

Springwood Livestock Management Service

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2017 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.**

**2017
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
William Dysart	81	0911	1124	714	13.1	12.4	0.39	06.61	1119	Choice ⁰	2.5	71.5	-1.16	-1	3.8	35	136.60	1
Jacob Coffey	83	1076	1372	871	16.7	14.3	0.52	06.92	1133	Choice ⁰	2.3	71.2	0.00	-20	12.2	35	127.17	2
Kennedy Whetzel	777	1121	1382	878	14.4	14.3	0.48	06.51	1115	Choice ⁰	2.9	70.6	0.00	-14	0.3	35	121.26	3
Jeremy Viar	78	0963	1156	734	16.1	12.6	0.66	07.38	1152	Choice ⁰	2.3	68.3	-0.45	-32	17.5	35	120.02	4
Kara Hockman	76	1155	1432	909	18.1	14.7	0.65	06.54	1116	Choice ⁰	2.3	69.6	0.00	-32	16.9	35	119.86	5
Lane Stephens	10	1106	1403	891	16.5	14.5	0.62	08.33	1191	Choice ⁰	2.7	69.2	0.00	-28	10.3	35	117.29	6
Faith Dellinger	776S	0989	1371	871	13.3	14.2	0.48	06.54	1116	Choice ⁰	3.2	70.0	0.00	-14	-4.6	35	116.42	7
Adelynn Lutz	007	0920	1390	883	15.9	14.4	0.62	06.68	1122	Choice ⁰	2.8	68.8	0.00	-28	7.4	35	114.35	8
Samuel Steed	775	0937	1368	869	14.4	14.2	0.57	06.67	1122	Choice ⁰	3.1	69.0	0.00	-24	1.1	35	112.09	9
Samuel Steed	774	0987	1383	878	14.0	14.3	0.57	06.45	1112	Choice ⁰	3.3	68.7	0.00	-24	-1.9	35	109.13	10
Rhonnies Miller	18	0963	1466	931	18.1	15.0	0.78	06.95	1134	Choice ⁰	2.7	67.2	0.00	-45	15.6	35	105.58	11
Ashlyn Funkhouser	181	0878	1278	812	13.8	13.5	0.29	05.69	1077	Choice-	2.4	73.7	0.00	0	1.2	0	101.17	12
Luke Whetzel	85	0913	1241	788	12.9	13.3	0.64	06.29	1105	Choice ⁰	3.5	66.9	0.00	-32	-2.0	35	101.02	13
Lindsey Hamrick	778S	1119	1437	912	14.5	14.7	0.68	07.62	1162	Choice ⁰	3.5	67.1	0.00	-36	-1.2	35	97.79	14
Houston Kibler	88	1074	1382	878	13.3	14.3	0.69	07.43	1154	Choice ⁰	3.8	66.2	0.00	-36	-5.1	35	93.95	15
Kyle Lutz	745	0970	1290	819	14.4	13.6	0.85	09.53	1234	Choice+	3.6	63.9	0.00	-50	3.7	35	88.72	16
Garrett Cummins	001	0818	1238	786	14.3	13.2	0.55	04.64	1024	Choice-	2.8	69.3	0.00	-20	5.5	0	85.54	17
Kara Hockman	77	1000	1265	803	14.6	13.4	0.59	04.86	1036	Choice-	2.8	68.8	0.00	-24	6.0	0	81.98	18
William Dysart	82	1036	1361	864	14.7	14.2	0.36	03.68	974	Select+	2.5	72.9	0.00	-1	2.5	-20	81.55	19
Isaac Rhodes	008	0957	1410	895	13.4	14.5	0.85	06.51	1114	Choice ⁰	4.3	63.4	0.00	-50	-5.9	35	79.06	20
Houston Kibler	87	1030	1335	848	15.2	14.0	0.61	06.06	1094	Choice-	2.9	68.7	0.00	-28	6.3	0	78.34	21
Lane Stephens	13	0735	1107	703	14.3	12.2	0.71	04.92	1039	Choice-	2.9	66.4	-1.61	-36	10.5	0	72.88	22
Walker Bowman	739	1115	1562	992	13.7	15.7	0.53	05.92	1088	Choice-	3.7	69.3	0.00	-20	-9.8	0	70.19	23
Jeremy Viar	86	0820	1083	688	11.1	12.1	0.59	05.78	1081	Choice-	3.5	66.9	-2.12	-24	-4.9	0	69.01	24
Kyle Lutz	744S	1053	1326	842	15.0	13.9	0.30	03.03	937	Sel-	2.2	74.1	0.00	0	5.6	-40	65.56	25
Rhonnies Miller	20	0992	1474	936	18.1	15.0	0.96	05.88	1086	Choice-	3.2	64.0	0.00	-50	15.4	0	65.43	26
Reagan Bowman	749	1046	1434	911	16.0	14.7	0.83	05.60	1072	Choice-	3.4	65.3	0.00	-50	6.5	0	56.48	27
Isaac Rhodes	009	0923	1362	865	15.4	14.2	0.53	01.68	858	Standard	2.7	70.2	0.00	-20	6.3	-80	6.33	28

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.

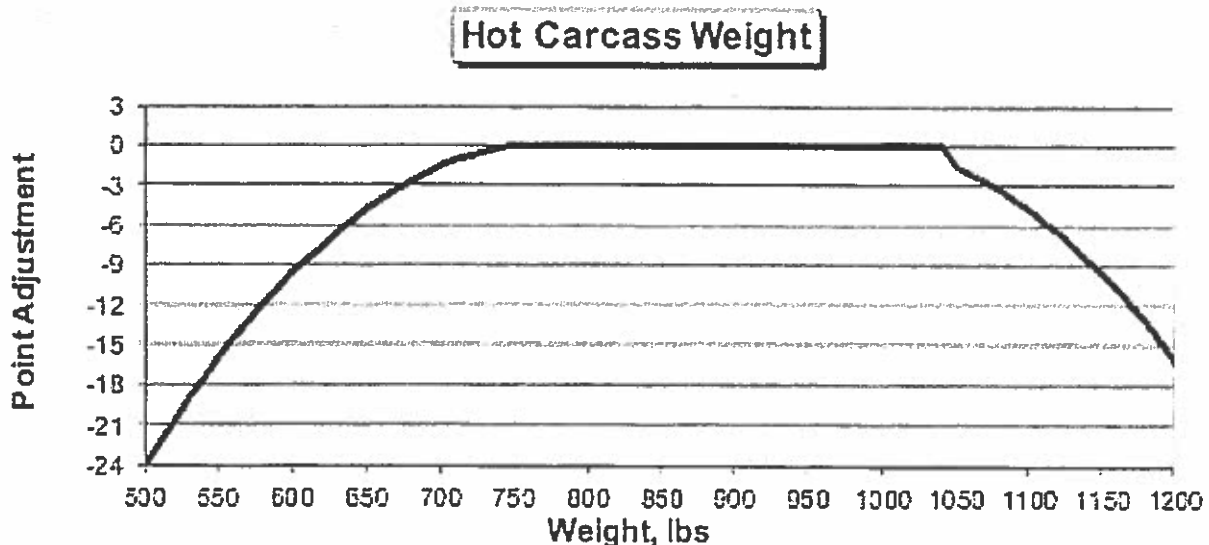
Hot Carcass Weight

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	-24.1	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	-13.3	680	-2.7	1070	-2.7
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.



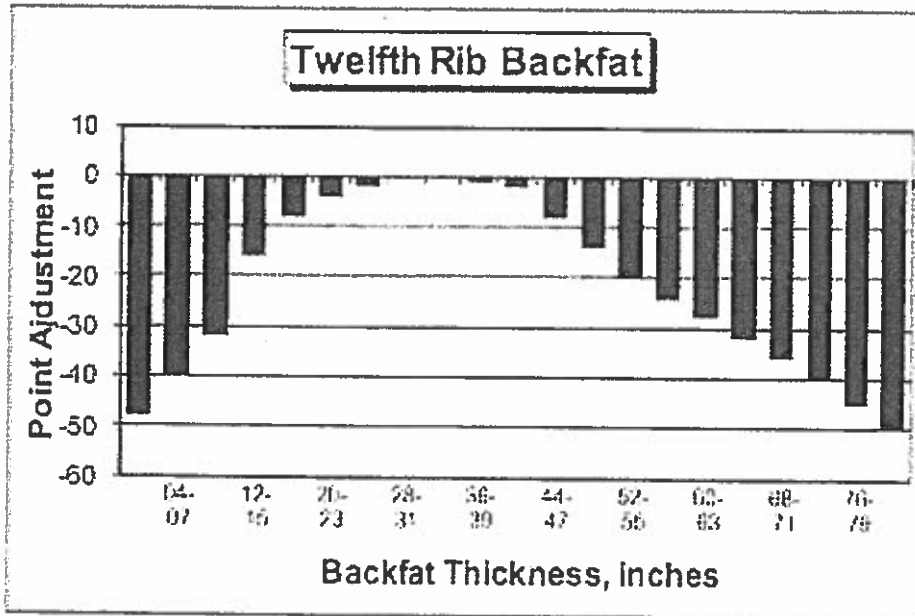
Adjusted Twelfth Rib Backfat Thickness

a optimum 12th rib fat thickness is defined as 0.30 inches which corresponds to a preliminary yield grade of 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

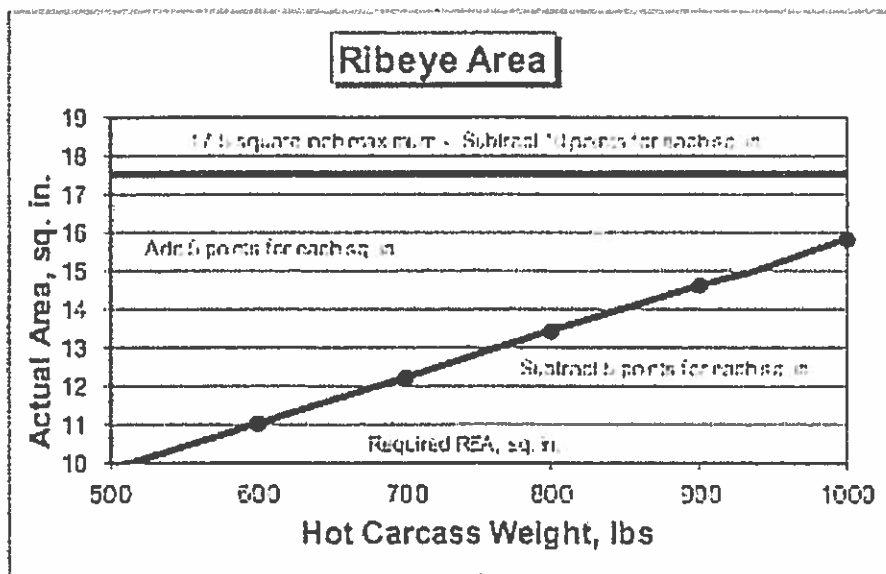
Fat Thickness	Points	Fat Thickness	Points
0.00 - 0.03	-48	0.44 - 0.47	-8
0.04 - 0.07	-40	0.48 - 0.51	-14
0.08 - 0.11	-32	0.52 - 0.55	-20
0.12 - 0.15	-16	0.56 - 0.59	-24
0.16 - 0.19	-8	0.60 - 0.63	-28
0.20 - 0.23	-4	0.64 - 0.67	-32
0.24 - 0.27	-2	0.68 - 0.71	-36
0.28 - 0.35	0	0.72 - 0.75	-40
0.36 - 0.39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

The following figure illustrates the adjustment for backfat thickness



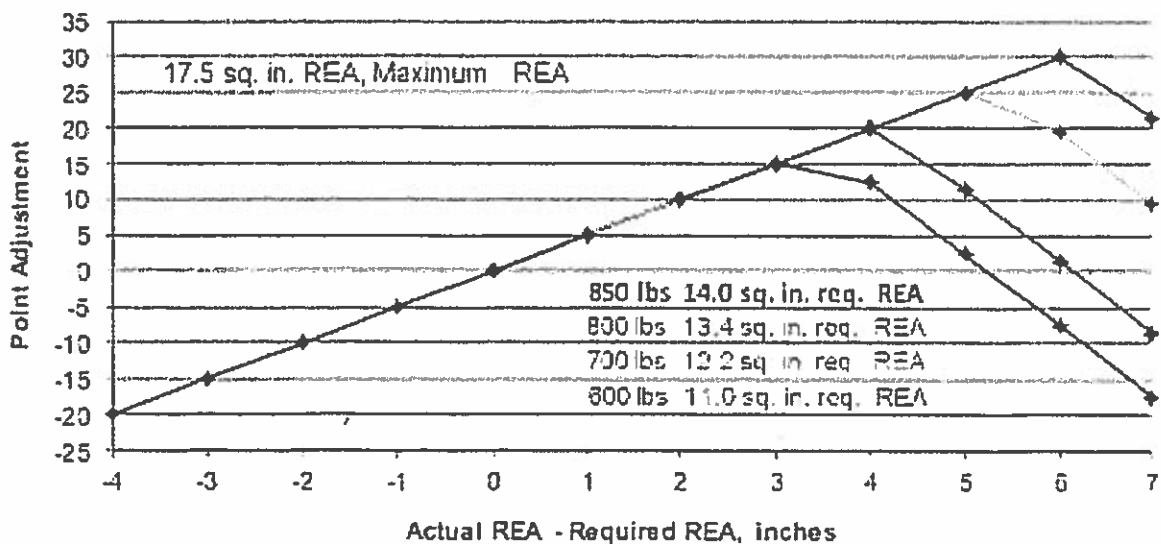
Ribeye Area

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.



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

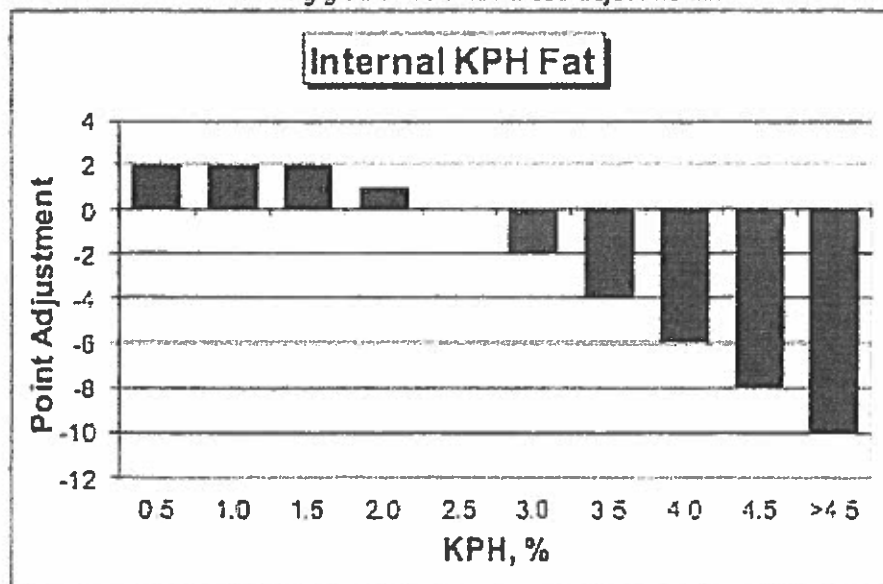
Kidney, Pelvic and Heart Fat Adjustment

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

Internal Fat Adjustment

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.



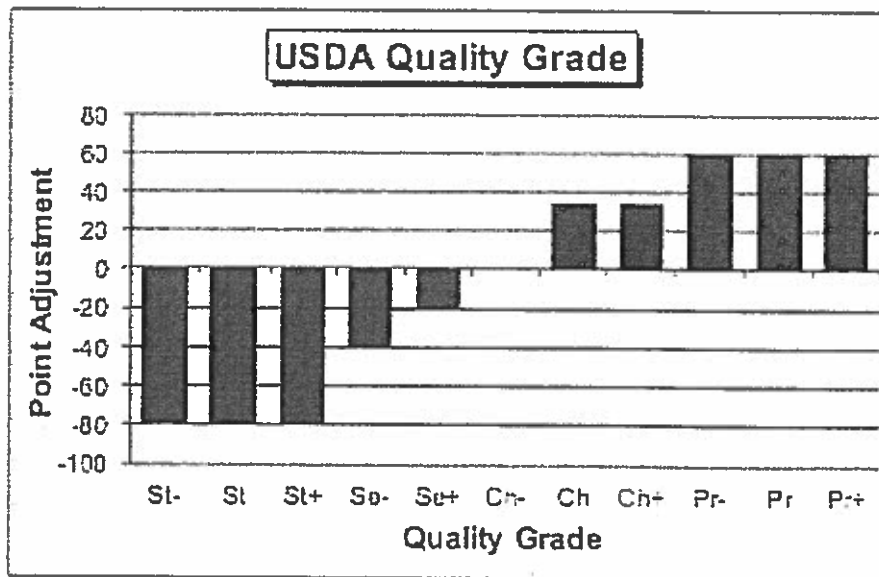
USDA Quality Grade

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	0.4	0.21	0.53	0.37
Kidney-pelvic-heart fat, %	2.5	2.5	3	1.5	2.5	2
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	-16	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