

Springwood Livestock Management Service

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2018 Shenandoah County 4-H/FFA Livestock Show

4-H/FFA Steer Ultrasound Data Explanation

Column 1:	Exhibitor
Column 2:	Tag Number
Column 3:	Start Wt. (provided by Shenandoah County Extension Office)
Column 4:	Live Wt. (provided by Shenandoah County Extension Office)
Column 5:	Carcass Wt. (ending live wt. x 63.5% dressing)
Column 6:	Ultrasound rib eye area
Column 7:	Average REA required (based on carcass weight)
Column 8:	Ultrasound Rib Fat
Column 9:	Ultrasound %IMF
Column 10:	Marbling Score (based on %IMF and used to determine quality grade)
Column 11:	Quality Grade (based on ultrasound data, <u>NOT</u> Live quality grade)
Column 12:	Yield Grade (calculated using carcass wt., REA, and back fat)
Column 13:	% Retail Product (calculated based on carcass weight, back fat, and muscling)
Column 14 - 17:	Point totals earned for HCW, FT, REA, and Quality Grade
Column 18:	Carcass Index based on Point Totals for HCW, FT, REA, and Quality Grade
Column 19:	Final Rank

****This year steers were ranked by quality and yield using the Beef Empire Days Carcass Index. This index takes into consideration Hot Carcass Weight, Ultrasound Fat Thickness, Rib Eye Area, and Ultrasound assessed marbling score. It rewards steers that meet or exceed the industry standards for quality and yield.**

2018
Shenandoah County 4-H/FFA Livestock Show
Market Steer Show
Ultrasound Carcass Competition

Exhibitor	Tag #	Start Wt	Live Wt	Carcass Wt	Ultrasound REA	Avg. REA (for carcass wt)	Ultrasound Rib Fat	Ultrasound %IMF	Marbling Score	Quality Grade	Yield Grade	% Retail Product	HCW Points	FT Points	REA Points	QG Points	Carcass Index	Rank
Lindsey Hamrick	110	947	1175	746	15.2	12.8	0.24	06.52	1115	Choice ⁰	1.6	75.4	-0.19	-2	12.4	35	145.17	1
Faith Dellinger	120	960	1163	739	14.2	12.7	0.40	06.96	1134	Choice ⁰	2.3	72.0	-0.19	-2	7.6	35	140.45	2
Kyle Lutz	100	851	1119	711	12.3	12.3	0.44	06.45	1112	Choice ⁰	2.9	70.1	-1.16	-8	0.0	35	125.84	3
Walker Bowman	105	1013	1287	817	14.5	13.6	0.55	06.61	1119	Choice ⁰	2.8	69.4	0.00	-20	4.4	35	119.44	4
Ashlyn Funkhouser	127	950	1243	789	17.2	13.3	0.40	05.32	1059	Choice-	1.5	73.5	0.00	-2	19.8	0	117.77	5
Levi Hamrick	109	883	1121	712	14.7	12.3	0.37	05.37	1061	Choice-	1.9	72.6	-1.16	-1	11.8	0	109.64	6
Rosa Falzarano	113	874	1249	793	13.6	13.3	0.61	06.45	1112	Choice ⁰	3.2	67.9	0.00	-28	1.6	35	108.65	7
Reagan Bowman	104	997	1347	855	14.7	14.1	0.38	05.31	1058	Choice-	2.5	72.6	0.00	-1	3.4	0	102.42	8
Houston Kibler	128	1055	1403	891	15.0	14.5	0.40	05.11	1048	Choice -	2.6	72.4	0.00	-2	2.7	0	100.69	9
Kennedy Whetzel	117	923	1268	805	13.4	13.5	0.30	04.96	1041	Choice-	2.5	73.2	0.00	0	-0.2	0	99.76	10
Lane Stephens	126	701	1157	735	12.7	12.6	0.41	06.07	1094	Choice-	2.8	70.9	-0.45	-2	0.2	0	97.77	11
Luke Whetzel	118	856	1254	796	16.6	13.4	0.54	06.12	1097	Choice -	2.1	70.7	0.00	-20	16.2	0	96.21	12
Rhonnice Miller	124	1044	1366	867	14.9	14.2	0.46	05.43	1064	Choice-	2.7	71.1	0.00	-8	3.3	0	95.32	13
Jeremy Viar	121	963	1287	817	13.9	13.6	0.78	07.52	1158	Choice ⁰	3.6	65.0	0.00	-45	1.6	35	91.59	14
Kyle Lutz	101	914	1296	823	15.4	13.7	0.53	04.83	1034	Choice-	2.5	70.2	0.00	-20	8.6	0	88.63	15
Rhonnice Miller	122	1141	1412	897	13.7	14.6	0.44	05.91	1087	Choice-	3.1	70.8	0.00	-8	-4.2	0	87.78	16
Sierra Sager	114	766	1176	747	14.7	12.8	0.43	03.77	979	Select+	2.2	71.6	-0.19	-2	9.5	-20	87.33	17
Reagan Bowman	103	816	1213	770	14.1	13.0	0.67	05.59	1072	Choice-	3.1	67.1	0.00	-32	5.3	0	73.31	18
Trey French	108	966	1615	1026	15.2	16.1	0.58	06.13	1097	Choice-	3.5	69.3	0.00	-24	-4.4	0	71.55	19
Christian Dellinger	119	961	1259	799	12.7	13.4	0.63	05.50	1067	Choice -	3.6	66.9	0.00	-28	-3.6	0	68.42	20
Trey French	107	954	1504	955	12.9	15.3	0.62	05.68	1076	Choice-	4.0	67.3	0.00	-28	-11.6	0	60.41	21

Beef Empire Days Carcass Index System

The Beef Empire Days Carcass Index is calculated from a base of 100 points with bonus and penalty point adjustments for hot carcass weight (HCW), adjusted backfat, ribeye area (REA), internal kidney-pelvic-heart fat (KPH), and USDA Quality Grade (QG). Carcass traits that are closer to the desired ideal specifications will have higher indices. Bonus points awarded to carcasses having larger ribeyes, low KPH fat, and QG above low Choice will improve indices. The following is a description of the index adjustment procedures for each of the carcass traits.

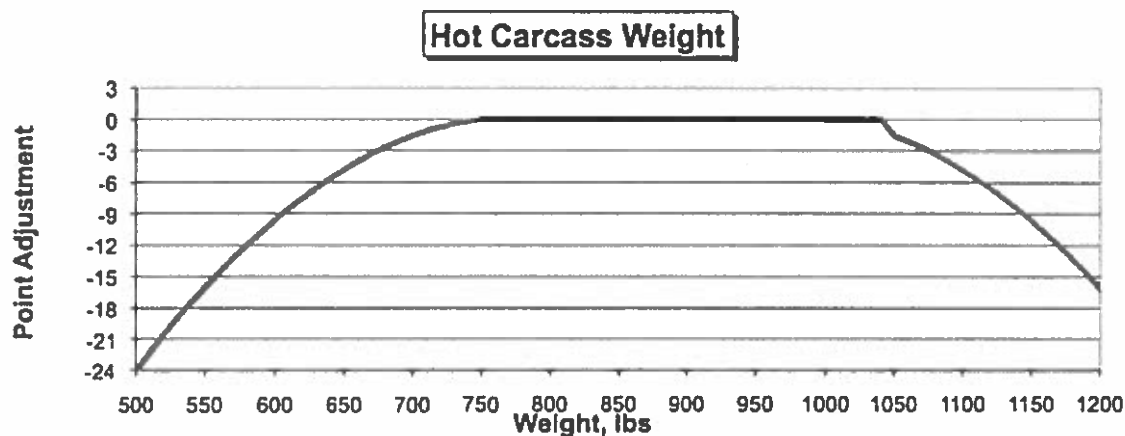
Hot Carcass Weight

The optimum range for hot carcass weight is defined as 750 to 1050 lbs. for both steers and heifers. The indices of carcasses with weights outside that range are penalized according to the following table.

Hot Carcass Weight Adjustment

HCW Points	HCW Points	HCW Points
500 -24.10	610 -8.55	720 -0.77
510 -22.36	620 -7.52	730 -0.45
520 -20.69	630 -6.55	740 -0.19
530 -19.08	640 -5.65	
540 -17.54	650 -4.82	
550 -16.06	660 -4.05	1050 -1.61
560 -14.65	670 -3.34	1060 -2.12
570 -13.30	680 -2.70	1070 -2.70
580 -12.02	690 -2.12	1080 -3.34
590 -10.79	700 -1.61	1090 -4.05
600 -9.64	710 -1.16	1100 -4.82

The following figure graphically illustrates the adjustments for heifers and steers.



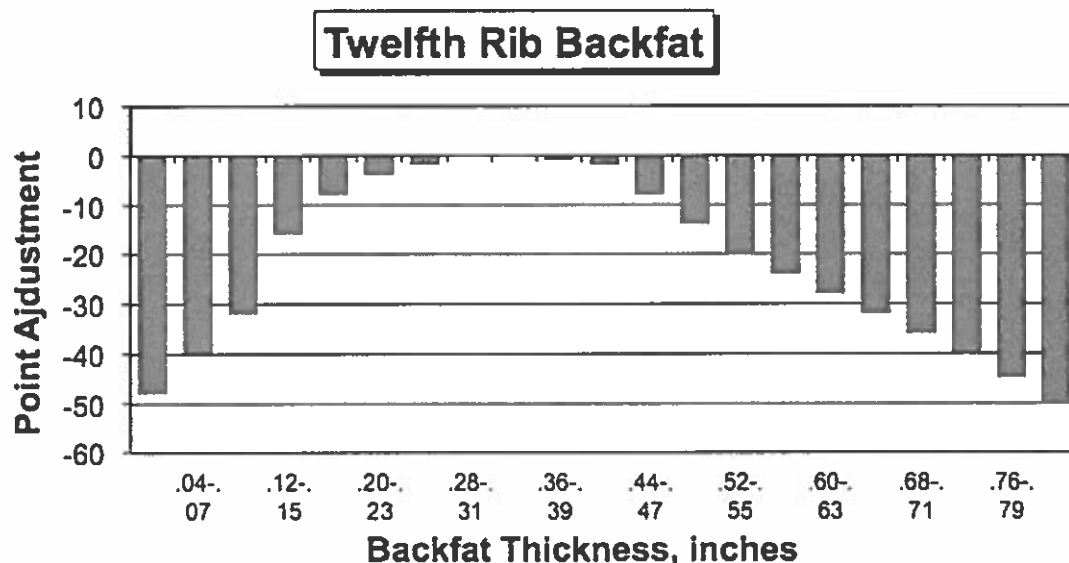
Adjusted Twelfth Rib Backfat Thickness

The optimum 12th rib fat thickness is defined as 0.30 inches which corresponds to a preliminary yield grade of 2.75 for both heifers and steers. Indices are negatively affected for carcasses having less than 0.28 inches or more than 0.36 inches of backfat.

Twelfth Rib Backfat Adjustment

Fat Thickness	Points	Fat Thickness	Points
0.00 - 0.03	-48	0.44 - 0.47	-8
0.04 - 0.07	-40	0.48 - 0.51	-14
0.08 - 0.11	-32	0.52 - 0.55	-20
0.12 - 0.15	-16	0.56 - 0.59	-24
0.16 - 0.19	-8	0.60 - 0.63	-28
0.20 - 0.23	-4	0.64 - 0.67	-32
0.24 - 0.27	-2	0.68 - 0.71	-36
0.28 - 0.35	0	0.72 - 0.75	-40
0.36 - 0.39	-1	0.76 - 0.79	-45
0.40 - 0.43	-2	>0.79	-50

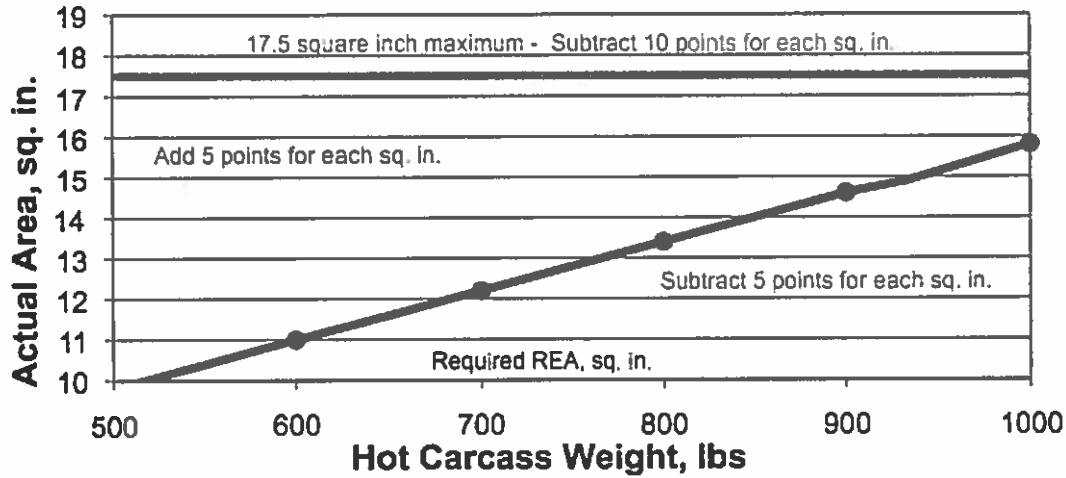
The following figure illustrates the adjustment for backfat thickness.



Ribeye Area

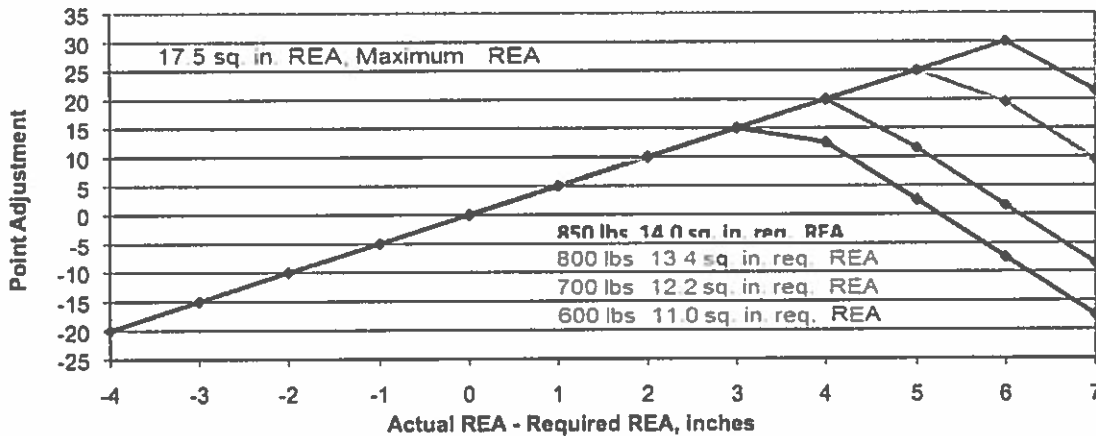
A ribeye requirement is calculated for each carcass based on hot carcass weight. The equation for both steers and heifers is: Required REA, sq. in. = HCW x .012 + 3.8. A 5 point adjustment will be made to the index for every square inch that a carcass ribeye area deviates from the required value. There is also a maximum REA of 17.5 square inches for steers and heifers. Carcasses with excessively large ribeyes will be penalized 10 points for each inch, or fraction of an inch, over the 17.5 square inch REA maximum. The relationship of actual and required REA, the maximum REA, and the associated bonus or penalty points is illustrated in the graph below. This is equivalent to the USDA required REA area for yield grade calculation.

Ribeye Area



The preceding graph demonstrates adjustment for the difference of the actual and required REA for various carcass weights.

Ribeye Area Adjustment



Bonus and penalty points can also be calculated mathematically. For example, an 850 pound steer carcass would have a required REA of 14.0 square inches. If the carcass REA was 16.5 inches the index adjustment calculated as follows:

17.5 Maximum REA
 14.0 Required REA
 16.5 Actual REA
 Difference of 2.5 sq inches x 5 = + 12.5 Bonus Points

Example #2

850 pound steer carcass would have a required REA of 14.0 square inches. If the carcass REA was 18.5 inches the index adjustment calculated as follows:

17.5 Maximum REA
 14.0 Required REA
 18.5 Actual REA
 17.5-14.0 = 3.5 sq inches x 5 = 17.5 Bonus Points
 REA Actual +1.0 over Maximum Allowable = -10 Points

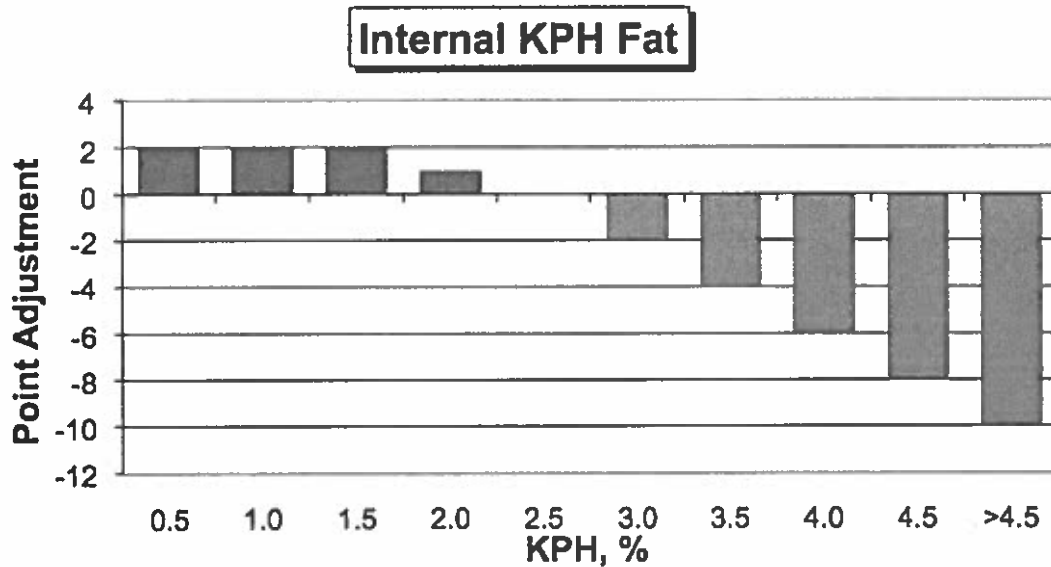
This equals a final REA Index adjustment of +7.5 Points
 **Note Bonus points are only added for the REA up to 17.5 sq inches

Kidney, Pelvic and Heart Fat Adjustment

The internal kidney-pelvic-heart fat index basis is 2.5%. Carcasses with a lower KPH will receive bonus points while those with a higher KPH will be penalized as shown in the following table.

KPH	Points
0.0-1.5	2
1.6-2.0	1
2.1-2.9	0
3.0-3.4	-2
3.5-3.9	-4
4.0-4.4	-6
4.5-4.9	-8
≥5.0	-10

The following graph illustrates these adjustments.



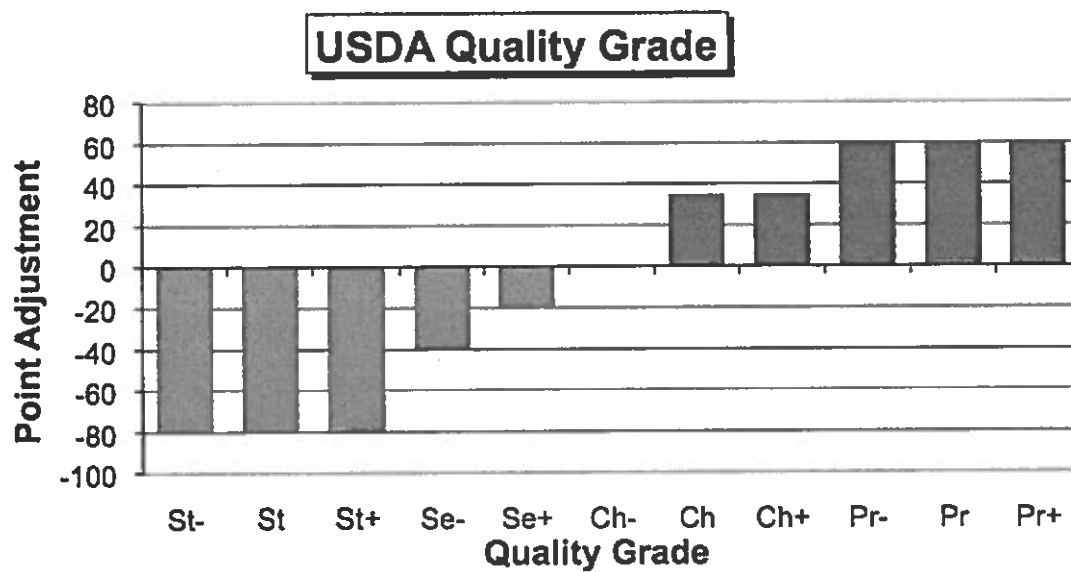
USDA Quality Grade

To be competitive in the carcass show, a carcass must grade at least low Choice. The index system severely penalizes a carcass grading Select or lower. Bonus points are given to carcasses that grade above low Choice.

Quality Grade Adjustment

Quality Grade	Points	
Standard	Low	-80
	Average	-80
	High	-80
Select	Low	-40
	High	-20
Choice	Low	0
	Average	35
	High	35
Prime	Low	60
	Average	60
	High	60

These adjustments are illustrated in the following graph.



BED Carcass Index Examples

The following table demonstrates the bonus and penalty points for various potential carcass traits using the currently defined Beef Empire Days Carcass Index System.

	Carcass Number					
	1	2	3	4	5	6
Carcass Measurements						
Hot carcass weight, lbs.	750	800	850	900	700	800
Backfat, in.	0.3	0.33	0.40	0.21	0.53	0.37
Kidney-pelvic-heart fat, %	2.5	2.5	3.0	1.5	2.5	2.0
Ribeye area, sq. in.						
Actual	15.5	14.4	17.0	15.2	11.0	14.7
Required	12.8	13.4	14.0	14.6	12.2	13.4
Quality grade	Ch-	Ch-	Ch+	Pr	Se-	Ch-
Point Adjustments						
Hot carcass weight	0	0	0	0	-1.6	0
Backfat	0	0	-1	-4	-20	-1
Kidney-pelvic-heart fat	0	0	-2	2	1	1
Ribeye area	13.5	5	15	3	-6	6.5
Quality grade	0	0	35	60	-40	0
Total adjustment	13.5	5	47	61	-66.6	6.5
Index base	100	100	100	100	100	100
Index total	113.5	105	147	161	33.4	106.5

The BED Carcass Index was last updated 5/10/15.