

# INTEGRATED BULL MANAGEMENT: CRITICAL SUCCESS FACTORS

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## SELLING/BUYING A BULL

**Selling a Bull:** Most bull buyers purchase within 150 miles of their operation. Selling bulls private treaty is the most time consuming, yet for many producers, the best way to sell bulls. Some breeders prefer to sell bulls through their annual production sale or consignment sale. Either way, bulls should be in good condition, accompanied by performance data and fertility test information.

Once the sale is made, make an effort to keep up with the buyers. The majority of business is repeat customers. Make a buyers file with names, addresses, phone numbers, and plan to use it to keep customers informed about the program. Some producers also keep a file of spouses and children's names. Sending a thank-you note is a nice gesture, as is dropping by a customer's operation to see how the bull is doing.

**Promotion of Bulls:** Advertise in association publications, local farm papers, and even local newspapers to attract buyers. Radio and television are certainly another option. Any advertisement should get attention, have a provocative beginning, then backtrack and tell why the cattle will perform. Be sure to state your name or farm name, address, day and evening phone numbers and the types and ages of bulls for sale. Breed organizations offer advice or services in this area. Expert auction businesses are also a valuable source of information.

Get involved in farm and livestock organizations in the community. People like to deal with people they know and respect. Invite 4-H and FFA groups to the farm. Farm leaders help sell cattle and youngsters and parents are potential customers.

**Buying a Bull:** Many factors must be considered before purchasing a bull. Are they a reputable breeder? Have the agreed-on health tests been run? Does the bull have the conformation and performance needed? Have the necessary vaccinations been completed on time? Request the health and information papers at the time of accepting the bull. The elimination of possible areas of contention can prevent unsatisfactory purchases and decrease returns.

As a means of controlling disease, only virgin bulls should be introduced into a herd. Testing for brucellosis and tuberculosis before purchase should be routine. Trichomoniasis is more prevalent in older bulls because of crypt development as bulls age. However, some young bulls have tested positive.

The physical examination of a bull is much more than just a "semen check". The veterinarian should emphasize the importance of "physical soundness" as well as semen quality. Breeding soundness examinations should be recommended annually and should be required if a bull is being used in a single sire mating program. The examination is especially important for bulls

older than 5 years. Some bulls may take considerable time to recover from this handling, even up to several days.

## **THE LEGAL ASPECTS OF SELLING/BUYING A BULL**

Most seedstock breeders have at some time sold nonfertile or subfertile bulls. A reputable breeder will strive to make a quick adjustment for a defective or unsatisfactory animal. Many breeders rely on a veterinarian's evaluation of the bull's fertility or defectiveness, following a complaint, to determine if an animal is satisfactory instead of insisting on a trial breeding period at their location.

Examples of adjustments made for an infertile or defective bulls includes (1) refunding the purchase price to the buyer in exchange for the bull, (2) having the buyer sell the bull at market with a refund of the difference between market and purchase price, (3) replacing the sterile bull, or (4) giving credit toward a future purchase.

Breeding cattle are usually sold by one of two methods: Auction or private treaty. Private treaty sales done with a handshake can be offer difficulty in determining if there is a warranty or the extent of the warranty. Most registered cattle auctions make available a catalog that includes the individual information on the cattle to be sold as well as the terms, warranties, and condition of the sale.

This type of warranty provides little protection to a buyer. Courts have held that anywhere from 10-50% conception rate on females exposed to a bull will qualify him as a breeder. Furthermore, the current breeding season may have passed by the time a buyer determines a bull is sterile, returns him to the seller for 6 months, and receives an adjustment. A buyer of a problem bull from a seller who is unwilling to make an adequate adjustment may be farther ahead by selling the bull and purchasing a substitute from another breeder.

Buying a bull that can cause conception in a cow naturally will not conclusively guarantee that the bull's semen is capable of being frozen and can be successfully utilized in an artificial insemination program. Breeders buying bulls to collect semen are encouraged to request a written warranty from the seller that the semen is guaranteed to meet specific quality standards.

A buyer may purchase a bull without taking immediate delivery. The possibility of an animal dying or becoming disabled between time of sale and delivery can occur. Risk of loss usually transfers from seller to buyer when the seller has completed all of the agreed upon responsibilities and the animal is ready for delivery. These responsibilities could include obtaining necessary health certificates, trimming feet, and sorting the animal from the herd. Risk of loss can be allocated in a written contract, reducing or avoiding disputes.

Multi-ownership contracts should address responsibility for care and boarding expenses, when each owner will have possession; any limitations on the number of females to be serviced; an allocation of income from semen sales; and insurance provisions. Buyers of a partial possessory interest or only a semen interest should consider having an equal voice in the management of the bull or interest; otherwise the transaction may violate security laws.

## EPD's Expected Progeny Difference

**What are EPD's?** Expected Progeny Difference is used to estimate how future progeny of a bull will compare to other bulls within a breed. Suppose bull A has an EPD value of +35 lbs for 205-day weaning weight and bull B of the same breed has an EPD of +10 lbs. If these two bulls are mated to a comparable group of cows, the average 205-day weaning weight of calves from bull A would be 25 lbs heavier than the calves from bull B. The 25 lbs is the difference between the two EPD values (35-10=25)

Bull	EPD, lb.	Weaning Weight
A	+35	585
B	+10	560
Difference	25	25

EPD values replace and go beyond estimated breeding values (EBV) and contemporary group ratios. While EBV values and contemporary group ratios have and continue to be useful to purebred breeders for within-herd selection, their value to commercial bull buyers is somewhat limited. The biggest problem with EBVs and contemporary group ratios is that a ratio of 105 for weaning weight for a bull from one herd is not the same for a bull with 105 from another herd.

**Accuracy (ACC):** Every EPD value on a bull has an accompanying accuracy (ACC). The ACC value tells how reliable the EPD value is. The following are considered low, medium and high accuracy values:

Accuracy Range	Meaning	Consideration
.10-.30	Low accuracy, little information available	Limit use
.40-.70	Moderate accuracy information on 10-20 progeny	Moderate use
.70-.99	High accuracy, bull	Extensive use

### more than 20 progeny

Accuracy values should not necessarily be used in selecting bulls but rather tell the producer how extensively to use the bull in the herd.

**What EPD's Are Not:** EPD values are not an absolute guarantee of how calves from a particular bull are going to perform. Beef performance traits are about 20 to 30% heritable. This means that 70 to 80 percent of all the variation seen in calf performance is environmental in origin. Also, a calf only receives half their genes from the bull.

EPD values for a given bull change every year. The EPD of a bull with a high ACC will change very little while a bull with a low ACC might change quite a bit. It is therefore important to have a current sire summary in which the bulls are registered.

1. When comparing two bulls, look only at their EPD difference. Only the difference is relevant, not the absolute values themselves.
2. Within one year, a bull's EPD will be out of date and will not be relevant in making comparisons with the next year's crop of yearling bulls.
3. Check in the breed sire summary to determine what the breed averages for various traits are. It is unlikely the breed average for a trait is zero.
4. EPD values are not directly comparable across breeds. This is probably one of the biggest sources of frustration to commercial bull buyers. Previous use of bulls with known EPDs from different breeds of bulls in your herd is the only way that you have of assessing how new bulls may compare in terms of progeny performance.

**How To Use EPD's:** An example of the tradeoff made by two different commercial cow-calf producers (A and B) when searching for their next bull are summarized in the following 2 tables. The tradeoffs and final bull choices were made by matching EPD values with production objectives.

Producer A	Objectives Minimize calving difficulty in first calf heifers, while maintaining growth to weaning
B	Increase milking ability in replacement females and post weaning gain in all calves.

◆The following is a list of bulls being considered by the producers to satisfy their breeding objectives.

#### EPDs

Bull	Birth	Weaning	Yearling	Milk
1	+5.2	+25.4	45.3	+10.2
2	+1.2	+27.3	+35.6	-3.2
3	+2.3	+18.3	+35.1	+2.3
Breed Average	+2.3	+26.2	+39.3	+1.5

**Producers A choose Bull 2:** Bull 2 is slightly below his breed average for birth weight which would minimize the potential for calving difficulties. Bull 2 is just about average for weaning weight which satisfies the objective of maintaining good growth to weaning

**Producer B choose Bull 1:** Bull 1 increases milking ability and postweaning gain. However, producer B will only use this bull on mature cows because of the high birth weight EPD.

## USING SALE CATALOGS, SIRE SUMMARIES AND EPD'S TO SELECT BULLS

The amount of performance information printed in sale catalogs varies for sale to sale. Some breeders supply no performance data. Others provide individual performance data such as weights and weight ratios. Still others include EPDs on sires and dams. A number of breeders are now supplying EPDs on the sale bulls themselves.

If you have bought bulls from a particular breeder over a long period of time, and if that breeder has a well-defined, consistent program, weights and ratios may be all that you need to identify bulls that are right for you. If you are shopping around, EPDs account for genetic differences among herds. EPDs on bulls in one sale can be directly compared with EPDs on bulls in another sale.

**Pedigree EPD's For a Young Bull:** Many catalogs contain no EPD data at all, but you can often find the EPDs of the sire in the most recent sire summary for the breed. In this case:

$$EPD^{\text{Young Bull}} = 1/2 EPD^{\text{Sire}}$$

You can improve on this a good deal if the maternal grandsire (MGS) and maternal great-grand sire (MGGS) is also listed in the sire summary. In this case:

$$EPD^{\text{Young Bull}} = 1/2 EPD^{\text{Sire}} + 1/4 EPD^{\text{MGS}}$$

and

$$EPD^{\text{Young Bull}} = 1/2 EPD^{\text{Sire}} + 1/4 EPD^{\text{MGS}} + 1/8 EPD^{\text{MGGS}}$$

Some sale catalogs supply dam's EPDs. Then:

$$EPD^{\text{Young Bull}} = 1/2 EPD^{\text{Sire}} + 1/2 EPD^{\text{Dam}}$$

If the dam's EPDs are available, do not use the maternal grandsire's EPDs because that information has already been included in the EPD of the dam. Note that the accuracy of the ancestors' EPDs has no bearing on how we calculate EPDs for young animals. The previous formulas give us the best estimates regardless of accuracy, although it might be better if the EPDs we work from have high accuracy.

The EPDs calculated above are estimates. They don't account for a young bull's own performance. Individual performance can be combined with pedigree estimates in a subjective fashion to compare bulls within the same herd. For example, if two bulls from the same herd had similar pedigree EPDs, you could then rank them according to their individual performance records. Use only the Pedigree EPDs to compare bulls from different herds.

## SIRE SELECTION

**Frame:** Frame is highly heritable (50%) and should be considered in selecting herd bulls because it is a measure of mature size. The present demand is for 4 to 6 frame market cattle, so design your program to produce market steers in this range. The following are height measurements for steers taken over the shoulder at the fifth rib or elbow.

Potential Market Weight (lbs.)

FS 1	FS 2	FS 3	FS 4	FS 5	FS 6	FS
750	851	951	1051	1151	1251	7+1351
to	to	to	to	to	to	and
850	950	1050	1150	1250	1350	Above

Frame Score (inches)

Age in Months	1	2	3	4	5	6	7
5	32	34	36	38	40	42	44
6	33	35	37	39	41	43	45
7	34	36	38	40	42	44	46
8	35	37	39	41	43	45	47
9	36	38	40	42	44	46	48
10	37	39	41	43	45	47	49
11	38	40	42	44	46	48	50
12	39	41	43	45	47	49	51
13	39.75	41.75	43.75	45.75	47.75	49.75	51.75
14	40.5	42.5	44.5	46.5	48.5	50.5	52.5
15	41	43	45	47	49	51	53

The following are bull height measurements take at the hip:

Bull Hip Height (Inches) and Frame Score at Various Months of Age

Age	1	2	3	4	5	6	7	8	9
5	33.5	35.5	37.5	39.5	41.6	43.6	45.6	47.7	49.7
6	34.8	36.8	38.8	40.8	42.9	44.9	46.9	48.9	51.0
7	36.0	38.0	40.0	42.1	44.1	46.1	48.1	50.1	52.2
8	37.2	39.2	41.2	43.2	45.2	47.2	49.3	51.3	53.3
9	38.2	40.2	42.3	44.3	46.3	48.3	50.3	52.3	54.3
10	39.2	41.2	43.3	45.3	47.3	49.3	51.3	53.3	55.3
11	40.2	42.2	44.2	46.2	48.2	50.2	52.2	54.2	56.2
12	41.0	43.0	45.0	47.0	49.0	51.0	53.0	55.0	57.0
13	41.8	43.8	45.8	47.8	49.8	51.8	52.8	55.8	57.7
14	42.5	44.5	46.5	48.5	50.4	52.4	54.4	56.4	58.4
15	43.1	45.1	47.1	49.1	51.1	53.0	55.0	57.0	59.0

16	43.6	45.6	47.6	49.6	51.6	53.6	55.6	57.6	59.5
17	44.1	46.1	48.1	50.1	52.0	54.0	56.0	58.0	60.0
18	44.5	46.5	48.5	50.5	52.4	54.4	56.4	58.4	60.3
19	44.9	46.8	48.8	50.8	52.7	54.7	56.7	58.7	60.6
20	45.1	47.1	49.1	51.0	53.0	55.0	56.9	58.9	60.9
21	45.3	47.3	49.2	51.2	53.2	55.1	57.1	59.1	61.0

**Scrotal Circumference:** Scrotal circumference can be an important tool for bull selection. As scrotal circumference increases, age at puberty in bulls and heifers decreases. There is a high correlation (.81) between scrotal circumference and sperm output. Others have found that as scrotal circumference increases, motility, percent normal sperm, semen volume, semen concentration and percent abnormal sperm decreases. Bulls with larger scrotums not only have to potential to breed more cows but breed more cows early in the breeding season. The following are some data on scrotal circumference of bulls by breed and age:

Scrotal Circumference (in cm) of various breeds compared by age

Age (mo)	Angus	Charolais	Hereford	Hereford	Simmental	Limousin
<14	34.8 (125) <sup>b</sup>	32.6 (240)	33.0 (244)	34.8 (15)	33.4 (65)	34.0 (68)
14-17	35.9 (73)	35.4 (294)	32.2 (44)	34.2 (75)	36.5 (9)	31.7 (13)
17-20	36.6 (271)	34.5 (226)	34.1 (62)	34.9 (181)	–	32.0 (3)
20-23	36.9 (125)	34.6 (66)	36.2 (9)	34.9 (71)	–	–
23-26	36.7 (161)	34.6 (55)	33.4 (79)	34.8 (57)	36.0 (2)	–
26-30	36.3 (9)	36.2 (19)	33.8 (10)	35.0 (15)	–	–
30-36	36.6 (68)	37.1 (29)	35.2 (87)	35.6 (20)	–	–

**Ultrasound Measurements:** Ultrasound measurements are an emerging technology in bull selection. The procedure is harmless to the animal and allows improvements in carcass traits without slaughtering the animal. The basic principle of ultrasound is of an echo rebounding from soft tissues. Once the transducer is placed between the 12th and 13th rib, the ultrasound equipment transfers electrical pulses to high frequency sound waves, hence the name ultrasound.

These waves travel into the body and are reflected from boundaries between different densities of tissue. The image which the ultrasound waves transmit back to the transducer and equipment is projected onto a screen and appropriate measurements are made. Backfat thickness may be measured directly from the screen. Lion-eye area can be traced from the image on the screen but this can be somewhat difficult to do because of the relative large loin-eye of beef cattle. Ultrasound measurements are done at approximately a year of age.

## BREEDING SOUNDNESS EXAMINATION

Approximately 11% of yearling bulls are either sterile or subfertile at 12-14 months of age. Breeding soundness examinations show that 4% of proven sires develop fertility problems between breeding seasons. An average of 15% of the beef bulls used are potentially unsatisfactory breeders because of physical or behavior problems.

The Breeding Soundness Examination (BSE) has two main objectives. These are (1) to eliminate bulls that have low potential for settling females and (2) as a selection tool for improving reproductive efficiency of bulls and heifers.

◆ The following values are used in a breeding soundness examination:

Category	Threshold
Scrotal Circumference	30 cm at $\leq 15$ months of age
	31 cm at $> 15 \leq 18$ months of age
	32 cm at $> 18 \leq 21$ months of age
	33 cm at $> 21 \leq 24$ months of age
	34 cm at $> 24$ months of age
Sperm Morphology	$\geq 60\%$ normal sperm
Sperm Motility	30% individual motility and/or "fair" gross motility

Bulls which do not equal or exceed these thresholds will either be classified at Unsatisfactory Potential Breeders or they will have their Classification Deferred. Placement in the latter category will usually imply that a retest is intended. Bulls should be reevaluated after suitable period, usually 6 to 8 weeks.

Most beef bulls are "collected" using an electro-ejaculator. Different breeds respond differently to electro-ejaculation. Angus bulls require less electric stimulation to produce ejaculation than do Herefords. Charolais and Simmental bulls require ejaculation devices capable of high levels of stimulation. Age is also a factor: older bulls usually require greater stimulation than younger bulls.

## PHYSICAL EXAM



◆ The physical may include taking the temperature, heart rate, and examining the mouth, eyes and ears before doing a rectal exam. The penis and prepuce are important parts of the delivery system and while it is possible for the operator to examine this during ejaculation, this cannot be relied on all the time.

◆ The evaluator will want to observe the bulls in a near normal situation such as a corral or pasture. Look for abnormalities in locomotion, general appearance and condition. Observe them walking even if is only a short distance. A bull that is particularly straight in his hind legs, post-legged, is more likely to become stifled when trying to breed a cow. Checking the permanent identification (tattoo) should not be overlooked.

### SERVING CAPACITY

◆ The breeding soundness exam provides a measure of fertility and structural fitness. It does not reveal anything regarding serving capacity, which is a term used to describe sex drive and mating ability. Previous research has shown that single-sire matings with bulls of similar scrotal circumference and seminal traits often result in a wide variation in pregnancy rates. These differences in sire fertility may be explained by differences in serving capacity. It should be pointed out that desire to breed a cow (libido) and aggressive behavior are not correlated traits.

Bulls with high serving capacity not only have the ability to serve more cows in a breeding season but serve more cows early in the breeding season as the following data demonstrates:

#### Effect of Bull Serving Capacity on Heifer Fertility

◆ Serving Capacity	No. of Bulls	Avg. % Pregnant First Cycle	Avg. % Pregnant In 70 days
◆ Low	6	21%	33%
◆ Medium	10	60%	92%
◆ High	7	73%	97%

\* Each bull was exposed to 40 heifers for 70 days.

Serving capacity is measured by exposing 5 prestimulated bulls for a 20 minute period to 4 nonestrous heifers or cows which are restrained in serving crates in a dirt lot. The number of services or matings that each bull successfully completes is classified as: Low - 0 to 1 service; Medium - 2 to 3 services; or High - 4 or more services. This process is not commonly done in the United States.

Serving capacity score may be inherited and related. The following is some limited data in comparing 4 sires and the average serving capacity of their sons:

### Effect of sire line on serving capacity

Sire	A	B	C	D
No. of Sons	42	11	9	8
Serving Capacity Score	◆	◆	◆	◆
Test 1	4.2	2.4	3.5	.6
Test 2	4.7	2.5	3.2	1.2

### GROWING OUT YOUNG BULLS

Puberty is defined in bulls as the period when a collection of semen can be obtained with a concentration of 50 million viable sperm cells with a progressive motility of greater than 10%. Probably the single best indicator a bull's likelihood of reaching puberty at a young age is his scrotal circumference.

Young bulls should attain 1/2 their mature body weight by 14-15 months of age. Extremely low levels of energy intake early in life delays the onset of puberty. Feeding excess energy may reduce both semen quality and serving capacity. This is thought to be due to excess fat deposition in the scrotum, insulating the testes and increasing testicular temperature.

Vaccination of young bulls at 6 months of age and again as yearlings for IBR, BVD, PI-3, and the Clostridial group are advisable. They should be treated for grubs and lice and dewormed during the fall. Bulls should have opportunity to exercise and not be allowed to become obese.

### THE PREBREEDING SEASON

Because spermatogenesis requires 60 days for completion, this is the minimum period allocated for preparing bulls for the breeding season and 90 days would be better. Bulls that will be working together should be exposed to each other prior to the breeding season to establish the "pecking order". Bulls should be able to get out of the wind of possible spring blizzards to avoid possible frostbite of the scrotum.

Yearling bulls on performance tests have usually been on high energy diets. These bull need to be "let down" from the time they are purchased until they are turned out with cows. A mistake made occasionally is to turn the bulls that have been on a high grain ration out on very lush pasture or place them on straight high-quality alfalfa hay. This can lead to digestive upsets or imbalances, thus leading to potential reproductive problems. It would be better to adapt the bull to these conditions over a 7 to 10 day period.

The newly purchased bull should be vaccinated against IBR, BVD, PI3, hemophilus somnus, leptospirosis and vibriosis. It is also a good idea to immunize him with a 7-way clostridial bacterin. If the bull has never been immunized, a second round of booster shots is recommended 3 weeks after the first round. The vaccination program, parasite control program, the breeding soundness examination and possible hoof trimming should be conducted at least 30 days prior to the breeding program.

## THE BREEDING SEASON

Good bull managers observe the bulls during the breeding season. Early detection of injured bulls is required for getting cows bred early in the breeding season.

Moving from a 90 day breeding season to a 45 or 60 day breeding season in one year can be risky if open cows is of concern. Producers should probably leave bulls with the cows at least 10 days to 2 weeks past the optimum breeding season. Producers should only go with a rigid 45 or 60 day breeding season if they feel there will only be a few open cows.

During the summer, face and horn fly control should be practiced. Horn flies in particular concentrate in large number on bulls. Never use Dursban-44 on bulls, as it leads to a fatal and irreversible degeneration of the spinal cord.

**MULTIPLE SIRE:** A statement often made is, "I'm going to turn my yearling bull out with the old bull so he can learn the trade." The result of social dominance will be that the yearling bull will cover very few cows of the herd. This can be a serious problem if the older, more dominant bull is subfertile and can be waste of the genetic potential of the young bull. To keep social dominance problems to a minimum, run bulls of similar age and size together. The presence or absence of horns also has an effect on social dominance. The following trial demonstrates the effect of running bulls of different ages on the ability to breed cows in a multiple sire system.

Reproductive Performance of 3 or 4 Bulls Exposed to a Group of Cows Over a 5 year period

-----% of calves sired by each bull-----

Bull	Year 1	Year 2	Year 3	Year 4	Year 5
A	70.4 (10) <sup>a</sup>	76.0 (11)	12.2 (12)	0 <sup>b</sup>	0 <sup>b</sup>
B	16.7 (4)	18.0 (5)	63.4 (6)	72.5 (7)	25.1 (8)
C	7.4 (3)	6.0 (4)	12.2 (5)	12.5 (6)	62.5 (7)
D	5.5 (2)	0 <sup>b</sup> (3)	12.2 (4)	15.0 (5)	12.4 (6)

<sup>a</sup>Age of bulls in years

<sup>b</sup>Bulls absent from the herd

**Single Sires:** Yearling bulls should not be left with the cow herd for over 60 days. Longer periods of time will result in lowered condition scores, impaired growth and higher incidence of injury.

**Rotating Bulls:** Turn the older bulls out for the first 3 to 5 weeks to accomplish the heavy work and let the yearling clean up the repeat breeders or late cycling cows. If yearling bulls are the sole source of sires, rotate them every 2-3 weeks.

## POST-BREEDING MANAGEMENT

◆ It is not uncommon for yearling bulls to lose from 100 to 300 lbs during their first breeding season. In addition to gaining this weight back, the bull must gain approximately 400 lbs. so he weighs 75% of his mature weight by the time he is 2 years old. A gain of approximately 2 lbs per day should be adequate during the 9 months before the next breeding season. Producers should strive for a 6-7 condition score for 2-year-olds prior to breeding. The following table is for condition scoring yearling bulls after the breeding.

### Condition Scoring System for Yearling Bulls

Score	◆	◆
1	No fat anywhere. Very sucked up in flanks. Complete skeleton is visible. Muscles atrophy is evident. Winter survival doubtful.	600-800 lb. 9 mo. ADG=2.6 6 mo. ADG=3.9
2	Very thin. Slight amount of shoulder and back fat. Some muscle atrophy. Hooks very prominent. Sucked up in flanks.	500-700 lb. 9 mo. ADG=2.2 6 mo. ADG=3.3
3	Thin over backbone with highly visible shoulder muscle movement. Slight amount of shoulder and rib fat.	400-600 lb. 9 mo. ADG=1.9 6 mo. ADG=2.8
4	Thin looking, some fat over shoulder and front ribs. Backbone visible, but not prominent.	300-500 lb. 9 mo. ADG=1.5 6 mo. ADG=2.2
5	Spongy fat over front rib and back. Backbone is slightly evident. Slightly smooth shoulder. Hooks blend in with topline.	200-400 lb. 9 mo. ADG=1.1 6 mo. ADG=1.7
6	Spongy fat over all ribs, hooks and pins. Shoulder muscle movement is slightly visible. Fat deposits appear in brisket.	100-300 lb. 9 mo. ADG=.8 6 mo. ADG=1.1
7	Spongy fat all over ribs, smooth back, fat very evident tailhead and in brisket and shoulder.	50-150 lb. 9 mo. ADG=.4

		6 Mo. ADG=.6
8	Excess condition. Large fat deposits over ribs, back, hooks, pins, brisket, shoulder, and scrotal region. Some reproductive impairment.	0-50 lb. Best of convert fat to muscle
9	Extremely fat all over and has appearance of fat feedlot animal. This much condition would impair reproductive performance.	0 to some weight loss. Best to convert fat to muscle.