

# 1998-99 Utah State University Ranch to Rail Summary Report

Utah State University Extension's Ranch to Rail program is designed to give cattle producers information on post-weaning feedlot performance and carcass data enabling them to better market their calf crop. It is not intended to promote retained ownership programs and it is not intended to compare or promote breeds or breeders. Rather, it gives producers the opportunity to see how their cattle fit into beef production and what changes in management or selection they must make to remain competitive. Only steer calves from the 1998 calf crop were eligible to be included in the program.

The 1998-1999 Ranch to Rail program included entries from 24 ranches from all areas of Utah and Eastern Nevada. The 92 head enrolled in the program were received at Johnson Feedlot in Aurora, Utah in early November with the program beginning on November 18th. When they arrived at the feedlot the steers were eartagged, weighed, processed and assigned an in-value based on current market prices received for steers at Producers Livestock Marketing Service in Salina. The steers were sorted into three feeding groups based on frame size, body type and weight. They were then placed on a warm-up ration for two weeks before the program officially began. Management relative to feeding times, medication and rations during the feeding period was similar to other calves in the feedlot.

## Prices Used to Determine In-Values

Weight Range	Price
400 to 449	\$80.00
450 to 499	\$79.00
500 to 549	\$78.00
550 to 599	\$76.00
600 to 649	\$74.00
650 to 699	\$72.00
700 to 749	\$68.00
750 to 799	\$66.00
800 to 849	\$65.00

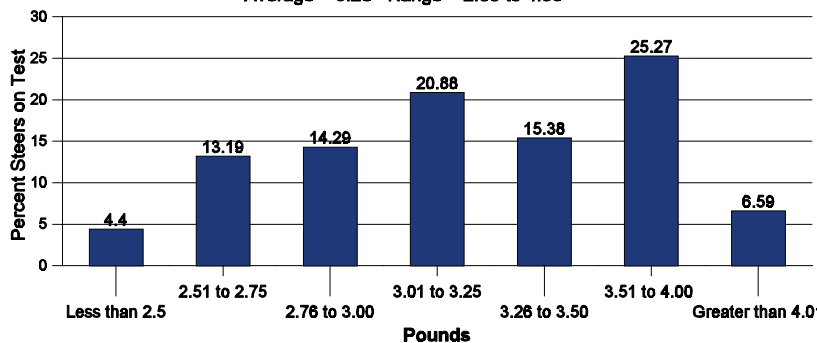
As the calves passed 800 pounds, each individual steer was scanned via an ultrasound scanning device and the data was entered into software from Kansas State University to determine the optimal marketing window taking into account both economic and performance factors. As individuals reached the weights and body condition which have been identified as acceptable by the beef industry, they were again scanned to ascertain whether they were sufficiently finished to grade Choice. The ultrasound imagery combined with weight, breed characteristics and visual evaluation were used to determine when the cattle were to be slaughtered. The cattle were slaughtered and marketed through E.A. Miller Packing in Hyrum, Utah. Carcass data was collected approximately 48 hours after slaughter. Ribeye photos were taken of each carcass and these were sent to the owner of that steer along with the detailed performance and carcass data. Feed, yardage, processing and medical charges were financed by the feedlot. All expenses were then deducted from the carcass sale proceeds and the balance was sent to the owner.

## Performance Information

Weights used to determine rate of gain were the weight at the beginning of the test (following the warm-up period) and the final sale weight. Average beginning weight was 632 pounds and the average sale weight was 1224 pounds. Days on feed averaged 185 days and ranged from 140 to 245 days. Average daily gain for all steers in the program was 3.26 pounds and ranged from 2.00 to 4.58 pounds. Sixty eight percent of the calves gained over 3.0 pounds per day while only 4.4% gained less than

### Overall Average Daily Gain

Average = 3.26 Range = 2.00 to 4.58

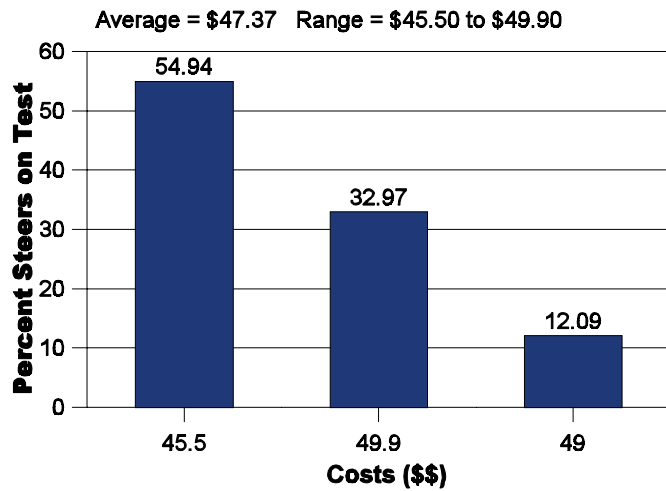


2.5 pounds. There was very little illness in the calves once the test began, which partially explains why the rates of gain were so high. The beginning weights of the calves ranged from 409 to 825 pounds, which resulted in calves being sorted into pens based on weight, breeding and predicted days on feed. This system appears to have been successful for the majority of the calves.

Feed consumption per head was calculated by dividing the total pen consumption by the total number of head days for the pen. Each steer was then assigned its feed costs according to the number of days on feed. This was based on the assumption that every steer had equal access to feed. Sorting of the calves initially and throughout the program enabled calves of similar weight to be fed together. Individual feed intake may have varied within each group, but this variation was probably only slight.

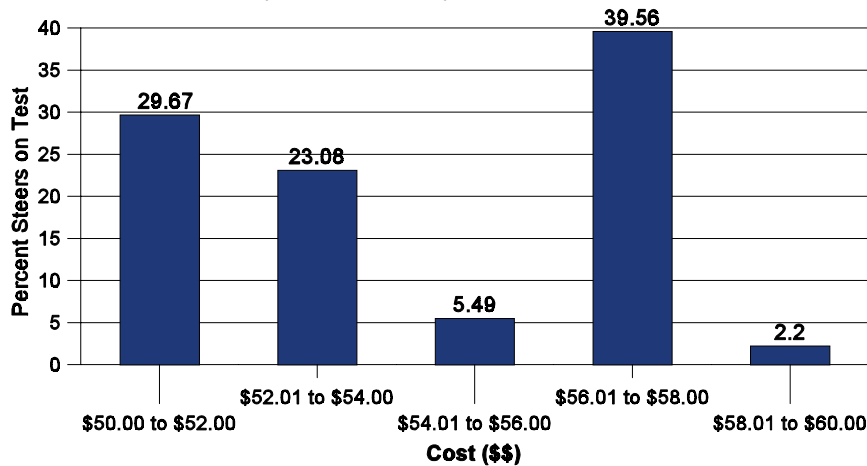
Feed costs were calculated for each group marketed at the time of marketing and reflect current commodity prices for the feeds in the ration at the time the calves were marketed. Feed cost of gain averaged \$47.37 and ranged from \$45.50 to \$49.90.

### Feed Cost of Gain



### Total Cost of Gain

Average = \$54.17 Range = \$50.68 to \$58.68



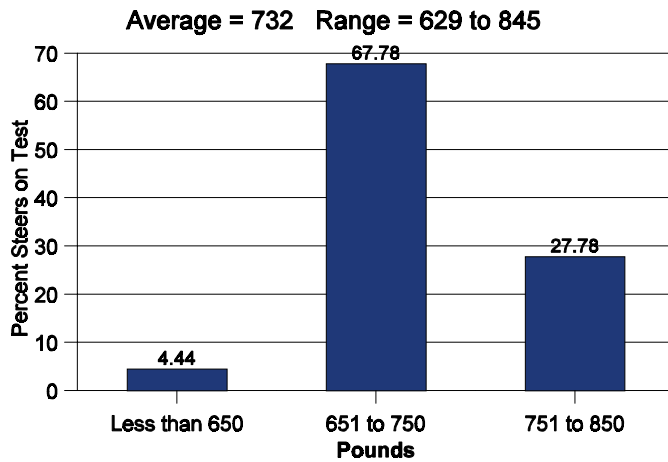
The total cost of gain included feed, yardage, shipping and brand inspection fees. The total cost of gain per cwt. averaged \$54.17 and ranged from \$50.68 to \$58.68.

## Carcass Information

The steers were sold on a carcass basis when the ultrasound scan combined with live weight, breed characteristics and visual evaluation indicated a high probability of the carcass grading choice. The steers were sold in four market groups.

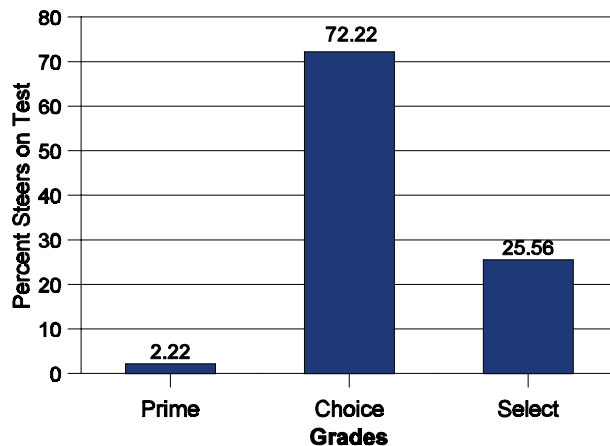
Carcass weights averaged 732 pounds, with 95.56% of the carcasses falling within the 650 lb. to 850 lb. range preferred by most packers.

## Carcass Weights



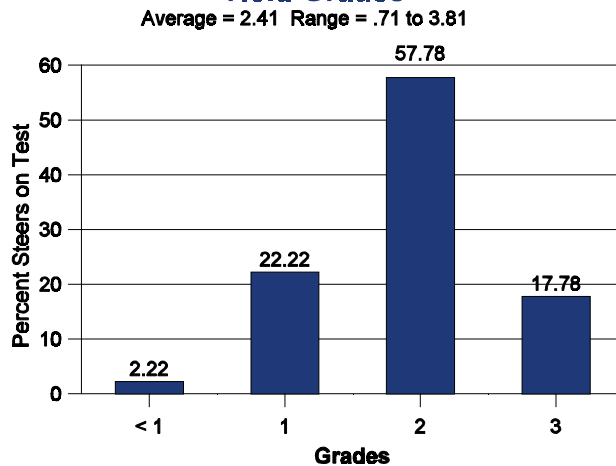
Seventy two percent of the carcasses graded Choice, 2% were Prime and 25.5% were Select. None of the cattle graded lower than Select.

## Quality Grades



Eighty two percent of the steers produced carcasses with yield grades below 3.0. Only 17.8% of the carcasses had yield grades over 3.0. Average yield grade was 2.41 and the range was from .71 to 3.81.

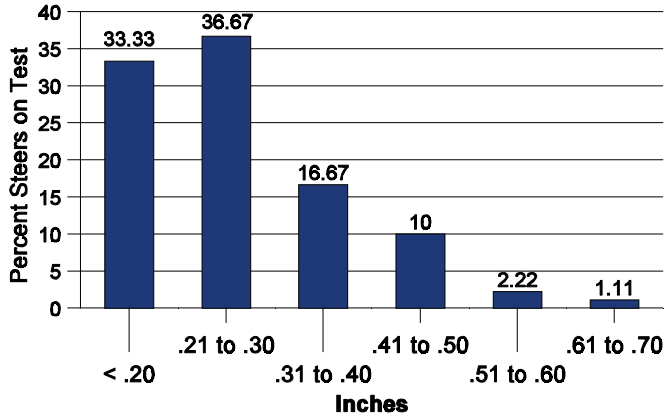
## Yield Grades



Yield grade is influenced by the amount of fat a carcass is carrying and the carcass' muscle mass. The average back fat thickness over the ribeye was .29 inches and fat thickness ranged from .05 to .65 inches. Optimal fat thickness is between .25 and .45 inches. Less than this optimal amount can lead to tough cuts due to cold shortening and these carcasses often do not display enough marbling to grade choice. Thicknesses in excess of the .45" level leads to excessive trim waste. High fat deposition can be a factor of either being held on feed too long, genetic disposition to deposit fat, or a combination of both.

### Backfat Thickness

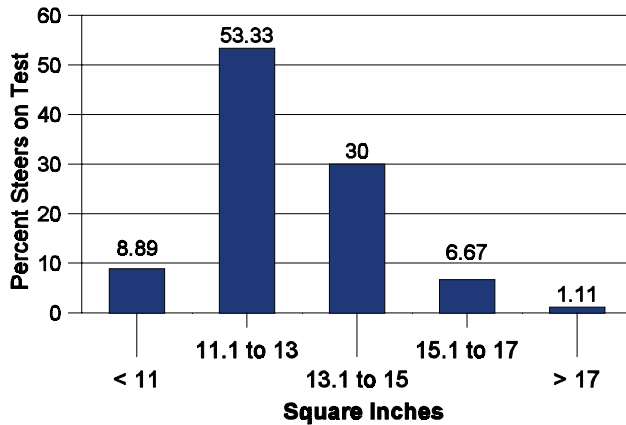
Average = .29" Range = .05" to .65"



The surface area of the ribeye is the chief indicator of overall muscle mass on the carcass. Ranch to Rail steer ribeyes averaged 12.75 square inches and ranged from 10.1 to 17.8 square inches. Ribeye areas in the range of 11.0 to 17.0 are the most marketable in the retail market, and 91% of the carcasses fit that criteria. Extremes on both sides of this optimal range present marketing and fabrication problems and selection should be made to minimize these types of animals from the beef herd.

### Ribeye Area

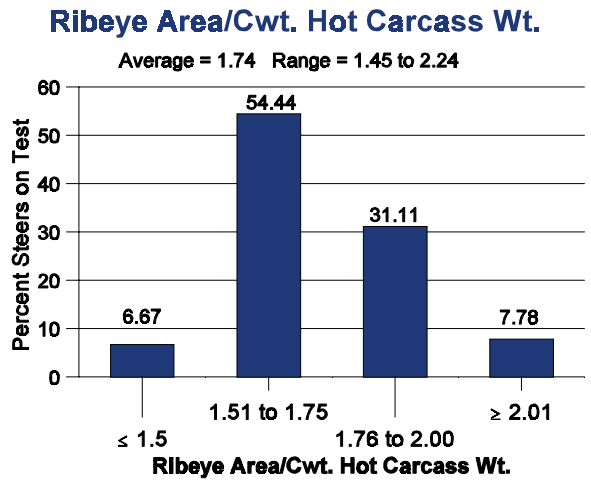
Average = 12.75 sq. inches Range = 10.1 to 17.8 sq. inc



### Carcass Characteristics of Ranch-to-Rail steers for each marketing period

Days on Feed	140	168	217	245	
Date Sold	4/7/99	5/5/99	6/23/99	7/21/99	
Quality Grade	Yield Grade	No.	No.	No.	No.
Prime	3		1	1	
Choice	1	2	4	2	3
	2	9	8	18	5
	3	6	4	4	
Select	1	4	2	3	1
	2	4	4	1	2
	3	1	1		
Cutability (%)					
47 ≤ 50		12	10	15	3
51 ≤ 53		13	14	12	7
54 ≤ 56		1		2	1

The amount of ribeye area tends to increase as carcass size increases. One way to measure ribeye area relative to carcass size is to calculate the ribeye area per 100 pounds of hot carcass weight. The average was 1.74 square inches per cwt., and the range was 1.45 to 2.24. The higher values indicate greater thickness of muscle, but selection solely on this trait could increase management problems associated with calving difficulty. Therefore, selection should be made for moderately high muscling which would coincide with a 2.2 or smaller ribeye area per cwt. of hot carcass weight. Nearly 99% of the steers on test fell into this range.



## FINANCIAL INFORMATION

As seen in the budget outlined below, the average net return per head was -\$21.89.

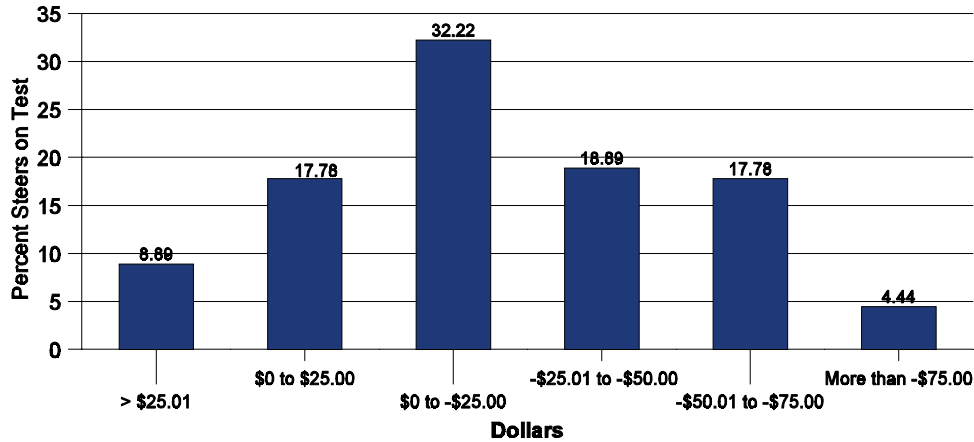
<b>1998-99 Ranch to Rail Average Financial Results</b>	
Income	\$756.51
Expenses	
Feeder Steer Value	\$456.75
Feed	281.68
Yardage	27.82
Shipping	10.40
Brand Inspection	<u>1.75</u>
Total	\$778.40
Net	<\$21.89>

The range in net return per head varied between a profit of \$60.57 and a loss of \$123.27. The profitable calves tended to be those that came in at slightly heavier weights, had high daily gains and were marketed early in the program. Those calves marketed later in the program were characterized by decreased efficiency of gain or were extremely light coming into the program. This was especially true of the cattle in the final market group. Profitability of the steers in the last two marketings was further hampered as we began entering the historical mid-summer price slump. Carcass price for the last two marketings were \$1.03 and \$1.01, respectively, compared to \$1.04 for the first two marketings.

Nearly 27 percent of the calves in the program had a positive net return. Thirty two percent of the steers showed a net loss of between \$0 and -\$25.00, while 41% had a net loss greater than -\$25.00. These numbers do not reflect the cost of trucking from the ranch to the feedlot or interest on the feeder steer value, as these values were not available for analysis.

## Net Return Per Head

Average = -\$21.89 Range = \$60.57 to -\$123.37



## Summary

The amount of variability in terms of feedlot performance, carcass traits and net return per head demonstrate the diversity found throughout the U.S. beef industry and in Utah. Producers must reduce this variability and produce a product that meets the needs of all segments of the industry if they are to remain competitive with competing meats such as pork and poultry. Ranchers must take stock of their respective operations, reduce costs wherever they can and then make adjustments in the genetics of their herd to insure they remain on track with market trends. The time is rapidly approaching wherein producers will be paid for the “value” of their product instead of simply being paid for a commodity. Those that know what comprises value in their product will be those who will receive higher returns for that product. The purpose of the Ranch to Rail program is to give producers the information on their cattle which will aid them as they make these production decisions to increase their production efficiency and profitability while providing a valuable marketable product to the beef industry.

### For Additional Information Contact:

Dr. Dale Zobell  
Extension Beef Specialist  
Utah State University  
Logan, Utah 84322-4815  
435-797-2144

C. Kim Chapman  
Extension Animal Scientist  
250 N. Main  
Richfield, Utah 84701-2165  
435-896-9262 ext. 274  
435-979-6343 (cell)

### Sponsors/Cooperators

Johnson Feedlot - Aurora, Utah  
Utah State University Extension  
USU Dept. of Animal, Dairy & Veterinary Sciences  
E.A. Miller Packing - Hyrum, Utah  
Utah Beef Improvement Association

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