Technical **Report** TR01-3

Agricultural Experiment Station | Department of Animal Sciences | San Juan Basin Research Center | March 2001

52nd Annual Beef Cattle Improvement Report and Sale Data

Four Corners BCIA Bull Sale and Colorado State University Research Report Saturday, April 7, 2001

Beth LaShell

Colorado State University

Knowledge to Go Places

SATELLITE PREVIEW
------THURSDAY, APRIL 5, 2001------

8:00- 8:30 p.m. Satellite preview of sale bulls & heifers - coordinates: G3, channel 18.

------PRE-SALE SOCIAL- FRIDAY, APRIL 6, 2001------

6:00-8:30 p.m. Cattleman's Pre-Sale Social. Fort Lewis College, College Union Ballroom, Durango. *(See map on page 40)* Sponsored by ABS Global Inc. Literature and beef provided by Colorado Beef Council

AUCTION
------SATURDAY, APRIL 7, 2001------

San Juan Basin Research Center, Hesperus, CO, 16 miles southwest of Durango on Colorado State Highway 140 (40 miles north of Farmington).

9:00 a.m. Display of sale bulls & heifers. Coffee and donuts sponsored by Sky Ute Casino

11:30 a.m. Lunch served by the Marvel Grange and sponsored by Basin Co-op

Noon Satellite preview of sale bulls & heifers - coordinates: G3, channel 18

12:30 p.m. Auctioneer - John Korrey, Iliff, CO (970-522-4906)
Auction of approximately 86 performance tested bulls & heifers from the herds of the Four Corners BCIA cooperators.

------GENERAL INFORMATION------

Satellite Transmission. The 52nd Annual Four Corners Bull & Heifer Sale will be broadcast via Superior Productions satellite (coordinates: G3, channel 18). Buyers may choose to attend the sale or sit in the comfort of their own home and buy bulls simply by phoning one of the sale day phone numbers available to pre-registered buyers. The bulls and heifers will be taped on video prior to the sale and their pictures will be broadcast simultaneously as they sell with the sound being provided live from the sale site via telephone link. A preview of the bulls and heifers may be seen April 5th at 8:00 p.m. MST and again on April 7 at noon MST followed by the sale at 12:30 p.m. MST. Persons interested in purchasing bulls and/or heifers via satellite need to call Beth LaShell at (888) 598-9775 to register for a buyer number. You must have a buyer number to purchase bulls and/or heifers over the satellite. If you do not have a satellite, try contacting a neighbor or your local Extension agent to see if they will let you view the sale.

Terms of Sale. All lots will be sold to the highest bidder. The Auctioneer will settle any disputes as to bids by declaring all bids off and reselling the animals in question. Animals sold in this sale will be fed and cared for free of charge for twenty-four hours following the sale, but at the owner's risk, and will be turned over to the purchaser or loaded for shipment as he may direct. **Any bull left for more than 24 hours must have insurance (see next section).** A certificate of transfer and bill of sale will be furnished for each animal sold, and a registration certificate will be furnished on all registered animals by the Consignor. The Purchaser must present a bill of sale at the loading pens prior to removing the animal(s) from the premises. The terms of sale are cash and all settlements must be made at the close of the auction unless other arrangements have been made prior to the sale.

Delivery & Insurance. Free delivery will be provided to central locations within a 500 mile radius for persons that purchase 3 or more bulls or $3000 volume. Delivery can be arranged at the time of settlement for all bulls. Bulls &/or heifers selling to Canada or Mexico will be delivered to the nearest port of entry at the border. Expenses and transportation beyond the border will be the responsibility of the buyer. All bulls & heifers are cleared for interstate shipment and have been tested in accordance with rules and regulations approved by the Animal Health Division (USDA) and the State of Colorado as a certified brucellosis and accredited tuberculosis free herd. **Buyers requesting to have their bulls &/or heifers delivered must purchase low cost insurance(1.5% of the purchase price for 15 days coverage) at the time of settlement to protect the hauler.** The same insurance is also available to all other buyers upon request and for longer coverage periods if so desired.

Breeders Guarantee. All sale bulls are guaranteed to be breeders. All bulls are subjected to a breeding soundness exam (BSE). All bulls must meet the minimum standards set by the Four Corners BCIA. Only bulls that meet this criteria are offered for sale. If for some unforseen reason a bull should prove to be a non-breeder, it should be brought to the attention of the test personnel and/or seller within 90 days after the sale. If an adjustment is to be made, the Four Corners BCIA Cooperator must be provided with a certificate from a veterinarian stating the problem with the bull.

Structural Soundness Exam. All sale bulls will be subjected to a comprehensive structural soundness exam. The bulls have been managed and developed in such a way as to minimize feet and leg problems and to insure their future soundness. However, despite our best efforts, some bulls leave something to be desired when it comes to feet, legs and structural soundness. Therefore, instead of trimming feet or utilizing other methods to cover up unsoundness, the bulls will be critically analyzed by two qualified cattlemen and a veterinarian for structural soundness. Structurally unsound bulls will be removed from the sale.

Health Program. All bulls & heifers were tested for tuberculosis and brucellosis upon arrival at the test center. All bulls & heifers were treated with Ivermectin-F for internal and external parasites. All bulls have been inoculated with IBR, BVD, BRSV, PI_3, 7-Way Clostridia, H. Somnus, Volar (footrot) and Wart vaccine. All heifers have been vaccinated for brucellosis and tested for pulmonary arterial pressure (PAP), reproductive tract score (RTS) and pelvic measurements. All bulls have been tested for breeding soundness, pelvic measurements and PAP. Measurements from these tests are provided in the catalog. ***All sale bulls have been tested for Trichomoniasis (Trich) and cleared for shipment into Utah.***

Obligation. It shall be expressly understood that the sponsors of this sale, Colorado State University-San Juan Basin Research Center and Four Corners BCIA, act only as agents for the consignors and assume no liability, legal or otherwise. All guarantees shall constitute a contract between the Consignor and the Purchaser of each lot.

Sealed Bids. Sealed bids for any of the bulls or heifers may be handled through Beth LaShell, San Juan Basin Research Center (970-385-4574).

------*PERFORMANCE TESTING SINCE 1949*------

Ranchers from the Four Corners area and surrounding western states have been testing bulls cooperatively with Colorado State University's San Juan Basin Research Center since 1950. Colorado State University began performance testing in 1949 and opened the test to area ranchers in 1950. In 1975, a forty pen bull testing facility was built by the Cooperators to test over 200 bulls annually.

The Four Corners Bull Test offers purebred and commercial cattlemen the opportunity to purchase bulls with good genetics that will perform on mountain ranches. Bulls purchased from this test have greatly influenced the genetics of herds in Colorado and neighboring states. Ranchers who have purchased Four Corners performance-tested bulls for more than 10 years have reported 100-200 pound increases in weaning and yearling weights.

The elevation of the Four Corners Bull Test is 7,600 feet making it the nation's only high mountain bull test. Many of the cooperators as well as buyers run their cattle at high elevations and are concerned about costly losses to brisket disease (high altitude disease). Research at Colorado State University has shown that pulmonary arterial pressure (PAP) is a very good indicator of brisket disease susceptibility. Additionally, research has shown that differences in PAP values are highly heritable; therefore, selection for lower PAP values can lower the incidence of brisket disease. PAP information is provided in the catalog.

-----*PERFORMANCE TESTING PROCEDURES*-----

The bulls were delivered to the test facility on October 14, 2000. Following a 21 day adjustment period, the bulls were weighed on the 112 day test November 6-7th, 2000. Bulls were weighed at 28, 56, 84, and 112 days with 2-day weights taken for the initial and 112-day periods. Bulls were penned in groups of 1 to 6 bulls per pen.

Bulls were fed twice daily, a mixture of oat silage (50%), ground alfalfa/grass hay (15%), corn (35%), and a protein supplement. The feed was weighed to each pen. Feed conversion was calculated for the group of bulls in each pen. Feed efficiency values were adjusted to a common body weight as recommended by the Beef Improvement Federation.

-----*ACKNOWLEDGMENTS*-----

A HUGE THANK YOU to Stetson Conrad for feeding & caring for the bulls & to the San Juan Basin Research Center Crew for their hard work in getting things ready for the sale. Your efforts are greatly appreciated!

SPECIAL THANKS to the La Plata County 4-H Livestock Judging Team & their parents for clipping & washing the bulls. Your hard work is VERY much appreciated.

FOUR CORNERS BEEF CATTLE IMPROVEMENT ASSOCIATION CONSIGNORS

7X Bar Registered Herefords; Dave Hooker; 884-3650 Lane; Hotchkiss, CO 81419; 970-872-3034

Banning Angus; Kim Banning; PO Box 772605; Steamboat Springs, CO 80477; 970-736-0252

Bar 7 N; Robert Norris; PO Box 6; Matheson, CO 80830; 719 541-2456

Gary Conrad; 18683 Hwy 140; Hesperus, CO 81326; 970-385-4457

Craig Herefords; Dan, Karen and Brandon Craig; P.O. Box 152; Phippsburg, CO 80469; 970-736-2272

Greer Ranches; Jim Greer; 7882 CR 100; Hesperus, CO 81326; 970-588-2220

Doug Hall Herefords; Doug Hall; 1145 18 Rd; Fruita, CO 81521; 970-858-3203

OR Composites; Owen Robertson; Box 190; Rangely, CO 81648; 970-261-2106

Fitzgerald Ranch; Gerald Fitzgerald; Box 13; Chromo, CO 81128; 970-264-9164

JEM Cattle Co.; Jeff Eichhorn; 4076 57.25 Road; Olathe, CO 81425; 970-323-6321

JK Angus; Justin Gerber; 857 CR 174; Craig, CO 81625; 970-824-4263

Lazy AKT Long View Ranch; Alan Tone; 1495 CR 526; Bayfield, CO 81122; 970-884-2579

LPB Red Angus; Lawrence L. Bucholz; 2616 Arch Lane; Farmington, NM 87402; 505-327-1619

LaMar Monroe & Sons; LaMar Monroe; P.O. Box 560327; Scipio, UT 84656; 435-758-2424

Maxim Herefords; Mitchell & Tami Hansen; Box 89; Gunnison, UT 84634; 435-528-7415

OR Composites; Owen Robertson; Box 190; Rangely, CO 81648; 970-261-2106

Pat-Way Cattle Co.; Wayne & Patti Buck; 2943 CR 321; Ignacio, CO 81137

Albert Probst; Box 212; Flora Vista, NM 87415; 505-334-8152

Redd Ranches; Paul Redd; Box 326; Paradox, CO 81429; 970-859-7358

Reininghaus Ranches; John Reininghaus; Box 187; Taylorsville, CA 95983; 530-284-6663

Sexton Angus; Ron Posey; 393 CR 516; Ignacio, CO 81137; 970-563-3667

Scott Shrauner; 2604 Delwood Avenue; Durango, CO 81301

Trickle Creek Ranches; Todd & Melissa McMenimen; 6880 CR 510; Ignacio, CO 81137; 970-884-9803

Tybar Ranch; David & Emma Danciger; 1644 Prince Creek Rd; Carbondale, CO 81623; 970-963-1391

Tycksen Farms; Walter H. & Audrey Tycksen; Box 244; Pleasant View, CO 81331; 970-562-4681

Vaca Roja Ranch; Carolyn Watson; 778 Salt Creek Rd.; Ignacio, CO 81137; 970-259-0138

Wells-Champlin Ranch; Cliff Schmid; P.O. Box 452; Ignacio, CO 81137; 970-883-5305

V-V Ranch; Dr. David Schafer; 2657 Village Drive; Cottonwood, AZ 86326; (520) 646-9113

Four Corners BCIA Directors

President: Doug Hall

Vice President: Lawrence Bucholz

Sec'y/Treasurer: Carolyn Watson

Save rent costs by becoming a pen owner.

Please contact Kathy at 970-385-4574 for list of available pens.

GLOSSARY OF TERMS & ABBREVIATIONS

112 Day Weight (112 DAY WT) - Weight taken at the end of the 112 day test. This weight is used as the bulls actual yearling weight and for calculating adjusted yearling weight.

Accuracy (ACC) - Correlation between an animal's unknown actual breeding value and a calculated estimated breeding value.

Actual Weaning Weight (ACT WW) - Weight taken at the time the calf is removed from the cow and weaned.

Adjusted Hip Height (ADJ HIP HT) - Height of the animal at the hips adjusted to 365 days of age using the following formula (Note: The value 0.025 is used in the same formulas to adjust heifers hip heights).

Under 365 days in age: Actual Hip Ht. + (Number of days under 365 x 0.033)
Over 365 days in age: Actual Hip Ht. - (Number of days over 365 x 0.025)

Adjusted Pelvic Area (ADJ PELV AREA) - Obtained by multiplying the height and width measurements of the pelvic opening and adjusting to a common age of 365 days. Area is measured in square centimeters (cm^2). Pelvic area has been shown to influence calving difficulty in first-calf heifers. The following formulas are used to adjust pelvic openings for males and females:

Males: Actual Pelvic Area + .25(365 - actual age) Females: Actual Pelvic Area + .27(365 - actual age)

Adjusted Weaning Weight (ADJ WW) - An un-shrunk, off-the-cow weight adjusted to 205 days of age and to a mature dam age equivalence.

$$\frac{\text{(Actual Weaning Wt. - Birth Weight)}}{\text{Age at weaning}} \times 205 + \text{Birth Wt.} + \text{Age of Dam Adjustment}$$

Adjusted Yearling Weight (ADJ YW) - An un-shrunk weight adjusted to 365 days of age and for age of dam. The following formula is used:

$$\frac{\text{(Actual Yearling Wt. - Actual Weaning Wt.)}}{\text{Number of days between the two weights}} \times 160 + \text{Adjusted Weaning Weight}$$

Average Daily Gain (ADG) - Measurement of daily body weight change in an animal on a feed test.

Beef Improvement Federation (BIF) - A federation of organizations, businesses, and individuals interested or involved in performance evaluation of beef cattle. The purposes of BIF are to bring about uniformity of procedures, development of programs, cooperation among interested entities, education of its members and the ultimate consumers of performance evaluation methods, and to build confidence of the beef industry in the principles and potentials of performance testing.

Birth Weight (BW) - The weight of a calf taken within 24 hours after birth. Heavy birth weights tend to be correlated with calving problems, but the conformation of the calf and the cow are contributing factors.

Breeding Soundness Exam (BSE) - Includes an internal and external physical evaluation and an evaluation of a bull's semen for quality and quantity. A bull must meet certain criteria to be declared a satisfactory breeder.

Expected Progeny Difference (EPD) - The difference in performance to be expected from future progeny of a parent, compared with that expected from future progeny of all other parents evaluated in the analysis when bred to equal mates. EPD is an estimate based on progeny testing and is equal to one-half the estimate of breeding value obtainable from the progeny test records. EPDs for growth traits are generally expressed in pounds, either as a plus difference or minus difference from the population average. EPDs are generally reported in the units of measure of the trait, (e.g., pounds, cm, cm^2, percent, etc.).

Feed Conversion (FEED CONV) - Also referred to as feed efficiency, this is a measure of units of feed consumed per unit of weight gained. Also the production (meat, milk) per unit of feed consumed.

Frame Score (FR SC) - A score based on the actual measurement of hip height that was calculated according to BIF guidelines using the following formula:

$$\text{Frame Score} = -11.548 + .4878*(\text{hip ht}) - .0289*(\text{days of age}) + .00001947*(\text{days of age})^2 + .0000334*(\text{hip ht})*(\text{days of age}).$$

Initial Weight (INIT WT) - Weight of the animal at the beginning of the performance test.

Maternal Value of Daughters-Milk (MK) - This value relates to those traits that are maternally influenced and expressed only by the female, e.g., milk production. It is the difference in performance expected from future progeny of daughters of the parent in question as compared to other parents evaluated in the analysis. Both the sire and dam transmit genes for maternal traits to their female progeny. These daughters express their full breeding value (2 x their EPD) for the maternal trait.

Maternal Value of Daughters-Wean WT (TM) - This value is calculated for traits that are both directly and maternally determined, such as weaning weight. It is the difference in total performance expected from the future progeny from daughters of the parent in question due to that parent's genetic contribution to its daughters. It is calculated as one-half the direct EPD value plus the maternal EPD value. The EPD value of the parent predicts the performance of its grand-progeny.

Most Probable Producing Ability (MPPA) - An estimate of cows's future productivity for a trait (such as progeny weaning weight ratio) based on her past productivity. For example, a cow's MPPA for weaning ratio is calculated from the cow's average progeny weaning ratio, the number of her progeny with weaning records, and the repeatability of weaning weight.

Number of Contemporaries (NO CONT) - The number of animals of similar breed, sex, and age, against which an animal was compared in performance tests. The greater the number of contemporaries, the greater the accuracy of comparisons.

Percent Inbreeding (PCT INB) - Percent of loci that have genes identical by descent (homozygous).

Pulmonary Arterial Pressure (PAP) - Obtained by a procedure called "right heart catheterization", this test is the best indicator to date for identifying animals predisposed to Brisket Disease. The test is not 100 percent and should be used as such. Generally, cattle with PAP values greater than 50 are considered high and cattlemen should be cautious of using them at high elevations.

Reproductive Tract Score (RTS) - Score used to estimate sexual maturity (puberty) in heifers via rectal palpation of the uterine horns and ovaries. The score ranges from 1 to 5. A RTS of 1 = an infantile tract & not cycling; 2 = an infantile tract with small follicles & not cycling; 3 = on the verge of cycling, slight uterine tone, follicles present; 4 = cycling heifers, good uterine tone & size, and follicular growth; 5 = cycling heifers with palpable corpus luteum.

Scrotal Circumference (SC) - A measure of testes size obtained by measuring the distance around the testicles in the scrotum with a circular tape. Related to semen producing capacity and age at puberty of female sibs and progeny.

Total Maternal (TM) - see Maternal Value of Daughters-WEAN WT

Ultrasound Data

Percent intramuscular fat (%IMF) - Objective measurement of marbling in live cattle
Ribeye area (REA) - measure of muscle in the carcass, measured in square inches
12-13th rib fat thickness - A measure of external fat on the carcass, measured in inches
Rump fat thickness - A measure of external fat on the carcass, measured in inches.

Weight per day of age (WDA) - Weight of an individual divided by the individual's age in days.

Weight Ratio (RAT) - In beef cattle evaluations, weight ratios refer to the weight of an individual animal relative to the average of all animals in the same group. An average ratio is 100 so if an animal has a ratio of 105 he is 5% above the average and if an animal has a ratio of 95 he is 5% below the average. Ratios are calculated using the following formula:

$$\frac{\text{Individual record}}{\text{Average of animals in group}} \times 100.$$

AUCTION - SATURDAY, APRIL 7, 2001
12:30 p.m.
Performance of Cooperator Purebred and Composite Bulls

Performance Information: The information in the following section was generated from the bulls on the 112 day performance test. Weaning weight was adjusted to 205 days of age and for age of dam according to each breed organization's standard adjustments. Adjusted weaning weights and ratios were generally supplied by the cooperators. Adjusted yearling weight was computed as adjusted weaning weight plus average daily gain from weaning to the 112 day test weight multiplied by 160. Average daily gain ratios were computed using the bull's record divided by the average of the bulls of the same breed group, multiplied by 100. Breed average daily gains are presented below. Because of pre-test differences between ranches, critical comparisons should be made using the information generated since the bulls began the 112 day test. All bulls listed in the catalog will sell provided no problems arise between the printing of this catalog and sale day.

Sale Order: The bulls are listed in sale order. Sale order within breed is determined by a sale index (50% gain ratio and 50% YW ratio). **An index can be found in the back of the catalog.** The breeds will be rotated through the sale order and only a few will sell at a time. For example, there are 28 Angus, 20 Red Angus, 29 Herefords and 8 Composites. We will sell 25% of each breed in each rotation and the Composites will sell at the end of the sale. So, 7 Angus will sell, then 5 Red Angus followed by 7 Herefords. Then we will repeat the process and sell the second 25% of each breed and continue until all bulls have passed through the sale ring. The sale order of the breeds will be: Angus, Red Angus, Hereford and Composites. **Heifers will sell after all of the bulls.**

Calving Ease Bulls (CE): Calving ease bulls are marked with a "CE" in the upper right hand corner of the bull's information box. Calving ease bulls were selected using actual birth and birth weight EPD. CE bulls must have a BW less than 80 pounds and an EPD of less than .5 in Herefords and less than 1.5 in other breeds.

Pulmonary Arterial Pressure (PAP): Obtained by a procedure called "right heart catheterization", this test is the best indicator to date for identifying animals predisposed to Brisket Disease (High Altitude Disease). The test is not 100 percent accurate and should be used as such. Generally, cattle with PAP values greater than 50 are considered high and cattlemen should be cautious of using them at elevations above 7000 feet. Cattlemen with ranches at less than 5000 feet elevation do not need to be concerned with the PAP value unless they are selling breeding stock to cattlemen at high elevations. Bulls with PAP values greater than 50 are best suited for operations at less than 5000 feet elevation.

Expected Progeny Differences (EPDs): The EPDs presented in the following section were obtained from their respective breed associations. EPDs are the expected differences (expressed in pounds) in performance of a sire's progeny when compared to fixed base. While EPDs for birth, weaning and yearling weights refer to the progeny of sires, the maternal values of milk and weaning weight refer to how we expect progeny of daughters to perform. The accuracy value is a measure of reliability for the corresponding EPD. They range from 0 to 1 and are calculated according to Beef Improvement Federation Guidelines. The higher the value, the more confidence we have that the sire's EPD will not change much with additional progeny. In general, the more information on a sire, the higher the accuracy value. Because these bulls are young, the EPDs presented are pedigree estimates (or back solutions) and would have very low accuracies. Additionally, EPDs cannot be compared across breeds. Each breed association is responsible for producing its' own sire summary and therefore, different methods and data sets are used. The following EPD estimates are the best available for young bulls.

BREED AVERAGE DAILY GAINS

Breed	Number	ADG
Hereford	34	2.88
Angus	33	2.76
Red Angus	23	2.80
Composites	10	2.93
Overall		2.83

PAP: The Four Corners BCIA Bull Test elevation of 7600' gives it the unique distinction of being the nation's only high mountain bull test. To complement this designation, PAP (pulmonary arterial pressure) was first recorded in 1984 on all bulls. This test is the best indicator for identifying animals predisposed to Brisket Disease (High Altitude Disease). Generally, cattle with PAP values greater than 50 are considered high and cattlemen should be cautious of using them at elevations above 7000 feet. The following table shows how the breed averages have changed over the past 4 years.

Breed	Year	Average PAP
Here/PH	1998	40.2
Here/PH	1999	40.6
Here/PH	2000	37.6
Here/PH	2001	40.5
Angus	1998	39.9
Angus	1999	41.0
Angus	2000	45.7
Angus	2001	47.6
Red Angus	1998	47.9
Red Angus	1999	52.3
Red Angus	2000	46.9
Red Angus	2001	48.8

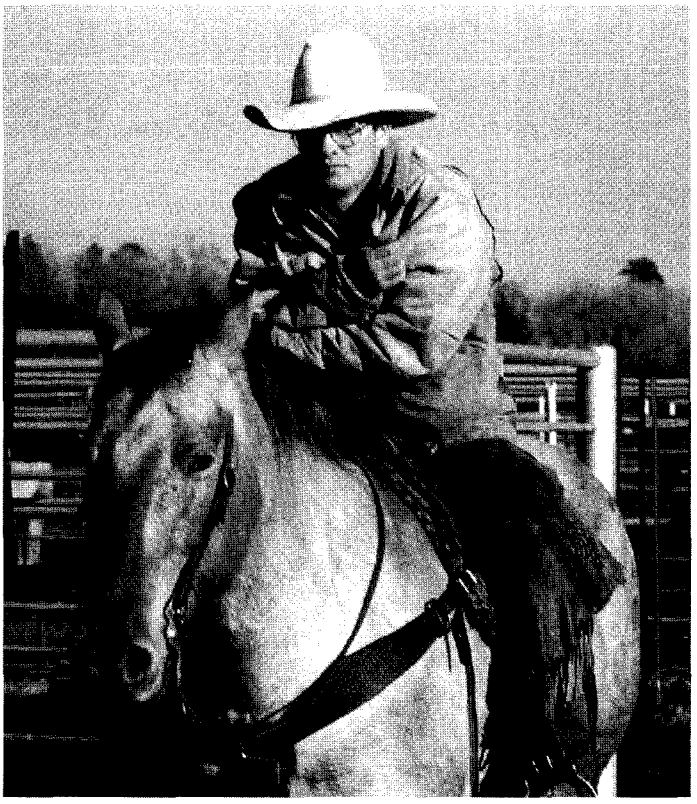
Ultrasound Information: Beginning in 2001, the 4C BCIA Cooperators voted to ultrasound all bulls when they come off test. Data recorded included ribeye area (REA), 12th rib backfat, rump fat and % intramuscular fat (% IMF). The following table shows the breed averages for the ultrasound data collected. Ultrasound data will be available on sale day.

Breed Averages for Ultrasound Data

Breed	Adj REA	Adj 12th Rib Fat	Adj Rump Fat	% IMF
	sq in	in	in	percent
Angus	12.04	0.25	0.30	3.50
Red Angus	11.55	0.23	0.26	3.34
Hereford	10.40	0.19		3.25

Note: Data adjusted to 365 days of age

Tim Holt records a PAP measurement



Stetson Conrad, 4C BCIA Bull Feeder

Tybar Ranch Production Sale

November 3rd, 2001 • 1:00 P.M. • at the Ranch • Carbondale, Colorado

It's Time To Pour PAP Tested Genes Into Your HERD!

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Home: (406) 373-6844

SALE MANAGER: WELLS CATTLE SERVICE
Office: (254) 386-3780

SALE DAY PHONE: (970) 963-1391

David and Emma Danciger, Owners

Mark Nieslanik, Manager • Michael Goscha, Assistant Manager • 1644 Prince Creek Road • Carbondale, CO 81623
Office: (970) 963-1391 • Answering Machine: (970) 963-2494 • Fax: (970) 963-0469 www.tybar.com • Email: danciger@rof.net

ABS GLOBAL INC. SEMEN AUCTION

ABS Global Inc. has donated 10 straws of semen to be auctioned at the beginning of the sale April 7th. The buyer will have their choice of any of the eight bulls listed below. ABS will deliver the semen to your tank whenever you request. Proceeds from the sale of this semen will go towards the Four Corners BCIA to help offset costs associated with the Social on April 6th.

----- EXPECTED PROGENY DIFFERENCES (EPDs) -----

Bull	Breed	ABS Calving Ease Rating[a]	BW	ACC	WW	ACC	YW	ACC	Milk	ACC	TM
New Design 878	Angus	***	2.0	.97	45	.95	84	.60	29	.95	52
Cherokee Canyon	Red Angus	***	-1.3	.86	42	.76	68	.68	22	.27	43
Boo Boo	Gelbvieh	***	-0.1	.92	38	.89	77	.77	23	.56	45
Blazer	Hereford	**	3.0	.92	45	.89	89	.80	20	.72	42
Enhancer	P. Hereford	****	-1.1	.91	31	.86	49	.73	10	.66	25
Unlimited Ease	Charolais	***	-2.0	.95	22	.93	31	.88	17	.87	28
Guardian	Limousin	***	-2.0	.94	17	.90	39	.77	3	.15	12
Lucky Strike	Simmental	***	-.8	.87	27	.83	57	.78	18	.29	32

[a] ABS Calving Ease Star Rating System:

**** Bull proven for a high level of calving ease scores, birth weight EPD, and accuracy level.

*** Bull who can be used on heifers of the same breed.

** Bull who can be used on cows - no assists expected.

* Bull who should only be used on mature cows - expect large birth weights.

----- PEDIGREE INFORMATION -----

Semen Code	Bull	Breed	Sire / Maternal Grandsire
AN1523	New Design 878	Angus	BR New Design 036 / Bon View Bando 598
AR0186	Cherokee Canyon	Red Angus	Buf Crk Chief 874-1658/ Buf Crk Cherokee 1431
GV0061	Boo Boo	Gelbvieh	FHG Flying H Cadillac 184C / CCD Rustler
HH0827	Blazer	Hereford	Churchill Bang 500 / Dr. Achiever 8403
HP0883	Enhancer	P. Hereford	Slayton Bedfor 264/ GK Justificationi
CH0179	Unlimited Ease	Charolais	BCR Polled Unlimited 003 / Mr Bonaparte 194 Twin
LM0071	Guardian	Limousin	Wulfs Rambler 8400X/ Wulf Chopper 1014C
SM0344	Lucky Strike	Simmental	LCHMAN Lucky Buck 7049C/ Circle S Leachman 600U

WINTER LIVESTOCK

SERVING CATTLEMEN FOR 62 YEARS
COLORADO'S PROGRESSIVE LIVESTOCK AUCTION

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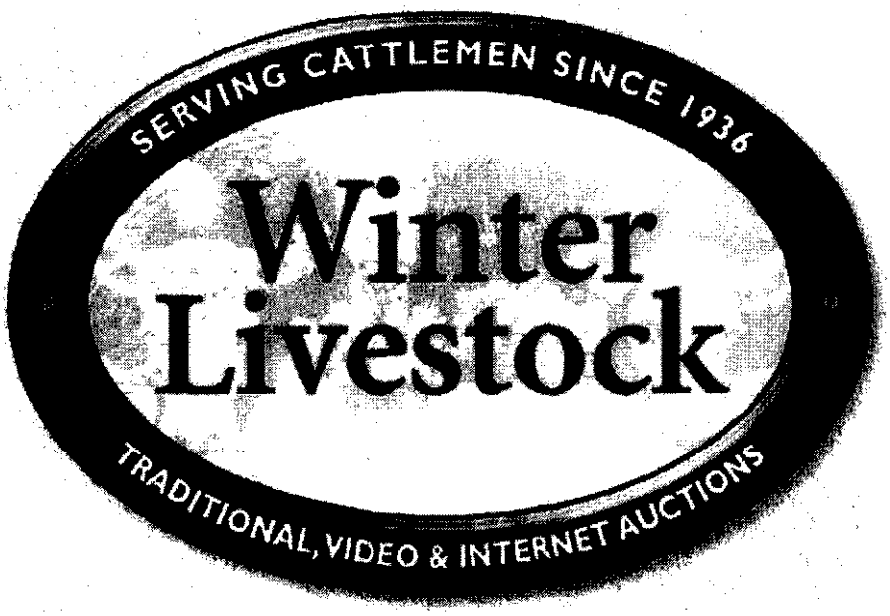

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Sire: BT Direction 65D
PGS: Leachman Right Time
Dam: Miss Blackbird 587
MGS: Westwind Rito 8503 DJH 019

PAP	SC	HT	PELV
57	35	49.8	167

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
80	1.7	702	43	1194	75	27	49

ADG: 3.46 **Ratio**: 126 **WDA**: 3.15 Retaining Semen interest. Pedigree with 4 Pathfinder sires. Dam should attain Pathfinder status next year.

8-4 BA Right Time 518 100% Angus

Born: 03/08/00 Tattoo: 057 P/Black

Consignor: BANNING ANGUS - STEAMBOAT SPRINGS, CO

Sire: Leachman Right Time
PGS: N Bar Emulation Ext
Dam: SA Miss Eileenmere 578
MGS: R&J Cruz

PAP	SC	HT	PELV
40	34	50.3	178

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
90	2.8	691	39	1156	66	18	36

ADG: 3.29 **Ratio**: 120 **WDA**: 3.18 Retaining Semen interest. Maternal brother to Distinction 787 (sire of High Gaining Angus Bull in 2000 4C Bull Test). Dam is Pathfinder Cow.

8-3 B A Heritage 211 100% Angus

Born: 03/02/00 Tattoo: 011 P/Black

Consignor: BANNING ANGUS - STEAMBOAT SPRINGS, CO

Sire: Hart Heritage
PGS: Woodhill Triple Threat
Dam: Duchess 6115 BCBR
MGS: GAR Evas Consistence 3803

PAP	SC	HT	PELV
48	38	49.6	177

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
90	2.2	618	43	1112	75	15	37

ADG: 3.38 **Ratio**: 122 **WDA**: 2.97 Mother has the highest EPDs in herd

7-1 Sexton 036 Karama 511-005 100% Angus

Born: 01/14/00 Tattoo: 005 P/Black

Consignor: SEXTON ANGUS (RON POSEY) - IGNACIO, CO

Sire: B/R New Design 036
PGS: AAR New Trend
Dam: K Bar E Karama 95
MGS: Century Touchstone 131

PAP	SC	HT	PELV
69	37	46.5	160

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	2.6	560	29	956	61	19	34

ADG: 3.71 **Ratio**: 135 **WDA**: 2.59 High Gaining Angus Bull

2-1 Tybar BAR Ext T 205 W37 100% Angus

Born: 01/12/00 Tattoo: W37 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: BAR Ext Traveler 205
PGS: N Bar Emulation Ext
Dam: Tybar Miss Universe T43
MGS: Tybar Extra P160

PAP	SC	HT	PELV
34	35	46.0	176

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
79	2.1	682	37	1157	70	21	38

ADG: 2.91 **Ratio**: 106 **WDA**: 2.75 Tybar will retain 50% semen interest

6-5 Commercial Angus Bull % Angus

Born: 03/12/00 Tattoo: 97 P/Black

Consignor: GREER RANCHES - HESPERUS, CO

Sire: Tybar New Trend U30
PGS: VDAR New Trend 315
Dam:
MGS:

PAP	SC	HT	PELV
40	36	50.0	184

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
83	NA	679	NA	1120	NA	NA	NA

ADG: 3.00 **Ratio**: 109 **WDA**: 3.03

7-5 Sexton Focus 637-008 100% Angus

Born: 01/18/00 Tattoo: 008 P/Black

Consignor: SEXTON ANGUS (RON POSEY) - IGNACIO, CO

Sire: SAF Focus of ER
PGS: SAF Fame
Dam: K Bar E Harmony Barbara 86
MGS: K Bar E Hi Roller 842

PAP	SC	HT	PELV
57	34	49.4	168

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
85	-.8	644	31	1069	54	11	26

ADG: 3.13 **Ratio**: 114 **WDA**: 2.88

11-1 LPB Lonk K04 100% RAngus ** CE

Born: 03/15/00 Tattoo: K04 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: VRR Mistarre
MGS: EL Dolor 7400

PAP	SC	HT	PELV
44	33	49.6	198

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
71	.6	631	32	1141	45	15	31

ADG: 3.49 **Ratio**: 124 **WDA**: 3.14 High gaining Red Angus Bull

Ultrasound data will be available on Sale Day

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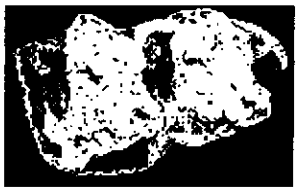

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11-4 LPB Lonk K01 100% RAngus

Born: 03/10/00 Tattoo: K01 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: LPB Topper F05
MGS: RDD Topper C302

PAP	SC	HT	PELV
37	33	48.9	162

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	.2	683	32	1139	48	15	31

ADG: 3.42 **Ratio**: 122 **WDA**: 3.07

12-3 LPB Lonk K08 100% RAngus

Born: 04/03/00 Tattoo: K08 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: LPB Topper G05
MGS: RDD Topper C302

PAP	SC	HT	PELV
47	30	46.7	174

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	0	635	28	1117	42	14	28

ADG: 3.34 **Ratio**: 119 **WDA**: 3.00

28-2 UA RCC Prospector 0463 100% Hereford

Born: 01/14/00 Tattoo: 0463 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: RCC Prospectita 2508
MGS: RCC Prospct 7141 1 ET

PAP	SC	HT	PELV
38	35	47.0	162

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	3.2	438	19	1188	36	11	20

ADG: 4.32 **Ratio**: 150 **WDA**: 2.74 2001 High Gaining Hereford Bull. 1/2 sib to 2000 high gaining bull. Son of 1998 high gaining

28-1 UA RCC Prospector 0454 100% Hereford

Born: 01/05/00 Tattoo: 0454 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS:
Dam:
MGS:

PAP	SC	HT	PELV
39	33	46.3	165

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	NA	462	NA	1063	NA	NA	NA

ADG: 3.91 **Ratio**: 136 **WDA**: 2.52

15-3 RDD Day 0054 99% RAngus CE

Born: 02/09/00 Tattoo: 0054 P/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: RDD Day 7334
PGS: BJR Make My Day
Dam: RDD MS B Warrior H293
MGS: Beckton Warrior

PAP	SC	HT	PELV
42	37	48.4	155

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
65	-1.6	579	30	1110	56	13	28

ADG: 3.43 **Ratio**: 122 **WDA**: 2.81

15-4 RDD Day 0034 98% RAngus CE

Born: 02/11/00 Tattoo: 0034 P/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: RDD Day 7334
PGS: BJR Make My Day
Dam: RDD MS Reveal H553
MGS: Bieber Revaltion 5988

PAP	SC	HT	PELV
49	35	49.5	161

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
73	.5	575	35	1094	62	16	34

ADG: 3.33 **Ratio**: 119 **WDA**: 2.77

19-2 Monument Lad 0031 100% Hereford

Born: 01/19/00 Tattoo: 0031 H/

Consignor: DOUG HALL REGISTERED HEREFORDS - FRUITA, CO

Sire: Monument L1 9841
PGS: CL 1 Domino 386
Dam: Monument Glena P9631
MGS: GK Excello 546D

PAP	SC	HT	PELV
39	34	51.2	190

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
95	4.1	622	44	1232	66	20	42

ADG: 3.53 **Ratio**: 122 **WDA**: 3.24 Great EPDs

27-1 UA RCC Prospector 0460 100% Hereford

Born: 01/13/00 Tattoo: 0460 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

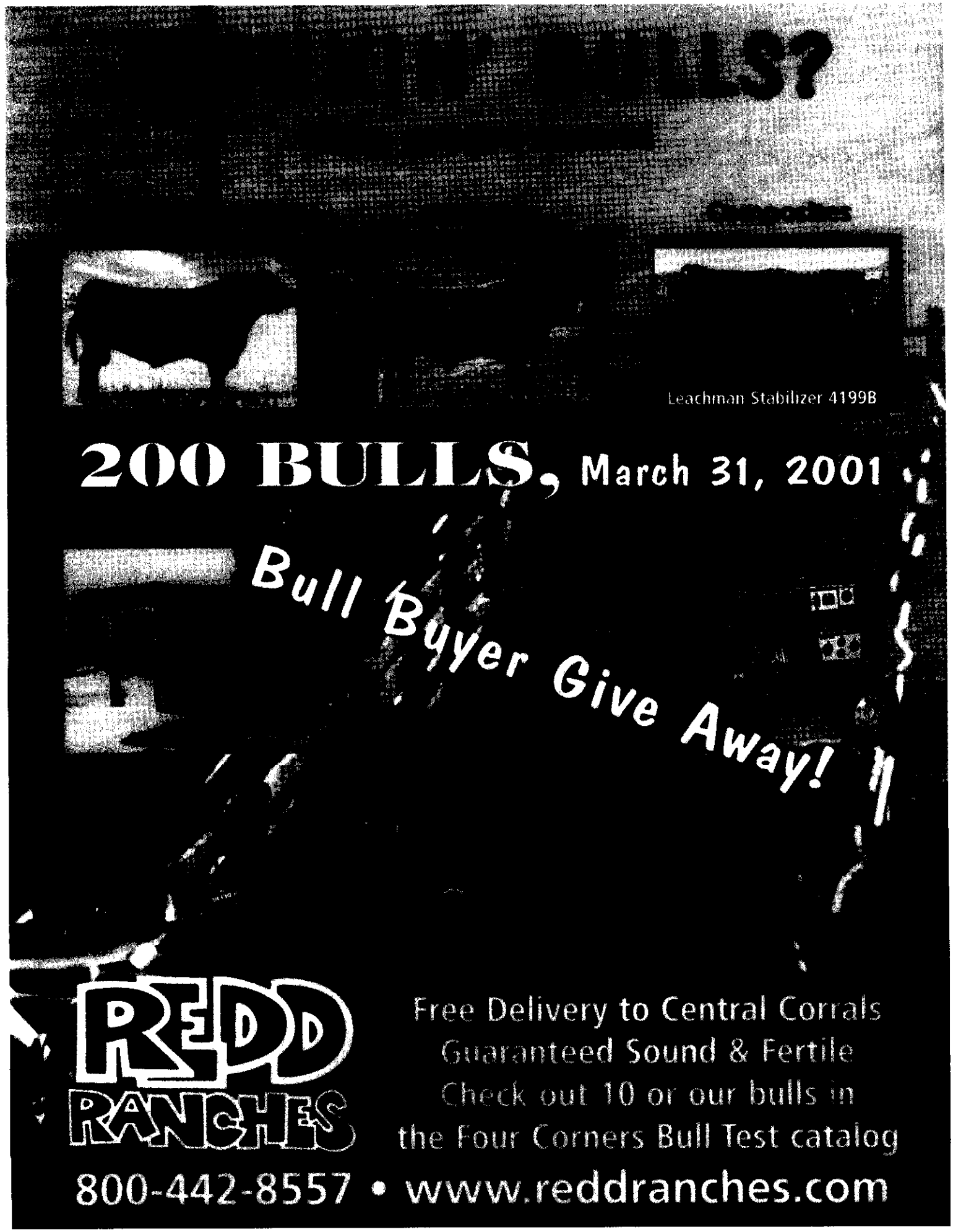
Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: UA RCC Prspecta 7550
MGS: RCC Prospctr 3030 1ET

PAP	SC	HT	PELV
40	36	46.5	159

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	3.7	471	20	1084	40	7	17

ADG: 3.76 **Ratio**: 131 **WDA**: 2.46

Ultrasound data will be available on Sale Day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24-2 LMS Big Boom 0508 100% PHereford

Born: 02/29/00 Tattoo: 0508 P/

Consignor: LAMAR MONROE & SONS - SCIPIO, UT

Sire: Allen Sonic Boom 4
PGS: Remitall Boomer 46B
Dam: LMS Perfette 508
MGS: MR Perfect Time 1ET

PAP	SC	HT	PELV
50	34	52.6	148

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
92	6.8	631	49	1122	82	13	37

ADG: 3.42 **Ratio**: 119 **WDA**: 3.04 A big stout eye appealling calf with great EPDs for growth.

22-1 M 178 Capt 251 100% Hereford

Born: 04/05/00 Tattoo: 251 H/

Consignor: MAXIM HEREFORDS - GUNNISON, UT

Sire: M Capt Selkirk 178
PGS: 4L Captain 178F
Dam: M MS Capt Selkirk 1083
MGS: 4L Captain 178F

PAP	SC	HT	PELV
43	30	49.3	174

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	3.8	652	40	1171	62	16	36

ADG: 3.04 **Ratio**: 106 **WDA**: 2.57

9-3 Tycksens Legacy Fortune K122 100% Angus

Born: 01/22/00 Tattoo: K122 S/Black

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: SAF Easy Fortune
PGS: Minerts Fortune 2000
Dam: Continental Fortune
MGS: Stevenson Fortune 435C

PAP	SC	HT	PELV
44	33	47.1	167

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
68	2.5	546	43	1030		12	33

ADG: 3.14 **Ratio**: 114 **WDA**: 2.58 A calving ease bull from a first calf heifer. Granddam has consistently raised top calves.

9-1 Fortunes Legacy K144 100% Angus

Born: 01/22/00 Tattoo: K144 P/Black

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: VDAR Ka Legacy
PGS: VDAR Lucys Boy
Dam: Tycksen Jean H144
MGS: Stevenson Fortune 435C

PAP	SC	HT	PELV
39	35	46.8	148

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
66	1	487	23	968	40	14	25

ADG: 3.23 **Ratio**: 117 **WDA**: 2.39 Calving ease bull from a first calf heifer. Granddam is one of my best cows that has had 6 calves and they have all been in top 5% of calves weaned.

24-4 LMS Big Boom 0129 100% PHereford

Born: 03/06/00 Tattoo: 0129 P/

Consignor: LAMAR MONROE & SONS - SCIPIO, UT

Sire: Allen Sonic Boom 4
PGS: Remitall Boomer 46B
Dam: LMS Summette 129
MGS: NK L1 Domino 9449

PAP	SC	HT	PELV
38	31	51.3	180

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
87	5.4	699	50	1147	80	20	45

ADG: 3.31 **Ratio**: 115 **WDA**: 3.13 He is thick and meaty out of one of our best milking cows.

25-4 WCR Aires 7014 100% PHereford

Born: 02/18/00 Tattoo: 0799 P/

Consignor: WELLS-CHAMPLIN RANCH - IGNACIO, CO

Sire: WNH Everything
PGS: MSU Optimum Z03
Dam: WCR Chipeta 799
MGS: KCF Victor 08B X4

PAP	SC	HT	PELV
39	36	49.7	176

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
83	4	716	38	1173	66	15	34

ADG: 3.01 **Ratio**: 104 **WDA**: 3.10 Retaining an interest in semen. Bull is descended from some of the best performers in the Hereford breed. Genetics and EPDs can't be matched.

5-2 JK Threat 293 100% Angus

Born: 01/26/00 Tattoo: J080 P/Black

Consignor: JK ANGUS - CRAIG, CO

Sire: Woodhill Triple Threat
PGS: Ankonian Cornhusker
Dam: J&K Helene 0360 YTLL
MGS: Leachman Laser

PAP	SC	HT	PELV
42	36	47.9	164

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
84	2.4	660	35	1068	66	14	31

ADG: 2.97 **Ratio**: 108 **WDA**: 2.70

8-2 BA Distinction 820 100% Angus

Born: 02/18/00 Tattoo: 020 P/Black

Consignor: BANNING ANGUS - STEAMBOAT SPRINGS, CO

Sire: Distinction 787
PGS: Leachman Distinction
Dam: Leachman Lucy 8201
MGS: TC Stockman 365

PAP	SC	HT	PELV
44	34	47.7	163

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
76	2.7	604	34	1033		21	38

ADG: 3.02 **Ratio**: 109 **WDA**: 2.58 Dam is maternal sister to Leachman PrimeTime. GrandDam is a donor cow at Leachman Angus. Great mix of Maternal and Carcass

Ultrasound data will be available on Sale Day

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5-3 TCR Bullseye Coal T012 100% Angus

Born: 03/12/00 Tattoo: T012 P/Black

Consignor: TRICKLE CREEK RANCHES - IGNACIO, CO

Sire: TCR Coal Bando
PGS: Bon View Bando 598
Dam: Neils Barbara Target 957
MGS: Nelson Target 7255

PAP	SC	HT	PELV
44	31	50.0	180

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
85	2.8	623	36	1037	64	16	34

ADG: 2.95 **Ratio**: 107 **WDA**: 2.85

3-1 Lee at Pat-Way 100% Angus

Born: 03/11/00 Tattoo: 017 S/Black

Consignor: PAT-WAY CATTLE CO. - IGNACIO, CO

Sire: Commander of Lazy 8
PGS: Protocol of Lazy 8
Dam: Heiress of Lazy 8
MGS: Turning Point of Lazy 8

PAP	SC	HT	PELV
57	34	52.9	189

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
70		697		1120			

ADG: 2.71 **Ratio**: 98 **WDA**: 2.91

7-3 Sexton Kent of Susan 708-039 100% Angus

Born: 02/27/00 Tattoo: 039 P/Black

Consignor: SEXTON ANGUS (RON POSEY) - IGNACIO, CO

Sire: K Bar E New Trend 95-6
PGS: VDAR New Trend 315
Dam: K&E Beulah KOD 97
MGS: Krugerrand of Donamere 490

PAP	SC	HT	PELV
74	33	47.0	154

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
70	2.4	606	31	1002	58	15	30

ADG: 2.96 **Ratio**: 107 **WDA**: 2.63

13-3 Fitgerald Copper 02 100% RAngus CE

Born: 03/16/00 Tattoo: FR 02 P/Red

Consignor: FITZGERALD RANCH - CHROMO, CO

Sire: Beckton Copper JE 616
PGS: Buf Crk Coppertop 3230
Dam: Beckton Lana F152 CL
MGS: Beckton Clipper KC D400

PAP	SC	HT	PELV
59	30	47.6	167

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
67	-.1	626	23	1097	51	14	26

ADG: 3.28 **Ratio**: 117 **WDA**: 2.96

12-2 LPB Lonk K07 100% RAngus

Born: 03/29/00 Tattoo: K07 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: LPB Topper F01
MGS: RDD Topper C302

PAP	SC	HT	PELV
42	33	48.5	148

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
80	-1.2	595	22	1064	35	12	23

ADG: 3.33 **Ratio**: 119 **WDA**: 2.90

13-6 Fitzgerald Dominor 04 100% RAngus

Born: 04/11/00 Tattoo: FR 04 P/Red

Consignor: FITZGERALD RANCH - CHROMO, CO

Sire: Beckton Dominor ZE 401
PGS: Beckton Dominor 9455
Dam: Beckton Rose E096 CT
MGS: Beckton Clifftop T C075

PAP	SC	HT	PELV
47	34	47.5	149

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	-1.8	625	20	1102	40	11	21

ADG: 3.20 **Ratio**: 114 **WDA**: 3.06

13-5 Fitzgerald Hobo 07 100% RAngus CE

Born: 04/15/00 Tattoo: FR 07 P/Red

Consignor: FITZGERALD RANCH - CHROMO, CO

Sire: Basin Hobo 215D
PGS: Beckton Dominor 9455
Dam: Beckton Angel F070 EP
MGS: Beckton Epic D404

PAP	SC	HT	PELV
45	32	49.6	186

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	-1.4	666	26	1084	48	15	29

ADG: 3.06 **Ratio**: 109 **WDA**: 2.94

10-2 00 VRR Max 325 100% Rangus * CE

Born: 03/28/00 Tattoo: VRR 2007 P/Black

Consignor: VACA ROJA RANCH - IGNACIO, CO

Sire: BJ Stardust Max A800
PGS: Shamrock Max 2715
Dam: VRR Sonja 6156
MGS: El Dolor 7400

PAP	SC	HT	PELV
41	34	49.0	167

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
68	-.7	740	16	1182	34	10	18

ADG: 2.71 **Ratio**: 96 **WDA**: 3.28

Ultrasound data will be available on Sale Day

22-5 M Capt Selkirk 241
100% Hereford
Born: 02/13/00 Tattoo: 241 H/

Consignor: MAXIM HEREFORDS - GUNNISON, UT

Sire: 4L Captain 178E
PGS: BP Captain 10B
Dam: M MS Selkirk 1957
MGS: M Selkirk LAD 389

PAP	SC	HT	PELV
38	32	48.0	169

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	2.6	653	33	1203	54	11	28

ADG: 2.88 **Ratio**: 100 **WDA**: 2.26

23-2 DK General 018
100% Hereford
Born: 02/29/00 Tattoo: 018 H/

Consignor: CRAIG HEREFORDS - PHIPPSBURG, CO

Sire: Church General 542
PGS: JV Gerator 118
Dam: DK Miss Patriot 412
MGS: JV Patriot 230

PAP	SC	HT	PELV
39	34	53.8	158

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
88	4.2	783	43	1166	78	16	38

ADG: 2.96 **Ratio**: 103 **WDA**: 3.22

23-1 DK Total 004
100% Hereford
Born: 01/27/00 Tattoo: 004 H/

Consignor: CRAIG HEREFORDS - PHIPPSBURG, CO

Sire: DR Total C311
PGS: DR Mark Domino 9002
Dam: DK Miss Blazer 808
MGS: MJB Blazer 1000

PAP	SC	HT	PELV
42	35	49.5	152

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
85	2.8	717	32	1116	61	19	35

ADG: 3.08 **Ratio**: 107 **WDA**: 2.87 Born unassisted out of a first calf heifer. Never assisted a calf out of his sire.

25-2 JEM Advance Dominator 391
100% Hereford
Born: 01/23/00 Tattoo: 0391 H/

Consignor: JEM CATTLE CO. - OLATHE, CO

Sire: OXH Advance 3007
PGS: HH Advance 154A
Dam: JEM 7028 Regina 7346 1ET
MGS: OXH Mark Domino 7022

PAP	SC	HT	PELV
40	35	46.6	156

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
81	.8	659	27	1047	47	25	38

ADG: 3.24 **Ratio**: 113 **WDA**: 2.74 391's pedigree is stacked with some of the breed's most noted bulls for combining calving ease, performance and milk.

28-3 UA RCC Prospector 0456
100% Hereford
Born: 02/12/00 Tattoo: 0456 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: UA RCC Prspecta 8802
MGS: RCC Prospctr 3030 1ET

PAP	SC	HT	PELV
39	35	45.5	184

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	4.2	505	21	1040	42	8	19

ADG: 3.25 **Ratio**: 113 **WDA**: 2.37

29-3 Bar 7N Marker 006
100% Hereford
Born: 02/05/00 Tattoo: 006 H/

Consignor: BAR 7 N - MATHESON, CO

Sire: SR Marker 803
PGS: OXH Mark Domino 0088
Dam: MIA Performer 585
MGS: WHR Primetime 1055

PAP	SC	HT	PELV
40	34	48.3	194

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
88	1.2	678	36	1114	64	16	34

ADG: 2.99 **Ratio**: 104 **WDA**: 3.02 Carcass info on siblings available. Modest BW and Low BW EPD. Pigment.

23-3 DK Total 003
100% Hereford
Born: 01/26/00 Tattoo: 003 H/

Consignor: CRAIG HEREFORDS - PHIPPSBURG, CO

Sire: DR Total C311
PGS: DR Mark Domino 9002
Dam: DK Miss Stockman 803
MGS: MFR Stockman 764

PAP	SC	HT	PELV
37	37	48.9	168

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
80	2.3	684	27	1087	51	16	30

ADG: 3.00 **Ratio**: 104 **WDA**: 2.78 Born unassisted out of a first calf heifer. Never assisted a calf out of his sire.

5-1 J K 8180 of 068
100% Angus
Born: 01/23/00 Tattoo: J020 P/Black

Consignor: JK ANGUS - CRAIG, CO

Sire: Sitz Traveler 8180
PGS: GDAR Traveler 71
Dam: J&K Blackbirds Triumph
MGS: Hoff Triumph SC 927

PAP	SC	HT	PELV
55	32	47.6	156

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
86	1.5	731	37	1105	72	24	42

ADG: 2.64 **Ratio**: 96 **WDA**: 2.59

Ultrasound data will be available on Sale Day

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9-2 Tycksen Legacy Fortune K037 100% Angus

Born: 01/19/00 Tattoo: K037 P/Black

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: VDAR Ka Legacy
PGS: VDAR Lucys Boy
Dam: Tycksen Susan H513
MGS: Stevenson Fortune 435C

PAP	SC	HT	PELV
38	35	47.7	158

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
60	1.5	486	25	928	45	14	26

ADG: 3.12 **Ratio**: 113 **WDA**: 2.29 Calving ease bull from first calf heifer. His dam was the top heifer in my 98 calf crop. Granddam's calves have all been in the top 5% at weaning.

2-6 Tybar Emulation W12 100% Angus

Born: 01/07/00 Tattoo: W12 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: Tybar Emulation R12
PGS: Emulation N Bar 5522
Dam: Tybar Erica Energy U10
MGS: Tybar Finks 5522-S55

PAP	SC	HT	PELV
39	31	47.8	163

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
74	2.2	666	36	1078	69	16	34

ADG: 2.66 **Ratio**: 97 **WDA**: 2.71 Tybar will retain 50% semen interest

2-3 Tybar Heartland W84 100% Angus

Born: 01/29/00 Tattoo: W84 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: Hoff Heartland S C 456
PGS: Hoff Hi Flyer SC 7134
Dam: Tybar Juana T148
MGS: Tybar Emulation Ext R58

PAP	SC	HT	PELV
35	35	48.5	152

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
80	2.5	639	37	1049	67	11	29

ADG: 2.56 **Ratio**: 93 **WDA**: 2.74 Tybar will retain 50% semen interest

11-3 LPB Lonk K02 100% RAngus

Born: 03/15/00 Tattoo: K02 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: VRR Flo-Two
MGS: CWH Red Mesa 307

PAP	SC	HT	PELV
52	32	49.3	149

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
85	.3	664	31	1071	44	16	31

ADG: 2.96 **Ratio**: 105 **WDA**: 2.94

2-4 Tybar B/R ND 036 W34 100% Angus

Born: 01/11/00 Tattoo: W34 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: B/R New Design 036
PGS: VDAR New Trend 315
Dam: Tybar Doreen U110
MGS: Tybar Eurloch P68

PAP	SC	HT	PELV
36	34	48.9	164

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	2.5	614	36	1045	69	13	31

ADG: 2.79 **Ratio**: 101 **WDA**: 2.62 Tybar will retain 50% semen interest

6-4 Commercial Angus Bull % Angus

Born: 03/13/00 Tattoo: 103 P/Black

Consignor: GREER RANCHES - HESPERUS, CO

Sire: J&K Eurloch K10
PGS: Tybar Eurloch P37
Dam:
MGS:

PAP	SC	HT	PELV
37	32	49.5	158

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
76	NA	560	NA	976	NA	NA	NA

ADG: 2.92 **Ratio**: 106 **WDA**: 2.71

2-5 Tybar B/R ND 036 W114 100% Angus

Born: 02/11/00 Tattoo: W114 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: B/R New Design 036
PGS: VDAR New Trend 315
Dam: Tybar Fanny S121
MGS: Tybar Extra P160

PAP	SC	HT	PELV
40	35	49.5	143

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	2	609	34	1006	33	20	37

ADG: 2.55 **Ratio**: 93 **WDA**: 2.70 Tybar will retain 50% semen interest

9-4 Tycksen Dble Time K420 100% RAngus

Born: 02/29/00 Tattoo: K420 P/Red

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: Lchmn King Rob 1158G
PGS: Lman King Rob 8621
Dam: EBC Kanlady 1082 420
MGS: KAN Rocky 010

PAP	SC	HT	PELV
48	29	47.6	166

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	2.6	495	34	952	56	17	33

ADG: 3.23 **Ratio**: 115 **WDA**: 2.54 A calving ease bull with a gentle disposition on both dam and sire sides. Dam is an extra easy keeper.

Ultrasound data will be available on Sale Day

15-2 RDD Day 011 97% Rangus

Born: 02/15/00 Tattoo: 0011 P/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: RDD Day 7334
PGS: BJR Make My Day
Dam: Redd MS Scrambler H316
MGS: 97 Sumcap Sire Group

PAP	SC	HT	PELV
45	34	47.1	156

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
67	-.9	577	27	1035	48	9	23

ADG: 2.75 **Ratio**: 98 **WDA**: 2.63

9-5 King Robs Better K76 100% RAngus

Born: 02/23/00 Tattoo: K76 P/Red

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: 4C Double Time
PGS: LMN Second 2 None 1161C
Dam: Tycksen Better 076
MGS: Lman None Better 9604

PAP	SC	HT	PELV
47	33	47.9	141

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
62	.5	528	36	953	55	5	23

ADG: 2.90 **Ratio**: 103 **WDA**: 2.48 A calving ease bull from high carcass yielding dam and sire. Gentle disposition.

15-1 RDD Day 0039 98% RAngus

Born: 02/09/00 Tattoo: 0039 P/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: RDD Day 7334
PGS: BJR Make My Day
Dam: RDD Ms Z Julian H319
MGS: BKT Julian G

PAP	SC	HT	PELV
39	36	48.9	183

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
66	-.9	602	32	1019	56	10	26

ADG: 2.60 **Ratio**: 93 **WDA**: 2.60

27-3 UA RCC Prospector 0474 100% Hereford

Born: 01/12/00 Tattoo: 0474 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: UA RCC Prospecta 6032
MGS: RCC Prospctr 3030 1ET

PAP	SC	HT	PELV
39	32	47.5	155

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	3.6	536	22	1059	43	11	22

ADG: 3.02 **Ratio**: 105 **WDA**: 2.54

25-1 JEM Advance Dominator 394 100% Hereford

Born: 02/08/00 Tattoo: 0394 H/

Consignor: JEM CATTLE CO. - OLATHE, CO

Sire: OXH Advance 3007
PGS: HH Advance 154A
Dam: JEM Regina Dominator
MGS: DH Yampa Dominator

PAP	SC	HT	PELV
36	37	53.4	179

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
94	3.1	704	39	1089	66	25	45

ADG: 2.90 **Ratio**: 101 **WDA**: 3.01 394 is a powerful bull with calving ease and milk

27-4 UA RCC Prospector 0470 100% Hereford

Born: 01/02/00 Tattoo: 0470 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: RCC Prospectita 1502
MGS: Tarrington P7595 ET

PAP	SC	HT	PELV
40	36	47.7	158

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	4	493	22	1027	40	10	21

ADG: 2.97 **Ratio**: 103 **WDA**: 2.49

22-3 M 178 Capt 254 100% Hereford

Born: 04/10/00 Tattoo: 254 H/

Consignor: MAXIM HEREFORDS - GUNNISON, UT

Sire: M Capt Selkirk 178
PGS: 4L Captain 178F
Dam: M MS Capt Lerch 1076
MGS: 4L Captain 178F

PAP	SC	HT	PELV
41	30	48.4	163

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	3.8	653	39	1121	61	15	35

ADG: 2.71 **Ratio**: 94 **WDA**: 2.44

22-2 M 178 Capt 250 100% Hereford

Born: 04/05/00 Tattoo: 250 H/

Consignor: MAXIM HEREFORDS - GUNNISON, UT

Sire: M Capt Selkirk 178
PGS: 4L Captain 178F
Dam: M MS Capt Lad 1081
MGS: 4L Captain 178F

PAP	SC	HT	PELV
37	29	48.0	174

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
76	3.2	668	39	1107	63	15	35

ADG: 2.63 **Ratio**: 91 **WDA**: 2.39

Ultrasound data will be available on Sale Day

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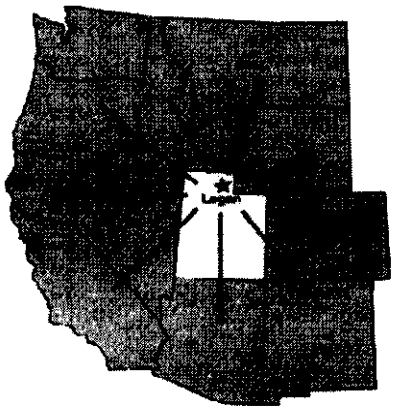

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19-1 Monument Fire P0014 100% PHereford

Born: 01/08/00 Tattoo: 0014 P/

Consignor: DOUG HALL REGISTERED HEREFORDS - FRUITA, CO

Sire: Gerber Watchfire 117F
PGS: Feltons 517
Dam: Monument Glena P9814
MGS: GK Excello 546D

PAP	SC	HT	PELV
40	32	47.8	164

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
85	3.3	562	39	1025	68	16	36

ADG: 2.77 **Ratio**: 96 **WDA**: 2.55 Great Genetic Potential

2-2 Tybar B/R ND 036 W86 100% Angus CE

Born: 01/29/00 Tattoo: W86 P/Black

Consignor: TYBAR RANCH - CARBONDALE, CO

Sire: B/R New Design 036
PGS: VDAR New Trend 315
Dam: Tybar Blackcap Carmen T50
MGS: Finks 5522-6148

PAP	SC	HT	PELV
39	33	47.5	171

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
67	.2	583	35	1009	70	20	37

ADG: 2.51 **Ratio**: 91 **WDA**: 2.64 Tybar will retain 50% semen interest

3-2 El Preston 100% Angus

Born: 03/27/00 Tattoo: 024 P/Black

Consignor: PAT-WAY CATTLE CO. - IGNACIO, CO

Sire: Commander of Lazy 8
PGS: Protocol of Lazy 8
Dam: Magneta of Lazy 8
MGS: Lazy 8 Mikey

PAP	SC	HT	PELV
43	27	50.5	144

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
74		588		954			

ADG: 2.38 **Ratio**: 86 **WDA**: 2.47

4-4 Gordon at Pat-Way 100% Angus

Born: 05/04/00 Tattoo: 006 P/Black

Consignor: PAT-WAY CATTLE CO. - IGNACIO, CO

Sire: Commander of Lazy 8
PGS: Protocol of Lazy 8
Dam: Pride of Lazy 8
MGS: Turning Point of Lazy 8

PAP	SC	HT	PELV
47	29	50.2	148

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
76		588		949			

ADG: 2.30 **Ratio**: 84 **WDA**: 2.49

22-4 M Capt Selkirk 246 100% Hereford

Born: 03/07/00 Tattoo: 246 H/

Consignor: MAXIM HEREFORDS - GUNNISON, UT

Sire: 4L Captain 178E
PGS: BP Captain 10B
Dam: M MS Selkirk 2013
MGS: M Selkirk Lad 389

PAP	SC	HT	PELV
40	30	47.3	156

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	2.5	535	34	1006	54	14	31

ADG: 2.81 **Ratio**: 98 **WDA**: 2.33

7-6 Sexton DYF Blackcap 819-032 100% Angus CE

Born: 02/22/00 Tattoo: 032 P/Black

Consignor: SEXTON ANGUS (RON POSEY) - IGNACIO, CO

Sire: Double Your Fortune
PGS: Gardens Sensation 039 S1
Dam: Lone Cone BlackCap 819
MGS: Midnight Hi Flyer 4N1

PAP	SC	HT	PELV
41	33	49.3	151

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
66	-1.2	631	27	988		15	28

ADG: 2.45 **Ratio**: 89 **WDA**: 2.48

7-4 Sexton Forfan Blkcp 818-042 100% Angus

Born: 03/01/00 Tattoo: 042 P/Black

Consignor: SEXTON ANGUS (RON POSEY) - IGNACIO, CO

Sire: Forever Favorite 733
PGS: Forever Fortune L1
Dam: Lone Cone Blackcap 818
MGS: Valentino L1 504

PAP	SC	HT	PELV
39	31	47.1	158

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
75	2.4	677	23	960		17	28

ADG: 2.28 **Ratio**: 83 **WDA**: 2.38

3-3 Dave HIRZ at Pat-Way 100% Angus

Born: 03/15/00 Tattoo: 015 P/Black

Consignor: PAT-WAY CATTLE CO. - IGNACIO, CO

Sire: Commander of Lazy 8
PGS: Protocol of Lazy 8
Dam: Pridetta of Lazy 8
MGS: Lazy 8 Mikey

PAP	SC	HT	PELV
45	32	49.1	128

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
70		542		890			

ADG: 2.43 **Ratio**: 88 **WDA**: 2.28

Ultrasound data will be available on Sale Day

6-3 Commercial Angus Bull % Angus

Born: 03/25/00 Tattoo: 111 P/Black

Consignor: GREER RANCHES - HESPERUS, CO

Sire: Tybar New Trend U30
PGS: VDAR New Trend 315
Dam:
MGS:

PAP	SC	HT	PELV
45	29	48.4	154

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
74	NA	566	NA	824	NA	NA	NA

ADG: 2.32 **Ratio**: 84 **WDA**: 2.16

14-1 Fitgerald Julian 01 100% RAngus

Born: 04/15/00 Tattoo: FR 01 P/Red

Consignor: FITZGERALD RANCH - CHROMO, CO

Sire: Beckton Julian 66B571
PGS: Beckton Julian
Dam: Beckton Lana F823PL
MGS: Beckton Plato C154

PAP	SC	HT	PELV
52	32	46.6	172

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
72	-4.3	661	19	941	38	9	19

ADG: 2.67 **Ratio**: 95 **WDA**: 2.51

10-3 RA Bull (eligible to register) 100% RAngus

Born: 02/21/00 Tattoo: P/Red

Consignor: ALBERT PROBST - FLORA VISTA, NM

Sire: CSU El Dolor 5212
PGS: Beckton Vanquish B892
Dam:
MGS:

PAP	SC	HT	PELV
60	35	48.3	144

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	NA	698	NA	1003	NA	NA	NA

ADG: 2.36 **Ratio**: 84 **WDA**: 2.75 Purebred, eligible to register.

12-1 LPB Lonk K03 100% RAngus **

Born: 03/15/00 Tattoo: K03 P/Red

Consignor: LPB RED ANGUS - FARMINGTON, NM

Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: VRR Mistarre
MGS: EL Dolor 7400

PAP	SC	HT	PELV
39	31	47.1	154

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
60	.6	453	32	835	45	15	31

ADG: 2.50 **Ratio**: 89 **WDA**: 2.31

9-6 Tycksens King Rob K588 100% RAngus

Born: 02/29/00 Tattoo: K588 P/Red

Consignor: TYCKSEN RANCH - PLEASANT VIEW, CO

Sire: LCC King Rob 1158G
PGS: LMAN King Rob 8621
Dam: AWT 5100
MGS: RDD Julian 3754

PAP	SC	HT	PELV
41	30	47.1	148

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
64	-.2	455	31	792	53	18	33

ADG: 2.31 **Ratio**: 82 **WDA**: 2.17 A calving ease bull with gentle disposition and from high yielding carcass parents.

26-2 TR Advance Explosion 0115 100% Hereford

Born: 02/09/00 Tattoo: 0115 H/

Consignor: LAZY AKT LONG VIEW RANCH - BAYFIELD, CO

Sire: HH Advance 418D
PGS: HH Advance 249 B
Dam: SR MS Explosion
MGS: CSU Explostion 7234

PAP	SC	HT	PELV
47	34	49.9	180

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
99	3.2	644	31	1030	49	18	33

ADG: 2.72 **Ratio**: 95 **WDA**: 2.81

26-3 TR Advance Explosion 0128 100% Hereford

Born: 02/16/00 Tattoo: 0128 H/

Consignor: LAZY AKT LONG VIEW RANCH - BAYFIELD, CO

Sire: HH Advance 418D
PGS: HH Advance 249B
Dam: SR MS Explosion 4110
MGS: CSU Explosioin 7234

PAP	SC	HT	PELV
40	30	48.6	173

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
83	1	584	28	1032	48	18	32

ADG: 2.71 **Ratio**: 94 **WDA**: 2.81

19-3 Monument Fire P2079 100% PHereford

Born: 01/04/00 Tattoo: 2079 P/

Consignor: DOUG HALL REGISTERED HEREFORDS - FRUITA, CO

Sire: Gerber Watchfire 117F
PGS: Feltons 517
Dam: Monument 819 9879
MGS: OXH Domino 5362

PAP	SC	HT	PELV
54	34	48.5	162

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
72	.1	597	37	1074	67	20	38

ADG: 2.57 **Ratio**: 89 **WDA**: 2.69 Great Calving Ease Bull and EPDs

Ultrasound data will be available on Sale Day

29-2 Bar 7N Marker 018 100% Hereford

Born: 02/23/00 Tattoo: 018 H/

Consignor: BAR 7 N - MATHESON, CO

Sire: SR Marker 803
PGS: OXH Mark Domino 0088
Dam: MIA Performer 214
MGS: DH Overtime 926 4ET

PAP	SC	HT	PELV
39	32	49.9	186

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
84	.7	615	34	994	62	10	28

ADG: 2.69 **Ratio**: 93 **WDA**: 2.71 Carcass info on siblings available. Low to modest BW and low BW EPD. Full eye pigment. Dam is AHA Dam of Distinction.

26-4 TR Advance Domino 0135 100% Hereford

Born: 02/19/00 Tattoo: 0135 H/

Consignor: LAZY AKT LONG VIEW RANCH - BAYFIELD, CO

Sire: HH Advance 418D
PGS: HH Advance 249B
Dam: SR 1171 PRCSS 5126
MGS: OXH Mark Domino 1171

PAP	SC	HT	PELV
38	32	48.7	182

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
88	1.3	608	24	984	40	18	30

ADG: 2.60 **Ratio**: 90 **WDA**: 2.68 Dam is AHA 2000 Dam of Distinction

18-1 % Simm Cross*

Born: 03/01/00 Tattoo: 026 P/Black

Consignor: GARY CONRAD - HESPERUS, CO

Sire: 4288 - PB Simmental
PGS:
Dam:
MGS:

PAP	SC	HT	PELV
40	41	51.6	185

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
98	NA	776	NA	1264	NA	NA	NA

ADG: 3.17 **Ratio**: 108 **WDA**: 3.40

16-1 REDD Tarpaper 0066 % Composite

Born: 02/17/00 Tattoo: 0066 DH/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: Redd Hatfield C 8160
PGS: HDF 921 Hatfield Desert
Dam: REDD MS R Prosper H032
MGS: RDD PC Prospect 4428

PAP	SC	HT	PELV
37	34	49.2	185

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
82	NA	633	NA	1132	NA	NA	NA

ADG: 3.01 **Ratio**: 103 **WDA**: 2.90

23-4 7X Bar Mr. Ratifier 4K 100% PHereford

Born: 03/02/00 Tattoo: 4K P/

Consignor: 7X BAR REGISTERED HEREFORDS - HOTCHKISS, CO

Sire: Feltons Matthew 597
PGS: F208 Prospector 376
Dam: DH Protoette J1
MGS: HH Advance 9012 Y

PAP	SC	HT	PELV
40	33	47.1	136

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
94	3.2	632	30	947	51	20	35

ADG: 2.71 **Ratio**: 94 **WDA**: 2.57

27-2 UA RCC Prospector 0467 100% Hereford

Born: 02/06/00 Tattoo: 0467 H/

Consignor: V-V RANCH (DAVID SCHAFER) & REININGHAUS CATTLE COMPANY - COTTONWOOD, AZ

Sire: RCC Prospector 7001
PGS: RCC Prospctr 3030 1ET
Dam: RCC Prospecta 5050
MGS: RCC Prospector 0017

PAP	SC	HT	PELV
42	34	45.3	140

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
	3.7	512	21	943	39	10	20

ADG: 2.54 **Ratio**: 88 **WDA**: 2.34

18-3 OCR 7+ Y0217 % 7+ Composite

Born: 03/17/00 Tattoo: 0217 S/Red

Consignor: OR COMPOSITES - RANGELY, CO

Sire: A48 RX3
PGS:
Dam: OCR MS Kard
MGS:

PAP	SC	HT	PELV
36	35	51.1	200

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
83	NA	611	NA	1087	NA	NA	NA

ADG: 3.27 **Ratio**: 112 **WDA**: 2.99 Seven Cross bulls are 1/4 RA, 1/4 Saler, 3/8 Here, 1/8 Red Holstein. Developed to combine rangeability, feedlot gain, carcass, low PAP and good disposition.

18-5 OCR 7+ Y0283 % 7+ Composite

Born: 03/05/00 Tattoo: 0283 H/RWF

Consignor: OR COMPOSITES - RANGELY, CO

Sire: A48 RX3
PGS:
Dam: OCR Miss Dest
MGS:

PAP	SC	HT	PELV
42	37	50.5	188

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
73	NA	667	NA	1079	NA	NA	NA

ADG: 3.12 **Ratio**: 107 **WDA**: 2.96 Seven Cross bulls are 1/4 RA, 1/4 Saler, 3/8 Here, 1/8 Red Holstein. Developed to combine rangeability, feedlot gain, carcass, low PAP and good disposition.

Ultrasound data will be available on Sale Day

VITALIX Product	Protein %	Fat %	Fiber %	Ca%	P %	Mg %	NaCl %	K %	Ippm	Cu ppm	Se ppm	Mn ppm	Zn ppm	Vit A IU/lb	Vit D_3 IU/lb	Vit E IU/lb	Recommended usage	Feeding Recommendations
★ Conditioner #1	21	6	1.50	0.90-1.20	2.20	3.00	0.00	6.00	50	600	12	1500	1800	200,000	40,000	150	Formulated for cattle being fed grass hay, dry grass, pasture, corn stalks, or other low protein roughage	1/3 to 1/2 lb. per 1000 lb. animal per day. As a guide, one 125 lb. tub for every 20-30 head of cattle or one 250 lb. tub for every 30-40 head of cattle
★ Conditioner #1CU	21	6	1.50	0.90-1.20	2.20	3.00	0.00	6.00	50	1000	12	1500	1800	200,000	40,000	150		
★ Pasturelix #2	11	3	0.50	5.75-6.25	0.10	4.00	6.00	5.00	20	200	7	500	600	65,000	12,500	50	Formulated for cattle on lush green pastures	1/4 to 3/4 lb. per 1000 lb. animal per day. As a guide: one 125 lb. tub for every 10-20 head of cattle or one 250 lb. tub for every 20-30 head of cattle
★ Performance #3	30	5	1.80	0.50-0.80	1.60	2.00	0.00	7.00	35	400	7	950	1200	130,000	30,000	100	Formulated for cattle being fed grass hay, dry grass, pasture, corn stalks, or other low protein roughage.	1/2 to 1 lb. per 1000 lb. animal per day. As a guide: one 125 lb. tub for every 10-20 head of cattle or one 250 lb. tub for every 20-30 head of cattle
★ Conditioner #3CU	30	5	1.80	0.50-0.80	1.60	2.00	0.00	7.00	35	600	7	950	1200	130,000	30,000	100		
● HI Engery #4	22	6.5	5.00	1.40-1.70	1.00	1.00	0.00	5.50	13	150	5	350	450	45,000	9,000	35	Formulated for cattle to replace cubes or cake	1/2 to 1 1/2 lb. per 1000 lb. animal per day. As a guide: one 125 lb. tub for every 10-20 head of cattle or one 250 lb. tub for every 20-30 head of cattle.
★ Fly ContROL #5 Rabon (2.1g/lb)	19	6	1.00	0.75-0.95	2.00	3.00	0.00	6.00	28	300	12	750	900	100,000	20,000	80	Formulated to prevent development of horn flies, house flies, face flies, and stable flies in manure of treated cows.	1/3 to 1/2 lb. per 1000 lb. animal per day. As a guide: one 125 lb. tub for every 20-30 head of cattle or one 250 lb tub for every 30-40 head of cattle
● Mineralix #7	9	4	0.50	5.75-6.25	6.00	3.00	3.50	5.00	50	1100	27	1650	1950	200,000	40,000	155	Formulated to prevent development of horn flies, house flies, face flies, and stable flies in manure of treated cows.	Rabon g/lb *4.45
● Mineralix #7	9	4	0.50	5.75-6.25	6.00	3.00	3.50	5.00	50	1100	27	1650	1950	200,000	40,000	155	Mineral supplement formulated for cattle on good roughage where extra mineral is needed	2 to 4 oz. per 1000 lb. animal per day. As a guide: one 125 lb. tub for every 20-30 head of cattle, or one 250 lb. tub for every 30-50 head of cattle.

VITALIX INC. ™

CALF MASTER NO. 6

This supplement contains a proprietary blend of fermentation products as enzyme enhancers, and is specially formulated for calves during and after weaning.

No Selenium!

GUARANTEED ANALYSIS

Crude Protein, not less than	15.00%
Crude Fat, minimum	5.00%
Crude Fiber, maximum	8.00%
Calcium (Ca), minimum	1.00%
Calcium (Ca), maximum	1.20%
Phosphorus (P), minimum	0.75%
Magnesium (Mg), minimum	0.70%
Sodium (Na) (Salt)	0.00%
Potassium (K), minimum	6.50%
Iodine (I), minimum ppm	40
Copper (Cu), minimum ppm	450
Manganese (Mn), minimum ppm	1100
Zinc (Zn), minimum ppm	1300
Vitamin A, minimum IU/lb	150,000
Vitamin D_3 minimum IU/lb	30,000
Vitamin E, minimum IU/lb	115

INGREDIENTS

Beet Molasses, Soy Hulls, Vegetable Fat, Fermentation Products, Monocalcium Phosphate, Magnesium Oxide, Vitamin A Supplement, Vitamin D_3 Supplement, Vitamin E Supplement, Calcium Pantothenate, Thiamine Hydrochloride, Pyridoxine Hydrochloride, Zinc Oxide, Copper Chloride, Manganous Oxide, Cobalt Carbonate, Riboflavin Supplement, Vitamin B_{12} Supplement, Niacin, Choline Chloride, Biotin, Folic Acid, Ascorbic Acid and Ethylenediamine Dihydriodide.

FEEDING RECOMMENDATIONS

½ to 1 ½ lb. per calf daily.
As a guide: one 250 lb. tub to every 10-15 head.

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Net Wt. 250 lbs. (113.4 KG.)

Warning: Do not feed to sheep due to possible copper toxicity

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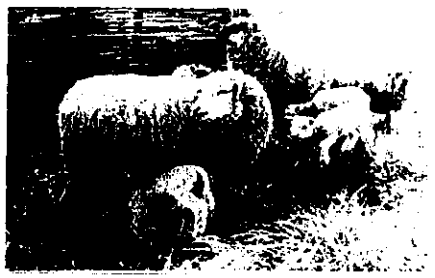

16-5 REDD Tarpaper 0174 % Composite

Born: 02/20/00 Tattoo: 0174 P/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: Redd Hatfield C 8160
PGS: HDF 921 Hatfield Desert
Dam: Redd MS Rambler H507
MGS: Unknown

PAP	SC	HT	PELV
37	32	49.8	178

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
74	NA	608	NA	1086	NA	NA	NA

ADG: 2.86 **Ratio**: 98 **WDA**: 2.78

16-2 REDD Tarpaper 0092 % Composite

Born: 02/20/00 Tattoo: 0092 DH/Red

Consignor: REDD RANCHES - PARADOX, CO

Sire: Redd Hatfield C 8160
PGS: HDF 921 Hatfield Desert
Dam: Redd MS R Desert H346
MGS: Redd Desert 4146

PAP	SC	HT	PELV
39	34	47.8	174

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
75	NA	588	NA	1004	NA	NA	NA

ADG: 2.77 **Ratio**: 95 **WDA**: 2.56

18-4 OCR 7+ Y0738 % 7+ Composite

Born: 03/12/00 Tattoo: 0738 H/RWF

Consignor: OR COMPOSITES - RANGELY, CO

Sire: A48 RX3
PGS:
Dam: OCR MS Jet
MGS:

PAP	SC	HT	PELV
38	29	48.7	184

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
83	NA	566	NA	1002	NA	NA	NA

ADG: 3.03 **Ratio**: 103 **WDA**: 2.64 Seven Cross bulls are 1/4 RA, 1/4 Saler, 3/8 Here, 1/8 Red Holstein. Developed to combine rangeability, feedlot gain, carcass, low PAP and good disposition.

18-2 OCR 7+ Y0839 % 7+ Composite

Born: 02/23/00 Tattoo: 0839 S/RWF

Consignor: OR COMPOSITES - RANGELY, CO

Sire: F 1127 RX3
PGS:
Dam: OCR MS 25E
MGS:

PAP	SC	HT	PELV
41	33	44.9	164

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
73	NA	589	NA	979	NA	NA	NA

ADG: 2.78 **Ratio**: 95 **WDA**: 2.51 Seven Cross bulls are 1/4 RA, 1/4 Saler, 3/8 Here, 1/8 Red Holstein. Developed to combine rangeability, feedlot gain, carcass, low PAP and good disposition.

Ultrasound data will be available on Sale Day

FOUR CORNERS HEIFER DEVELOPMENT PROGRAM

The Four Corners Heifer Development Program was initiated in an effort to offer breeders a place to develop and market their replacement heifers. There is no requirement for the participating breeders to sell their heifers. They may simply choose to have their heifers developed and then take them home. The program was designed to develop heifers not to test them. Therefore, you will not find any gain information for any of the heifers listed in the catalog. The heifers were not fed for maximum gain. The heifers were fed a ration consisting of oats, corn and alfalfa/grass hay. The heifers were fed to gain 2 lbs/day. These heifers will be ready to take home and breed at the time of sale. Pulmonary Arterial Pressures (PAP), reproductive tract scores (RTS), and pelvic areas are provided on each of the heifers.

The heifers will be offered for sale immediately after all the bulls pass through the sale ring. They will be sold by breed in the order they are listed and in groups according to the owners specifications. This means an owner may sell his/her heifers as a group or offer the buyer choice of on or more. All heifers are being sold as open and ready to breed. All heifers listed will sell provided no problems arise between the printing of the sale catalog and sale day.

30-1 **LPB Lonk K05** 100% RAngus
Born: 03/16/00 Tattoo: K05 /
Consignor: LPB RED ANGUS - FARMINGTON, NM
Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: LPB Topper 823 H04
MGS: RDD Topper C302

PAP	RTS	HT	PELV
37	4	50.1	170

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
79	.4	616	33	847	50	14	31

30-2 **LPB Lonk K09** 100% RAngus
Born: 04/07/00 Tattoo: K09 /
Consignor: LPB RED ANGUS - FARMINGTON, NM
Sire: Lonk Revolution H805
PGS: BJR JR 107
Dam: LPB Topper F04
MGS: RDD Topper C302

PAP	RTS	HT	PELV
39	4	49.3	170

BIRTH WT	BIRTH EPD	WEANING WT	WEANING EPD	YEARLING WT	YEARLING EPD	MILK EPD	TM EPD
78	-.4	631	29	820	45	14	29

Evaluation of Growth, Feedlot and Subsequent Carcass Data obtained from Steers Produced at the San Juan Basin Research Center

B.A. LaShell, D.D. Zalesky, D.W. Schafer [1]

1 Present address: University of Arizona, V-V Ranch, Cottonwood, AZ

INTRODUCTION

As more pricing grids become available to producers, we are looking for ways to quantify and predict carcass performance without sacrificing feedlot performance. While collecting actual carcass data on a wide assortment of cattle is probably the most reliable method, it can be expensive (upwards of $6.00 per head) and difficult to obtain. Inter mountain cow-calf producers ship their calves to feedlots in NM, TX, Eastern CO or NE. While some producers ship their calves immediately after weaning, others may winter their calves and place them in the feedlot as yearlings. Information on feedlot performance is readily available and easy to interpret. However, carcass data often gets "lost" before getting back to the producer or simply is not interpreted correctly. This study hopes to quantify factors affecting feedlot performance and subsequent carcass data.

MATERIALS AND METHODS

Cattle Management. Data was collected on calves born at the San Juan Basin Research Center (SJBRC) in Hesperus, CO from 1993-1999. Calving occurred from late January through mid-April with weaning at approximately 7 months of age in October. Each year 45 of the purebred bull calves with above average performance were placed in the Four Corners Bull Test and an additional ten steers representing two sire groups were placed on feed at the Great Western Beef Expo. The remaining steers were backgrounded and fed in a local feedlot. Heifer calves were developed until the following spring when culling criteria was applied. While some heifers were placed in feedlots, no heifer data was analyzed in this study.

Growth, feedlot and carcass data were collected and analyzed on all available steer calves (n=509). Beginning in 1998, steers were sent to the feedlot in two different groups, therefore data were analyzed using a combination of birth year and slaughter month (BY/SLGR). **Table 1** shows the breakdown of observations, age on feed, age off feed and days on feed by BY/SLGR. Steers were fed at the Navajo Agricultural Products Industry (NAPI) feedlot in Bloomfield, NM for an average of 163 days. Cattle were shipped to Friona, TX to be processed at the Excel plant. Carcass data was collected by Cattlemen's Carcass Data Service.

Traits analyzed. Growth data available included birth weight, actual weaning weight and adjusted 205 day weaning weight (ADJWW). Preliminary analysis indicated that ADJWW was the best growth trait indicator as it relates to feedlot and carcass data. Feedlot data included age on feed (Age), weight on feed (onfeedwt), market weight (marketwt), average daily gain (ADG) and Total Gain.

Carcass data collected included hot carcass weight (HCW), marbling score, %KPH, backfat, ribeye area (REA) and the resulting yield grade (YG). Dressing percentage (DP) was calculated using HCW and market weight. Marbling score was a two digit number with the first number referring to the abbreviated marbling category and the second number representing the percentage of marbling within that marbling category. Abbreviated marbling categories range from 1 for practically devoid and 9 for abundant. Therefore a sample marbling score recorded in this analysis of 44 would refer to Small 40. These numbers can easily be converted to quality grade equivalents. Marbling scores and %KPH were not available on 1994 born calves. Yield grade was calculated using a weighted index of HCW, REA, KPH and backfat.

Breed Designation. The SJBRC began a project in 1985 to develop phenotypically alike but genetically diverse sources of germ plasm for composite cattle breeding. These composites were developed using the Hereford and Angus cow base at the station. The resulting composites, System 1 and System 2 were complete in 1991 and 1993, respectively. The System 1 is comprised of 1/4 Marc III, 1/4 RX3, 1/4 CASH and 1/4 Hereford and the System 2 cattle were 1/4 Brangus, 1/4 Barzona, 1/4 Beefmaster and 1/4 Angus. The System 1 cattle are still being produced while the System 2 herd was dispersed in 1996. Artificial insemination sires and initial clean up bulls of like breeds are used on SJBRC cows. Beginning in 1997, the late clean up bulls for all cows were two Charolais bulls. Preliminary analysis revealed 28 different breed compositions, therefore steers were grouped into similar breed categories (**Table 2**) to discern differences between the breeds used in each of the composites.

Statistical Analysis. The General Linear Models analysis of variances procedure of SAS (1996) was used in the analysis of independent variables which included birth year/slaughter month, breed category and grouped age of dam (2, 3, 4, 5-9 and 10+). On feed weight was included as a regression coefficient. Least squares means, regression coefficients and partial correlations were taken from this analysis. The General Linear Models analysis was also used to explore the birth year by breed interactions.

Preliminary analysis looking at the effects of both age and weight on feedlot and carcass traits determined that weight was a more reliable predictor. Therefore only on feed weight was used in the final model. Additional analysis within the System 1 and Hereford breed were

performed to quantify sire differences. Thirty-nine and 20 different sires were identified within the System 1 and Hereford calves, respectively. Observations per sire ranged from 1 to 18. Least square means for System 1 sires were obtained while the Hereford data was non estimable. Least Square means for each trait can be found in Table 3.

Table 1. Data Summary by Birth Year and Slaughter Month

BYSLGR *	Number	AgeOn	Ageoff	Dayson Feed
199301	73	518	661	143
199408	64	367	542	175
199506	49	285	476	191
199608	70	366	526	160
199701	77	512	665	153
199811	26	453	602	149
199802	56	550	684	134
199908	57	329	508	179
199910	37	362	543	181

*** Birth year combined with month of slaughter**

Table 2. Data Summary by Breed Combination

Breed	Number	AgeOn	AgeOff	Days On Feed
Angus/Rangus	37	426	590	164
Charolais Cross	51	377	543	165
H/PH	53	458	615	157
Sys1Breeds	49	398	564	166
Sys2Breeds	35	402	565	162
System 1	198	425	587	161
System 2	45	376	542	166
Misc Crossbreds	41	438	597	158

Table 3. Least Squares Means for Growth and Carcass Traits

ADJWW lbs	ADG (lb/day)	Market Wt lbs	TotalGain lbs	HCW lbs	Marbling units	KPH %	Backfat in	REA in^2	YG units	DP %
535	4.13	1339	670	810	4.05	2.22	0.52	13.8	2.83	60.5

RESULTS AND APPLICATION

Impact of Birth Year/Slaughter Month on Growth, Feedlot and Carcass Traits. Birth year/slaughter month combination was highly significant for all growth, feedlot and carcass data included in this study. Other than a slight increase in DP, few trends were found over the six year period. However year differences were definitely found. Calves born in 1994 and 1996 performed better in the feedlot than those from 1995 and 1998. The dispersion of the System 2 herd in 1996 and the addition of Charolais bulls in 1997 definitely attributed to the birth year differences found in this study. A significant Birth year by Breed interaction was also found indicating that the addition and dispersion of breeds over the years did have an impact on the overall analysis.

Impact of Breed on Growth, Feedlot and Carcass Traits. Breed of calf was highly significant for all traits except KPH and DP ($P<.05$). The British breeds (Angus, Red Angus and Hereford) had lighter ADJWW while the Charolais calves had the heaviest ADJWW. Feedlot data indicated that Charolais cross calves had the highest ADG, market wt and total gains while the System 2 calves had the poorest feedlot performance. Hereford calves gained better than all of the Sys1breeds, Sys2breeds, System 1 and 2 composites.

The A/RA calves had the highest marbling scores while the Sys1breeds, Sys2breeds and System 2 composite had the lowest scores. While the System 2 cattle were 1/4 Angus, the remaining breeds are primarily Bos Indicus. Charolais calves came out of the feedlot with the least amount of backfat, largest REA and therefore resulted in the lowest yield grades. Even though all of the Charolais calves were out of the same two sires, literature results support the high incidence of heavy muscled, lean carcasses.

Sys1breeds and System 1 composites also had larger REAs. Meanwhile, Sys2breeds and System 2 composites exhibited the lowest REA measures and poorest YG in the study. These results are supported by other studies that found that carcasses from cattle with Brahman breeding have smaller ribeyes than those from British breed carcasses (Damon et al., 1960, DeRouen et al., 1992). A difference in DP between the British breeds and those containing Bos Indicus breeding was also found. The higher dressing percentages found in the System 2 and Sys2breeds is supported by numerous studies (Koch et al., 1982; Peters and Vesely, 1988).

Impact of Age of Dam (AOD) on Growth, Feedlot and Carcass Traits. AOD was only significant for marbling score and backfat. Those calves out of 2-year-old dams had the highest marbling scores while those from 10+ dams had the lowest. These values may be a result of the increased selection pressure, related to carcass traits, being placed on our cow herds in more recent years.

Impact of On Feed Weight on Growth, Feedlot and Carcass Traits. Many calf producers use weight as the deciding factor for placing cattle on feed. These analysis found that weight was a more reliable predictor of feedlot and carcass performance than was age. Results found in Table 4 indicate that for each 10 pounds heavier a calf was when they went on feed, it had weighed 3.7 lb more at weaning. These figures indicated compensatory gain was a factor. For each additional 10 pounds of onfeed weight, calves gained .012 more per day resulting in an additional 2 lb total gain on feed. Analysis of the carcass traits revealed that for each additional 10 pounds of on feed weight, REA increased by .056 square inches and DP decreased by .061%. On feed weight did not appear to have an effect on marbling score, KPH, backfat or YG.

Table 4. Regression Coefficients for Growth and Carcass Traits (per unit)

	ADJWW		ADG		Market Wt		Total Gain		HCW		Marbling	KPH	Backfat	REA		YG	DP	
	lbs		lb/day		lbs		lbs		lbs		units	%	in	in^2		units	%	
OnFeed Weight	0.37	**	0.0012	**	1.20	**	0.20	**	0.64	**	0.0006	0.0003	0.00007	0.0056	**	0.0008	-0.0061	**

** P < .01 * P < .05

Y= BY/SLGR + Breed + AOD + bOnFeed WT

Partial Correlations between Growth, Feedlot and Carcass Traits.

Understandably ADG had a very high positive relationship with marketwt and total gain. ADG was also positively related to marbling, backfat, REA and YG (.15, .19, .24 and .17, respectively). Marketwt and total gain showed similar significant relationships to these carcass traits as well. Those calves with increase ADG, total gain and marketwt had a slight tendency to have carcasses with higher marbling scores, more backfat, larger REA and higher YG.

Within carcass traits, marbling had a small positive relationship with backfat a d YG (.16 and .20, respectively) but showed no relationship with either REA or DP in this study. As expected KPH had a slight positive relationship with backfat and subsequently YG. Backfat had a small negative relationship with REA indicating that when calves are fed a fixed number of days, heavier muscled calves have a slight tendency to have less backfat and higher DP. Calves with more backfat also had a small positive increase in DP.

As expected, YG was correlated to the components used to calculate it. HCW and KPH had small positive correlations (.17 and .20, respectively) while backfat had the greatest influence on calculated YG with a .74 correlation. Furthermore, REA and YG had a high negative correlation (-.69) indicating that heavier muscled calves at a constant weight and backfat will have lower YG.

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Calf Colostral Antibody Study
Dr. Doug Zalesky San Juan Basin Research Center

A study is being initiated with the 2001 calving season at the San Juan Basin Research Center to study the lifetime health of calves. Heifers will calve primarily during the months of February and March with the cows calving during the months of March and April. Initiation of this study with the 2001 calving season will provide us with a baseline data set with which to compare in subsequent years.

Purpose of the Study

The purpose of this study is to identify factors that affect total protein (colostrum absorption) levels in beef calves at birth.

Introduction

Calves are born with very little immunoglobulin, which is important to limit infections and maintain health. To increase the concentration of immunoglobulin in their blood, calves must absorb immunoglobulin from colostrum, the first milk produced by their dam. After twenty-four hours, calves' ability to absorb immunoglobulin decreases dramatically, so it is important that calves ingest and absorb an ample amount of colostrum soon after birth.

Most studies of calves and colostrum have occurred in dairy herds, but passive transfer (the absorption of immunoglobulin from colostrum) is important to the health and performance of beef calves as well. Dairy calves are often fed pooled colostrum rather than allowed to nurse directly from their dam in order to reduce the amount of failure of passive transfer. In contrast, studies of beef calves have agreed that natural suckling promotes better passive transfer. These biological differences and differing managaement styles of dairy and beef herds often limit the application of dairy calf studies to beef calves. Previous studies in Nebraska and South Dakota suggest that colostrum intake at the time of birth may significantly impact the immune system competence of a calf for the duration of it's life. The data from these studies has shown significantly higher incidences of morbidity and mortality for calves, both pre- and post-weaning, that did not receive adequate colostrum at birth.

The purpose of this study is to identify factors that contribute to low total protein in beef calves to help producers recognize calves at high risk for poor colostrum absorption. Producers can then make management decisions to help improve immunoglobulin absorption and increase the health of their herd.

Materials and Methods

Blood samples will be taken from calves at approximately one day after birth. After recording the date and time of sample collection, samples will be centrifuged and serum stored frozen. Total protein will be measured in the serum samples using refractometry. Serum total protein has been shown to closely correlate with the amount of immunoglobulin the calf absorbed from colostrum.

Calving information such as birth weight, birth date, time of birth, sex of calf, single/twin birth and dam age will be recorded. Calving assistance and nursing assistance will also be recorded. Nursing assistance will be indicated if the calf was helped to nurse or was fed some replacement colostrum near birth. Additionally, cow conditions score and environmental conditions will be recorded as well.

Health records will be kept on all calves from birth throughout the pre- and post-weaning phases. Comparisons will be made between calves receiving adequate and inadequate colostrum.

Blood samples will also be taken from calves at branding and weaning time to evaluate antibody titers to various diseases that the calves have been vaccinated for at various times during their lives. Comparisons will be made between those calves identified as not having received adequate colostrum at birth to those that received adequate colostrum.

This study will continue for three years and will coincide with the calving season study. Data from the work conducted in South Dakota also indicated that calves born later in the season (late April and May) were more likely to receive adequate colostrum and subsequently had less health problems during their lifetime. We will be able to more adequately assess that possibility with the two calving seasons (March/April vs. May/June).

Sustainability of Matching Cows Nutrient Requirements With Nutrient Content of Grazed Forages.

Dr. Doug Zalesky San Juan Basin Research Center

Objectives of Project:

The objectives of this project are to determine the effect of time of calving season on:

1. performance of beef cows managed to optimize the use of forage production,
2. performance of calves from birth to harvest,
3. profitability and sustainability of matching cows nutrient requirements with nutrient content of grazed forages.

Reasons for undertaking work:

Profitability and long-term sustainability of ranching operations has declined significantly during the past several years. This decline has accelerated in more recent years due to increased input costs. Feed costs, especially harvested and purchased feeds, along with labor costs have contributed the most to the decline in profitability for ranching operations (Adams et al.; Selk, 2000). The continued decline in profitability and long-term sustainability of these operations has seen a continued exodus of independent producers from the industry. The decline in the number of independent producers is also negatively impacting rural communities and their economies as well. Data collected by Whittier, et al., (2000), indicates that cow/calf operations in Colorado are relying more and more on outside income to support the operation.

Prices received by producers have not kept pace with inflation or with rising input costs (equipment, services, feed, labor). Subsequently, profit margins have narrowed significantly, forcing producers to look at reducing input costs as a means to stay economically viable. Often, however, reducing input costs results in reductions in production or performance. The challenge for producers, then becomes finding ways to reduce input costs, while maintaining or even improving productivity and production efficiency. Management changes, such as proposed in this project, offer a potential means to reduce input costs, maintain productivity and subsequently increase profitability and long-term sustainability.

Traditional beef production systems have relied on harvested forages, which are subsequently, fed to cows to meet their nutritional requirements. These systems have also attempted to match forage to the cow through practices such as seeding annual forages or seeding pastures with non-native plants. Dependency on high-cost harvesting and seeding equipment in these systems has contributed to lower profit margins. These traditional type systems are predominat in the intermountain regions of Colorado (Whittier, et al., 2000). The most typical time of year for calving in this region is late winter and early spring.

The production and economic performance data collected in this project would serve as a basis for recommendations regarding the potential profitability and long-term sustainability of ranching operations. Results from this project will determine if matching cow nutrient requirements with forage nutrient production will reduce input costs, maintain or increase productivity and most importantly, if profitability is improved.

Previous work:

Studies conducted in the Northern Great Plains region support that changes in traditional calving time management can potentially improve profitability. Recent work in Nebraska (Adams et al., 1997) and South Dakota (Pruitt et al., 2000) have indicated that the use of non-traditional, alternative management decisions regarding, breeding, calving and weaning dates may result in improved profitability without sacrificing cow herd performance. In both studies, time of calving for the later calving cows, coincided with high quality forage production. These studies, have also demonstrated that no one calving and breeding season fits every operation and that available resources (forage, labor, etc.) need to be evaluated prior to changing managerial dates.

Adams and co-workers (1997) compared the productivity and economics of two calving seasons. The more "traditional" season had cows calving in March and April, while the "non-traditional" calving season had cows calving in June and July. Productivity of the cow herds as measured by pregnancy and weaning rate were not different. While steer weaning weights were 50 to 60 pounds lighter, on the average, for the June-born calves, compared to the March-born calves, prices received for the lighter steers was significantly higher, reflective of the weight-price ratio typically found in the industry. Gross value per weaned steer calf was similar ($410.00 versus $409.00) for the two groups. Input costs for the two groups were different with

less hay fed to the June-calving groups (227 lb./yr) versus the March-calving cows (3,947 lb./yr). Costs per weaned calf were $252.00 for the March-born calves compared to $175.00 for the June-born calves. The net profit per weaned steer calf was $158.00 for March-born and $234.00 for June-born calves. A similar difference was found for heifer calves in this study. The results of this study support the idea that managerial decisions related to time of breeding, calving and weaning can impact profitability.

Pruitt et al., (2000) found similar preliminary results in a project conducted in South Dakota. Cows in this study were allocated to calve in the more "traditional" March-April time frame or to calve in the "non-traditional" time of May-June. Similar pregnancy and weaning rates were reported with lighter calves at weaning from the later-calving group also reported. Pruitt et al., (2000) indicated a greater price potential for the lighter calves with calculations indicating similar to slightly higher incomes per exposed cow for the May-calving cows. In the preliminary report, Pruitt et al., (2000) indicated a possible reduction in input costs through reduced dependence on equipment, facilities and labor.

Procedure:

The San Juan Basin Research Center offers a different environment from the studies conducted in Nebraska and South Dakota. The center sits at an elevation of 7,600 feet and is considered an intermountain environment. The annual average growing season is 100 days with annual precipitation at 18.5 inches. Snowfall during the winter and early spring months can be extensive. Cool season forage production that can be grazed by cattle is available in early to mid-May.

In the spring of 2001, the cows (approximately 300 head) at SJBRC will be randomly assigned to one of two treatment groups by age and breed. Calves will either be assigned to calve in March/April or May/June. Complete calving, breeding, weaning and marketing data will be recorded. Additionally, feed and labor inputs will also be recorded for each of the treatment groups in order for a complete economic analysis of the project to be conducted. In conjuction with this project, a companion project will be conducted to evaluate calf lifetime health as it relates to time of calving.

This project will be conducted for a period of five years in order that a complete and accurate analysis of the calving seasons and the economics associated with the calving seasons is completed.

Comparison of Banding and Knife Cut Castration Methods in Beef Cattle

B.A. LaShell, A. Wilson[1], D.D. Zalesky, D.R. Selzer and G. Conrad
[1] Fort Lewis College Department of Biology Student

INTRODUCTION

Castration of male calves is a common practice in modern agriculture. Castration decreases many of the management problems related to the aggressive and sexual behavior that bull calves often exhibit. Two prevalent castration techniques, banding and knife-cut, are examined in this study. While cutting has its benefits, banding is less painful to the animal and a much easier procedure to perform Studies have found that bulls typically gain weight fifteen percent faster than steers, because of higher testosterone levels. It has also been reported that when banding was done properly, it was easier to perform and less stressful on calves than cutting. The band on the scrotum sac tended to generate a more localized immune response than the surgical castration.

MATERIALS AND METHODS

Cattle Description and Treatment Management. Data was collected on 80 male calves born at the San Juan Basin Research Center (SJBRC) in Hesperus, CO in the Spring of 2000. Breeds included Hereford, Polled Hereford, System 1 composite and Charolais cross. One-half of the calves were knife cut while the other half were banded using the Callicrate Bander. Calves were randomly assigned to a treatment group across breed and age prior to weaning.

Calves were weaned and castrated at approximately 7 months of age on October 3, 2000. Post weaning weights were recorded on October 17th and 31st to determine 2 and 4 week post castration gains. Temperatures were taken on calves that gained less than 5 pounds and if warranted, calves were given 20 cc of LA200. One half of the calves in each treatment group were sent to Kraft Feedlot in Fort Collins, CO in early November. The remaining calves continue to be backgrounded at SJBRC. Feedlot and carcass data will be collected on these steers and analyzed accordingly.

Statistical Analysis. The General Linear Models analysis of variances procedure of SAS (1996) was used in the analysis of independent variables which included treatment, and grouped age of dam (AOD) (2, 3, 4, 5-9 and 10+). Age was also included as a regression coefficient. Least squares means, regression coefficients and partial correlations were taken from this analysis. Traits analyzed included actual weaning weight (ACTWW), 10/17 Weight (WT 1), 0-2 week gain (GN 1), 10/31 weight (WT 2), 2-4 week gain (GN 2) and total gain (TOTGN).

RESULTS AND APPLICATION

Impact of Treatment on Weight and Gains. Least squares means for the two treatments (banded and knife cut) are presented in Table 1. It shows that at weaning the banded calves had a 10 pound advantage. Calves were randomly assigned to their treatment groups prior to this weight. While, this initial difference was not significant, treatment was significant for WT1. At WT 1 the banded calves weighed 19 pounds more than the cut calves. At this 2-week post castration weight, none of the banded calves were found to have elevated temperatures while 7 of the cut calves were treated with LA 200.

At 4-weeks post weaning, the weights between the two groups were no longer significant and the difference had fallen to 7 pounds. Health records taken at this weight show that 11 of the banded calves were treated with LA 200 while only 2 of the cut calves were treated. The results of this study indicate that banded calves weighed significantly more at two weeks post weaning. This could be attributed to a higher incidence of infection found in the cut calves that could have suppressed their weight. However, by the second weight, more infections were found in the banded calves and the cut calves were "catching up" in weight.

While the banded calves gained more weight during the first 2 weeks, the difference was not significant. However, the gain differences that occurred between WT1 and WT2 were highly significant. Knife cut calves gained 11.2 pounds more than the banded calves during this period. The total gain difference of 19.8 for banded calves and 22 pounds for knife cut calves was not significant.

Impact of Age of Dam (AOD) on Weight and Gains. Since weights and gains were not adjusted in this analyses, AOD was highly significant for all weight traits (Table 1). All weights from calves out of 2 and 3-year olds were consistently lower than those of the 4 and 5-9 group. Since these weights are still affected by the milk production of the dam, weights from calves whose dams over 10 years of age were also lower than the peak production of the 4 and 5-9 group. While, age of dam did not have a significant effect on either post-weaning gain period, we did see a trend for the calves out of 10+ dams to gain less during the first two weeks after weaning.

Table 1. Least Squares Means for Weight and Gains by Treatment and AOD							
	# Of Obs	ACTWW lbs	WT 1 lbs	GN 1 lbs	WT 2 lbs	GN 2 lbs	TOTGN lbs
Treatment			*			**	
Banded	40	487	511	24	506	-4.2	19.8
Cut	40	477	492	15	499	7	23
Age of Dam			**	**		**	
2	12	415	438	22	439	1.8	24.2
3	13	495	517	21	520	3.9	25.7
4	9	520	548	28	546	-2.8	25.9
5 to 9	38	513	536	23	535	-1.5	21.5
10 +	8	513	523	9	524	1.5	11.5

** P < .01 * P < .05

Y= Treatment + AOD + bAge

Impact of Age on Weight and Gains. Table 2 shows the regression coefficients found in this study. Results indicate that for each day older a calf was at weaning, it weighed an additional 1.74 pounds. While age was significant for both post-weaning weights, the magnitude remained very similar to what we saw at weaning. This supports the results showing that post-weaning gain was not affected by age of calf in this study.

Table 2. Regression Coefficients for Weights and Gains (per unit)										
	ACTWW lbs		WT 1 (lb/day)		GN 1 lbs	WT 2 lbs		GN 2 lbs		TOTGN lbs
Age	1.74	**	1.78	**	0.04	1.68	**	-0.10		-0.06

** P < .01 * P < .05

Y= Treatment + AOD + bAge

Partial Correlations. The relationship between actual weaning weight and both post weaning weights was very strong and positive (.91). These significant correlations indicate that higher weaning weights resulted in higher post weaning weights at both 2 and 4 weeks. Actual weaning weight had little to no correlation to gain in this study.

WT 1 had a significant and slightly positive (.38) correlation with GN 1 and TOTGN but no correlation with GN 2. Additionally, GN 1 had a slightly positive (.31) correlation with WT 2 and a slightly negative (-.22) correlation with GN 2. These results indicate that those calves that gained more during the first period weighed more at the second weight but gained less during that second period.

DISCUSSION AND SUMMARY

Results from this study indicate that banded calves have an initial advantage 2-weeks post weaning over the knife cut calves. However, by WT2, the banded and knife cut calves weights were no longer significantly different. Cut calves "caught up" to the banded calves in total weight. There was no significant difference between the banded and cut calves during GN 1. However, there was a difference in GN 2 between the banded and cut calves.

Costs associated with each method of castration can be divided into direct and indirect costs. Direct costs associated with banding include $1.97 per band versus a nominal cost for scalpels with the knife cut method. Indirect costs include both labor and herd health costs. An experienced bander can place the band on a calf in approximately 1.5 minutes while the knife cut castration takes at least 4.5 minutes. This results in a 3 minute per calf time savings. With 100 calves, this would equate into a 300 minute (5 hour) reduction in processing time. Additional indirect costs for health care include $2.00 for each 20cc shot of LA 200 that was administered.
In future studies, we will record body temperature on all calves at both the 2 and 4 week post weaning weights. This will reduce bias related to health records and weight gain. By doing so, we will be able to further analyze the incidence of infection in both the banded and cut calves.

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