

**THE TEXAS
HERD SIRE
EVALUATION
PROGRAM**

TEXAS A&M UNIVERSITY
TEXAS AGRICULTURAL EXTENSION SERVICE
J. E. HUTCHISON, DIRECTOR, COLLEGE STATION, TEXAS

[Blank Page in Original Bulletin]

THE TEXAS HERD SIRE EVALUATION PROGRAM

L. A. Maddox, Jr.
Extension Animal Husbandman
Texas A&M University



CONTENTS

General Information	3
Reproductive Ability	5
Growth, Fattening and Slaughter	7
Carcass Information	11
Genetic Defects	13
Definition	14

Name _____

Sire name _____

Address _____

No. _____

Reproductive ability

Acceptable

Score

Natural service

Cows conceived in 90 days _____ 25 or more _____

Services per conception _____ 1.8 or less _____

Semen quality for A. I.

Semen recovery rate _____ 60% or more _____

Services per conception _____ 2.0 or less _____

40 male calves

Growing and fattening

205-day weights _____ 480 lbs. or more _____

Stocker gain _____ 1.0 lbs. or more _____

Feedlot gain #1 _____ 3.0 lbs. or more _____

Feedlot gain #2 _____ 2.75 lbs. or more _____

Feed per lb. gain** _____ 8.0 lbs. or less _____

Weight per day of age #1 _____ 2.4 lbs. or more _____

Weight per day of age #2 _____ 2.75 lbs. or more _____

Carcass information

Carcass weight/day of age #1 _____ 1.35 lbs. or more _____

Carcass weight/day of age #2 _____ 1.55 lbs. or more _____

Marbling score _____ small minus or more _____

or
Shear force 1/2" cores _____ 10 lbs. or less _____

Cutability grade _____ 2.0 or less _____

or
Yield of roast & steak meat _____ 52.3% or more _____

Breed or breeding
of dams _____

40 heifer calves

Genetic defect

Average age when bred _____ *15 to 21 months _____

Percent calving in 90 days _____ *80% or more _____

205-day weights _____ *480 lbs. or more _____

Number of normal calves _____ 32 or more _____

Percent of normal calves _____ 100% _____

*Should not disqualify

**Last 120 days

GENERAL INFORMATION

With the increasing use of production records and artificial insemination it is necessary for registered breeders and breed associations to enlarge conventional methods of sire evaluation to include points that are relevant to the commercial cow-calf industry, the feeding industry, the meat packing industry, supermarkets and the housewife. Suggested traits to measure are:

- Reproductive ability
- Mothering ability
- Growth rate
- Efficiency of gain
- Carcass cutability
- Carcass quality
- Genetic defects

A general plan for measuring the above traits follows:

- Produce semen capable of being frozen and stored for artificial breeding.
- Produce 25 calves by natural service in 90 days.
- Sire 80 calves with dams of known breeding for detailed testing.
- Record calving dates, weaning dates and weaning weights of the 80 calves.
- Retain heifer calves for future testing.
- Male calves at weaning time may:
 - Be placed on pasture or on a growing ration before going to a feedlot for fattening (Program #1).

or

— Go directly to a feedlot for fattening (Program #2).

- Fatten male calves in a feedlot for at least 130 days.
- Feed male calves to an average slaughter weight of 1,000 pounds or more.
- Maintain complete records of weight gain and feed consumption during the last 120 days of the feeding period.
- Measure and record carcass cutability and meat quality.
- Heifer calves resulting from the original mating (at least 32) should at breeding age (15 to 21 months) be mated to their sire.
- Maintain records of normal birth, abortions and still births resulting from the sire-daughter matings.
- Keep a permanent record of this evaluation program on Form 1.
- The acceptable level suggested for each trait (or the acceptable level you establish for your herd) should:
 - Be considered as desired minimum levels and the information gained in the evaluation program used as a true measure of the herd sire's breeding value.

or

— Be considered an independent culling level and if sires fail to meet the accepted level, disqualify them, except on traits marked with an asterik.

**THE TEXAS HERD SIRE EVALUATION PROGRAM
SEMEN QUALITY AND REPRODUCTION RECORD**

Name _____ Sire name _____

Address _____ No. _____

RECOVERY RATE OF FROZEN SEMEN

Date collected _____ 19____ Concentration per ampule _____

Recovery rate 6 months after freezing _____ %

Date _____ 19____ Signature _____

BREEDING AND CALVING RECORD

Artificial insemination			Natural service		
Cow no.	Breeding dates	Calving date	Cow no.	Breeding dates	Calving date
Total			Total		
Services per conception			Services per conception		

REPRODUCTIVE ABILITY

A measurement of the herd bull's reproductive ability in natural service and the ability of the semen to be frozen, stored, recovered and used successfully artificially is extremely important to the purebred industry. The bull's reproductive ability tests are as follows:

- The bull should cause 25 or more cows to conceive within a 90-day period when used in a pasture breeding program.
- The bull should cause 25 or more cows to conceive with 1.8 services per conception or less when used in a hand breeding situation.
- Semen should be collected, extended and frozen. After being stored for a period of 6 months it should show a recovery rate of at least 60 percent.
- When used artificially this semen should cause conception at the rate of one conception for two services or less.
- Conception will be verified by birth dates of the calves.
- Maintain details of this part of the sire evaluation program as a permanent record on Form 2.

THE TEXAS HERD SIRE EVALUATION PROGRAM GROWTH AND FATTENING RECORD — PROGRAM #1

Name _____ Sire's name _____ No. _____

Address _____ Date first calf born _____ Date last calf slaughtered _____

Herd no.	Dam	Date of birth	Weaning data			Stocker data			Feedlot data					
			Age in days	Actual weight	Ad-justed weight	Days on test	Final weight	Av. daily gain	Initial weight	Final weight	Total gain	Days on test	Av. daily gain	Wt./ day of age

Breed of dams
if purebred

Breeding of dams
if crossbred

GROWTH, FATTENING AND SLAUGHTER

The ability of young cattle to grow and fatten rapidly and efficiently is important to the beef industry.

Program #1

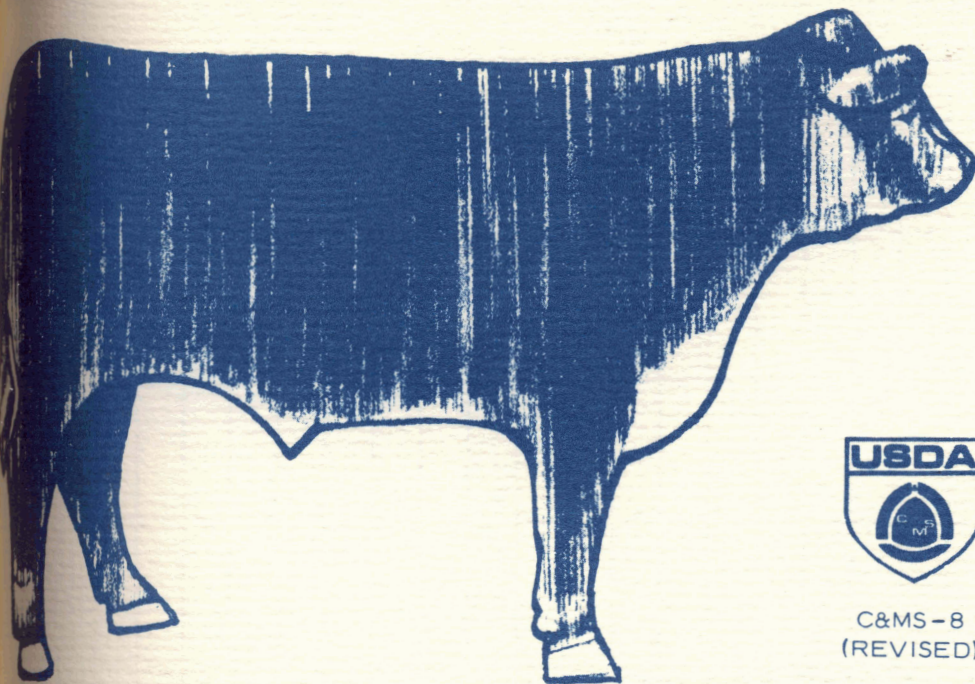
Growth and fattening program #1 is designed for breeders who wean average weight calves, place them on pasture or on a growing ration in the feedlot to make additional gain before they are placed in a feedlot for finishing. Forty steer calves by a herd sire should:

- Be surgically castrated and identified by tattoo, fire brand or freeze brand number. Dehorning is recommended.
- Have an average weaning weight adjusted to 205 days or 480 pounds or more.
- After weaning, be grown on grass or in a feedlot for 60 to 120 days gaining at least 1 pound per day.
- Be delivered to a feedlot for fattening before they are 1 year of age with an average weight of 750 pounds or less.
- Be initially weighed individually after they have been on feed for at least 10 days and at least 120 days before expected slaughter date.
- Be finally weighed individually at same time of day as the initial weights were taken.
- Deliver all steers at the same time to packing house where packer has agreed to maintain individual carcass identification.
- Make arrangements for USDA Meat Grading Service, under its Beef Carcass Evaluation Program, to obtain carcass evaluation data.
- Make all information on the growth and fattening period a permanent record on Form 3.

Program #2

Growth and fattening program #2 is designed for producers who wean heavy calves and place them directly in feedlots to be fattened for slaughter. To qualify under this program, cattle should weigh 1,004 pounds at 1 year of age. This is an average daily gain of 2.75 pounds for the animal's entire life or an average growth rate of nearly 85 pounds per month. Forty male calves by this herd sire should:

- Be identified by tattoo, fire brand or freeze brand number.
- Be weighed at weaning time and have these weights recorded.
- Be placed directly in a feedlot and fed for maximum growth immediately after weaning.
- Be changed from a growing ration to a fattening ration at the producer's discretion.
- Be initially weighed individually after they have been on feed for at least 10 days and at least 120 days before expected slaughter date.
- Be finally weighed individually at the same time of day as the initial weights were taken.
- Be delivered at the same time to a packing house where the packer has agreed to maintain individual carcass identification.
- Make arrangements for USDA Meat Grading Service, under its Beef Carcass Evaluation Program, to obtain carcass evaluation data.
- Make a permanent record on Form 4 of growth and fattening period information.



USDA'S BEEF CARCASS EVALUATION SERVICE



C&MS-8
(REVISED)

U. S. DEPARTMENT OF AGRICULTURE • CONSUMER AND MARKETING SERVICE • AUGUST 1966

To get Carcass Evaluation Service contact: Head, Livestock Division, Consumer and Marketing Services, USDA, Washington, D.C.; or, Federal Grader at plant where animals are to be slaughtered.

FORM LS-106
(3-1-66)

BEEF CARCASS EVALUATION REPORT

U. S. DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
LIVESTOCK DIVISION

USDA NO.	OTHER IDENTIFICATION	BREED (<i>As supplied by owner</i>)	MEAT GRADING CERTIFICATE NO.
----------	----------------------	---------------------------------------	------------------------------

NAME OF PRODUCER	NAME OF PACKER
------------------	----------------

1 QUALITY GRADE	A. CONFORMATION, MARBLING, AND MATURITY FACTORS												
	CONFORMATION	DEGREE OF MARBLING	MATURITY (APPROXIMATE AGE SHOWN) (<i>Circle one</i>)										
BY THIRDS			<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 25%;">A</td> <td style="text-align: center; width: 25%;">B</td> <td style="text-align: center; width: 25%;">C</td> <td style="text-align: center; width: 25%;">D</td> <td style="text-align: center; width: 25%;">E</td> </tr> <tr> <td style="text-align: center;"><i>(Under 30 mos.)</i></td> <td style="text-align: center;"><i>(30 to 48 mos.)</i></td> <td colspan="3" style="text-align: center;"><i>(Over 48 mos.)</i></td> </tr> </table>	A	B	C	D	E	<i>(Under 30 mos.)</i>	<i>(30 to 48 mos.)</i>	<i>(Over 48 mos.)</i>		
A	B	C	D	E									
<i>(Under 30 mos.)</i>	<i>(30 to 48 mos.)</i>	<i>(Over 48 mos.)</i>											

B. OTHER FACTORS						
TEXTURE OF MARBLING (<i>Check one</i>)						
<input type="checkbox"/> FINE		<input type="checkbox"/> MEDIUM		<input type="checkbox"/> COARSE		
COLOR OF LEAN (<i>Check one</i>)						
<input type="checkbox"/> VERY LIGHT CHERRY RED	<input type="checkbox"/> CHERRY RED	<input type="checkbox"/> SLIGHTLY DARK RED	<input type="checkbox"/> MODERATELY DARK RED	<input type="checkbox"/> DARK RED	<input type="checkbox"/> VERY DARK RED	<input type="checkbox"/> BLACK
FIRMNESS OF LEAN (<i>Check one</i>)						
<input type="checkbox"/> VERY FIRM	<input type="checkbox"/> FIRM	<input type="checkbox"/> MODERATELY FIRM	<input type="checkbox"/> SLIGHTLY SOFT	<input type="checkbox"/> SOFT	<input type="checkbox"/> VERY SOFT	<input type="checkbox"/> EXTREMELY SOFT
TEXTURE OF LEAN (<i>Check one</i>)						
<input type="checkbox"/> VERY FINE	<input type="checkbox"/> FINE	<input type="checkbox"/> MODERATELY FINE	<input type="checkbox"/> SLIGHTLY FINE	<input type="checkbox"/> SLIGHTLY COARSE	<input type="checkbox"/> COARSE	<input type="checkbox"/> VERY COARSE

2 YIELD GRADE	YIELD FACTORS				
	CARCASS WEIGHT (<i>From packer's hot wt. tag</i>)	FAT THICKNESS (<i>Inches, nearest 1/10 in.</i>)		RIB EYE AREA (<i>from Grid</i>)	KIDNEY, PELVIC AND HEART FAT (<i>As per- cent of carcass weight</i>)
BY TENTHS	LB.	IN. ACTUAL	IN. ADJUSTED	SQ. IN. BY TENTHS	PCT. ESTIMATED



(DATE)

(SIGNATURE OF GRADER)

CARCASS INFORMATION

Any sire evaluation program is incomplete without objective carcass measurements on a representative sample of his offspring. To qualify as an outstanding herd sire, records on forty male calves from this sire should:

- Have completed the 120 day official gain and feed conversion tests and average slaughter weight of 1,000 pounds or more.
- Have an average chilled carcass weight per day of age of 1.35 pounds for program #1 and 1.55 pounds for program #2.
- Have an average degree of marbling of "small amount." As an alternate to degrees of marbling a 1-inch steak from the twelfth rib after a 12-day aging period should be prepared by cooking to an internal temperature of 70 degrees C. Four 1/2-inch core samples from this steak must have an average Warner-Bratzler shear force measurement not to exceed 10 pounds per square inch. The lean must be a light cherry red in color and of fine texture.
- Have an average cutability grade of 2.0 or better or yield at least 52.3 percent of carcass weight in boneless, closely-trimmed steak and roast meat.
- Be accounted for at the end of the test. Explanation of cause of cattle removal that did not finish test should be presented with other records.
- Be recorded permanently on Form 5 and USDA Form LS-106, (see pages 9 and 10).

GENETIC DEFECTS

Before a bull can be considered an "outstanding herd sire," it is necessary to determine the presence of any genetic defects. While testing for these defects, the ability of daughters of the bull being tested can give an indication of their reproduction ability.

- Grow and develop forty heifer calves for replacement heifers.
- Start breeding of heifers so that calving will occur between 24 and 30 months of age.
- Breed heifers to their own sire artificially or by natural service.
- Have weaning weights at 480 pounds or more at 205 days of age.
- Eighty percent of the heifers should conceive in the first 90 days of the breeding season.
- Producers need records on at least 32 births resulting from these matings.
- Any heifer dying while giving birth must be autopsied by a veterinarian to determine if the fetus is normal.
- One hundred percent of the calves must be normal and free from known genetic defects.
- Record the results of this part of the "Texas Herd Sire Evaluation Program" on Form 6.

DEFINITIONS

205-DAY WEIGHT = $\frac{\text{Actual weight} - 70}{\text{Age in days}} \times 205 + 70$

MATURE EQUIVALENT — Correct 205-day weight for age of dam with the following adjustments:

Age of dam	Correction Factors	
	British breeds	Other breeds and crosses
2	1.15	1.06
3	1.10	1.03
4	1.05	1.02
5 to 10	1.00	1.00
11	1.05	1.02
12 or older	1.05	1.04

INITIAL WEIGHT — Weights taken after at least 10 days in the feedlot without any shrink.

FEEDLOT WEIGHT — Weight taken at the feedlot at the same time of day as the initial weight.

SLAUGHTER WEIGHT — Weight normally recorded by slaughter plants while carcasses are still warm.

CHILLED CARCASS WEIGHT — Weight after carcass has been chilled. If weight not available, 98 percent of warm carcass weight will be used.

LIVE WEIGHT PER DAY OF AGE — Weight of cattle (usually at feedlot) divided by age in days.

CARCASS WEIGHT PER DAY OF AGE — Chilled carcass weight divided by age in days.

SUGGESTED READINGS

B-956 Your Cow and Calf Business

B-909 Breeding Programs for
Registered Beef Herds

B-1043 Feeding the Cow and Calf

B-1044 Nutrient Requirements of the
Cow and Calf

B-174 Minerals for Beef Cattle

B-792 Creep Feeding Beef Calves

B-1098 Healthy Stocker and Feeder Calves

B-924 Testing Bulls for Fertility

B-1077 Determining Pregnancy in Cattle

MP-947 Costs and Returns of
Cow-Calf Operations

MP-956 Keys to Profitable
Cow-Calf Operations

[Blank Page in Original Bulletin]

[Blank Page in Original Bulletin]

Cooperative Extension Work in Agriculture and Home Economics, Texas A&M University and the United States Department of Agriculture cooperating. Distributed in futherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.

20M—4-70

AS 1-