactly the same yearling performance records may be vastly different in their ability to reproduce.

Breeding soundness exams at any age are good; however, BSEs at 1 year of age indicate time of puberty as well as puberty expectations in his daughters. Scrotal circumference in yearling bulls provide puberty estimates. Very few bulls produce semen with scrotal measurements less than 30 cm. Also, data indicates that, with additional scrotal increases above 30 cm, days to puberty in daughters are reduced. Days to puberty is extremely important as we become more efficient and breed heifers to calve at 22-24 months of age.

### MATERNAL AND ESTIMATED PERFORMANCE

As indicated earlier, maternal and estimated performance data is useful, and it is becoming more

reliable. This data should be used by both the commercial and purebred operations, with special emphasis on use by the purebred breeder. These data rank the bull (or cow) with all other bulls (or cows) in the breed and give an accuracy value of the estimate. A high accuracy value implies that breeding value estimates are unlikely to change drastically. These values can be used to compare individuals from different herds.

**Table 4. Maternal and Estimated Performance**

Dam Information	Estimated Performance
Dam summary/MPPA	EPDs/EBVs
Calving ease	Birth weight
Calving interval	Weaning weight
	Yearling weight
	Maternal
	Milk
	Carcass

Pedigrees and information reviewed in Table 2 are essential before information in Table 4 can be determined. Maternal and estimated performance data on individuals are accumulated over time, and they become more accurate as more and more pedigrees are supported with performance data. These accumulative data, specifically the dam summary and/or MPPA (most probable producing ability), summarize each female's performance over time and rank her within the herd. This enables the breeder to evaluate the females and cull with accuracy, based upon the lack of performance. Records that are not accumulative are not a good measure for culling.

Dam's data that give calving ease and her calving interval are excellent tools to use when selecting both replacements and young herd sire prospects. A producer should be concerned about reproductive efficiency first! Where is a better place to start than with selections out of females who calve with ease and on a regular schedule?

Estimated predicted difference (EPD) and estimated breeding value (EBV) are figures that give expected performance of progeny. These values are calculated on a breed basis and these data are collected over time and across herds. Again, past performance and pedigrees are used to estimate or predict the expected

performance. The pedigrees with more performance will yield estimated figures with a higher accuracy value. Always be aware of the accuracy figure. High estimates with low accuracy will not guarantee anything. However, estimates with a high accuracy will be safer and ensure progress.

Estimated values are being given for birth weight, weaning weight, and yearling weight. Depending upon the breed, estimates may be available for maternal traits, milk in daughters, carcass traits, etc. These figures are given on performance pedigrees and in sire summaries. A number of breeds now print sire summaries annually. Using these sire summaries wisely will allow the purebred breeder to stack pedigrees and ensure positive performance. Therefore, the use of a breed or breeds with sire summaries is a more scientific approach to cattle breeding, whether it is purebred or commercial.

While commercial producers might need records in less detail, they should expect detailed records to be kept by the purebred breeders where they buy their next herd sire. Successful cattlemen will be those who use records when making breeding and selection decisions. Using measurable data should guarantee positive progress in both purebred and commercial herds.

Records need to be conclusive and not be complicated. Numerous record systems are available. Many cattlemen who own their own computers want to produce their own records; however, use caution when making a decision about record keeping. Cumulative records are critical when evaluating the cow herd, and most home computers may not have that capability. Collect, measure, and use accumulative data when making breeding and management decisions. Prosperous cattlemen will be those familiar with records and their meaning.

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