



# BEEF CATTLE TIME

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## EPDs and Accuracy

*F. David Kirkpatrick, Professor  
Animal Science*

Most major breed associations report Expected Progeny Differences (EPDs) as a means of estimating an individual's genetic value for a particular trait. The EPD predicts differences in progeny performance for a particular trait among prospective animals. EPDs are calculated for a number of different traits and reported in the same unit of measurement as the trait. An EPD value can be either a positive or negative value depending on the calculated genetic value of the individual in relationship to its breed.

In addition to the EPD, an accuracy value — which is a measure of the reliability of the calculated EPD — is also determined. It reflects the amount of available information used in the calculation and establishes a relationship between the calculated EPD of the animal and the true EPD of the animal. Accuracy values range from 0 to 1.0 with 1.0 never being attained. Most yearling bulls have accuracies from .05 to .35 for growth traits since the calculation of this EPD is based on the bull's own performance record and pedigree information. Older bulls with more progeny records used in the calculation of their EPD will have higher accuracy values. Accuracy is primarily a function of the amount of information available on an individual.

As more information becomes available (progeny records), an animal's calculated EPD for a trait will change. It can increase or decrease in value. The best way to evaluate accuracy is to estimate how much the calculated EPD can change as more information is obtained on an animal and used in the estimation of his EPD. That change in an animal's EPD is called "Possible Change." Those breed associations which publish a sire summary will have a table with possible change in a trait associated with different accuracy levels. The following Table is from the Angus 2007 Sire Evaluation Report and shows the amount of "possible change" in a birth weight EPD with a particular accuracy.

	BW EPD (lb.)	Accuracy (%)	Possible Change (lb.)	True EPD Range (lb.)
<b>Bull A</b>	1.8	.20	+ or - 2.1	-0.3 to 3.9
<b>Bull B</b>	1.8	.85	+ or - .39	1.4 to 2.19

We would expect that the true EPD for birth weight of Bull A would have a 67percent chance of being between a - 0.3 (1.8 - 2.1 = -0.3) and + 3.9 (1.8 + 2.1 = 3.9). Bull B's true EPD for birth weight would have a 67percent chance of being between +1.41 and +2.19 . We never know the true EPD of any trait for any animal, although EPDs for high accuracy bulls closely approach the true value.

Accuracy values are a tool for risk management in a breeding program. There would be less risk in using Bull B in breeding heifers due to his higher accuracy for Birth Weight EPD. This illustrates a primary advantage of using high accuracy bulls through AI on heifers.

Regardless of accuracy, EPDs are our most powerful tool for making genetic changes in cattle. They are several times more valuable than adjusted weight records or ratios or even visual appraisal.

### Information on Cattle and Feeding Management During Drought on Animal Science Department's Web Site

*James B. Neel, Professor  
Animal Science and*

Drought covers most of the Southeast as well as other sections of the country. This has created a big problem for beef producers. It will be a big challenge to manage cattle and feed resources during this time. Thirty-nine fact sheets with information to assist Tennessee's beef producers during drought and limited feed supply situations are available on the UT Department of Animal Science Web site. You can find these articles at: <http://animalscience.ag.utk.edu/beef/drought.htm>

## Soybean Hulls As A Supplement

Warren Gill, Professor  
Animal Science

The soybean hull is the seed coat, which is removed during oil extraction. It is usually toasted and ground after removal and may be added back to the meal. Soybean meal with 48 percent crude protein does not have the hulls added back after processing while 44 percent soybean meal contains the hulls.

Soybean hulls are high in neutral detergent fiber (>60 percent) that is complementary to microbial forage digestion. This means that soybean hulls are highly digestible by ruminants and are particularly useful in forage-based diets. Demand and prices are usually lower during the summer months.

Soybean hulls typically contain 80 percent total digestible nutrients (TDN), 10 to 12 percent crude protein and 14 percent starch. The lower starch level results in a lower rate of fermentation and reduces problems with acidosis.

Soybean hulls are light and bulky with a weight of 20 lb/cubic foot. They are usually stored in flat bed storage and loaded with a front-end loader. They are very palatable to cattle and are a good feed for newly weaned calves. The protein, calcium and phosphorus is adequate and nearly balanced, making soybean hulls a commodity that can be fed without mixing with other feeds. They have also been used to supplement bulls since they are palatable and their low starch concentration reduces the chance of acidosis and founder. When used as a supplement with forage, soybean hulls depress forage intake and digestibility less and usually result in better cattle gains than similar amounts of TDN from grains.

Soybean hulls can be fed at high levels to growing cattle, but storing and handling characteristics may limit their use in some situations. Sometimes the quality of the soybean hull pellet is low, causing the pellets to crumble into a somewhat dusty product. Feed dust is also called "fines." Too many fines is associated with increased risk of bloat, particularly if the pellets make up a significant portion of the diet.

To show how soybean hulls can be used in a forage-based feeding program, UT researchers allotted 72 weaned steer calves (637 lb) to a 57-day trial consisting of six different regimens: hay alone or a combination of hay and supplement (5 regimens). For supplemented diets, hay supplied about 60 percent of daily energy, with the additional 40 percent coming from supplements composed of 100, 75, 50, 25, or 0 percent of supplemental energy from soybean hulls and the remainder from cracked corn. Results are summarized in the following table.

**Table 1. Effect of various combinations of corn and soybean hulls on calf performance on a hay-based diet**

Diet	Final wt., lb	Avg. daily gain, lb/day
100% hay	686 <sup>b</sup>	0.77 <sup>c</sup>
<b>Supplement regimens</b>		
100% soybean hulls, 0% corn	734 <sup>a</sup>	1.72 <sup>a</sup>
75% soybean hulls, 25% corn	732 <sup>a</sup>	1.65 <sup>a</sup>
50% soybean hulls, 50% corn	725 <sup>a</sup>	1.59 <sup>a</sup>
25% soybean hulls, 25% corn	730 <sup>a</sup>	1.70 <sup>a</sup>
0% soybean hulls, 100% corn	701 <sup>ab</sup>	1.17 <sup>b</sup>
<sup>a,b,c</sup> Values within columns with different superscripts are significantly different (P<0.05).		

As shown above, all supplements increased weight gain over hay alone. Furthermore, the addition of soybean hulls to the supplement increased performance over 100 percent cracked corn diet (Fisher et al. Southern Section ASAS. Abstract 21).

## Stretching Short Hay Supplies

Dr. Gary Bates, Professor  
Plant Sciences

Low hay supplies could be a major problem for many cattle producers this winter. The summer drought is forcing many farms to feed hay during July and August. This, coupled with the poor spring season, has resulted in hay supplies being low. Stretching a low hay supply could be the difference between making or losing money this winter. A couple of steps should be taken to make your hay stocks last longer.

**(1) Use proper hay storage.** If hay supplies are low, you cannot afford to have hay rot in storage. Research has shown that one-third of a bale can be lost to rot over the winter. The rot occurs both on the bottom and top of the bale. Table 1 shows the effects of several different storage methods.

**Table 1. Effects of storage methods on bale rot.**

Storage method	Percent of bale rotted
inside barn	6
under tarp	12
outside, off ground	28
outside, on ground	35

Anything that can be done to reduce the exposure of the bale to moisture will reduce the loss. Putting hay inside a barn is the best choice because it keeps the bale from getting wet on the top and bottom in one step.

Hay tarps have been used with great success and have the advantage of being less expensive. Hay tarps can be purchased from various farm supply stores for \$200 - 300, depending on the size. A stack of hay can be built "pyramid style," and can be either two or three bales high. Be sure to leave the ends of the stack open (uncovered), so that air can move through the stack. If

not, condensation may occur on the underside of the tarp, causing rot on the top bales. Also be sure to secure the tarp. Lay the tie ropes down before stacking hay, so that the hay stack is helping hold down the tarp.

If you decide not to use either of these hay storage methods, at least try to put your hay in a well-drained area to reduce the loss from the bottom of the bale. The worst places to store hay are either in an area where water collects or under trees. Both of these places cause hay to stay wet for an extended period, increasing the amount of hay lost.

**(2) Decrease hay feeding losses.** Large amounts of hay are lost each winter because cows reject and trample hay in the feeding area. Use some sort of feeding method that will limit the amount of hay cows and calves can waste during feeding. Table 2 shows the effect of hay feeding method on hay waste.

**Table 2. Effect of feeding method on hay waste**

Feeding method	Hay lost (%)
hay in ring	5
no ring used	
1 day supply	11
2 day supply	25
4 day supply	31

Feeding in some sort of ring or rack to prevent cows and calves from laying, defecating, and trampling on the hay will decrease the amount of hay rejected. If round bales are going to be fed without a ring on the ground, it will help to feed every day instead of putting out several day's worth at one time. This is especially important if hay is unrolled down a hillside. Spreading more than one day's worth of hay will result in a large amount of loss.

**Conclusion.** Storing hay under cover and feeding every day may be difficult departures from practices of previous years. But when hay is short, you can either follow these guidelines, buy hay, or sell cows. In the cattle business, the difference between profit and loss is often in the preparation and effort. Don't let a lack in these areas cause the winter to be unnecessarily difficult for you.

## Cattle Marketing During Droughts

*Emmit L. Rawls, Professor  
Agricultural Economics*

Hopefully, by the time you read this, the drought will have been "rained out;" however we are headed into what is normally the hotter and drier time of the year. There are many reports of the first cutting of hay only making 50 percent of the normal tonnage. Hay stocks on farms as of May 1 were down 28 percent from a year ago. So, many beef producers had to cull heavy to better match cattle to current and expected feed resources.

In early June, weekly receipts of cattle at Tennessee auctions were double those of a year ago. Cows

as a percentage of the receipts were also double those normal for this time of the year. Most of the cows were going to slaughter with calves being sold as singles.

We need to put some things into perspective regarding the cattle cycle and cow slaughter. After two years of herd buildup, the drought in the South Central and Southwestern states last year caused herd growth to stop. Cow slaughter was up 14 percent last year largely due to the drought and low milk prices. Beef replacement heifers had been increasing for two years, but were unchanged last January from the previous year, as cows were placed into feedlots when grass became scarce. Although cow prices weaken during the summer and fall, do not expect this increase in Southeastern cow marketings to flood the market.

For those still wrestling with culling/liquidating decisions, there are some things to consider, though each situation needs to be looked at on an individual basis. Cows carrying good flesh (not fat) are worth more than thin cows. It makes no sense to feed a cow in good flesh scarce or high priced feed, only to sell her later for a lower price and perhaps thinner and at lighter weight. Cow prices tend to decline in the summer and fall compared to the spring. Based on historical price patterns for cull cows, a cow worth .50 cents a pound in July would only bring \$44.88 cwt in October, assuming they were still in good flesh. On an 1,100 pound cow, that is a reduction of \$56.32 per head if the cow maintained her weight. In most years they gain weight from spring to fall, but might not in a very dry year. Some other parts of the country that liquidated many cows last year will be restocking, but producers may wait until pastures get in better shape. We have not heard of replacement cows moving to those states. Cows eligible for culling should be obvious and would include older cows and those with eye, feet or udder problems. In addition, those producing poor calves and late breeders should be culled. This is no time to be sentimental.

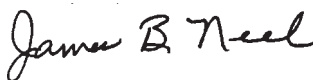
What about the calves? Does it make any sense to wean calves early and feed them for later sale? Due to good grass in other parts of the country, prices have held reasonably well for this time of the year. If you are weaning early, a preconditioning including feeding for at least 45 days, a good double vaccination program, and of course castration and dehorning where necessary is recommended. Feed is relatively high priced, so shop the market for the best program for your situation. The calves need to gain 100 pounds or more to pay for the feed and vaccination program. Consider a low stress weaning program using either fence line weaning (cows and calves can touch noses) or the new plastic weaning or anti-nursing devices, which many farm supply stores are now carrying. Calves wearing these devices can be turned back with the cows for 7 to 10 days. Calves weaned this way bawl less and may not even lose any weight if a good quality feed is available.

There are several opportunities to market at preconditioned sales in Tennessee. These sales use the graded

sale concept, though a few sell by ownership. By placing the calves in large uniform groups the seller is more likely to “capture” the value they have “created” with the preconditioning program. As a general rule, if one sells a small number of calves at the weekly auction, it is difficult to reap much of a premium for the calves. Buyers may pay a little more, but really need a load of similar calves in order to pay top dollar. The Tennessee Department of Agriculture has incentive funds for producers who can age and source verify their calves through the Process Verified Program (PVP) of the Tennessee Livestock Network with an additional incentive if the calves are marketed in a recognized preconditioned sale.

The general price trend and price slide can also affect the profitability of a preconditioning program. If the price when the calves are weaned is high but

declines sharply before they are sold, it is hard to make a positive return. This happened last fall when corn prices rose and feeder cattle prices declined. Work by Laura Howard, area farm management specialist, indicated that the most profitable time to precondition spring calves was starting in the mid to late fall, marketing 60 days later. The price slide occurs because heavier calves sell for less than light ones. Due to high-priced corn, the slide is a little less than normal, which would favor the preconditioning system.



James B. Neel, Professor  
Animal Science

## Beef Cattle Time

From:

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Leader/Agent

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