

Springwood Livestock Management Service

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2016 Shenandoah County Fair

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.**

2016 Shenandoah County Fair
Market Steer Ultrasound Competition

Exhibitor	ID	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
Reagan Elizabeth Bowman	95774	917	1287	817	15.4	13.6	0.35	08.94	1213	Choice +	2.1	73.4	0.00	0	8.9	35	143.87	1
Connor Neff	08748	903	1174	745	14.2	12.7	0.48	06.69	1122	Choice ⁰	2.5	70.5	0.00	-14	7.5	35	128.47	2
Lane Stephens	780	968	1288	818	14.7	13.6	0.49	06.63	1120	Choice ⁰	2.6	70.6	0.00	-14	5.7	35	126.65	3
Luke B Whitacre	08757	1035	1359	863	13.9	14.2	0.55	06.22	1101	Choice ⁰	3.2	69.1	0.00	-20	-1.3	35	113.67	4
Jeremy Wyatt Viar	222	922	1443	916	16.0	14.8	0.62	06.79	1127	Choice ⁰	2.9	68.9	0.00	-28	5.8	35	112.77	5
Walker D Bowman	219	939	1313	834	13.0	13.8	0.54	08.12	1182	Choice ⁰	3.4	68.7	0.00	-20	-4.0	35	110.97	6
Jenna Kibler	184	933	1268	805	14.7	13.5	0.65	06.58	1118	Choice ⁰	3.0	67.7	0.00	-32	6.2	35	109.19	7
Kyle Lutz	08743	1026	1357	862	14.5	14.1	0.61	07.13	1142	Choice ⁰	3.2	68.3	0.00	-28	1.7	35	108.70	8
Bethany Gochenour	11598	984	1186	753	15.8	12.8	0.45	04.25	1004	Choice -	1.9	71.9	0.00	-8	14.7	0	106.71	9
Kyle Lutz	08744	950	1307	830	14.5	13.8	0.65	09.12	1220	Choice +	3.1	67.6	0.00	-32	3.7	35	106.70	10
Ashlyn Funkhouser	178	808	1098	697	13.0	12.2	0.33	05.22	1054	Choice -	2.3	72.5	-2.12	0	4.2	0	102.05	11
Ethan Gochenour	198	810	1113	707	15.8	12.3	0.49	05.48	1066	Choice-	1.8	71.3	-1.61	-14	17.6	0	101.98	12
Alexander Neff	08746	728	1023	650	13.0	11.6	0.39	06.11	1096	Choice -	2.3	71.4	-4.82	-1	6.9	0	101.05	13
Tiffany Heishman	218	866	1309	831	13.5	13.8	0.68	06.32	1106	Choice ⁰	3.5	66.5	0.00	-36	-1.4	35	97.63	14
Connor Neff	08747	795	1132	719	14.2	12.4	0.78	08.25	1187	Choice ⁰	3.1	65.1	-1.16	-45	8.7	35	97.56	15
Caleb Fredman	08736	1025	1293	821	14.1	13.7	0.75	06.74	1125	Choice ⁰	3.5	65.6	0.00	-40	2.0	35	96.99	16
Walker D Bowman	220	976	1344	853	14.0	14.0	0.75	06.58	1118	Choice ⁰	3.6	65.6	0.00	-40	-0.3	35	94.74	17
Kara Hockman	012	899	1235	784	16.0	13.2	0.44	03.84	982	Select +	1.9	72.3	0.00	-2	13.9	-20	91.95	18
Houston Kibler	179	1030	1369	869	14.9	14.2	0.51	05.34	1059	Choice -	2.8	70.3	0.00	-14	3.4	0	89.44	19
Isaac Rhodes	011	665	1080	686	12.0	12.0	0.46	05.91	1087	Choice -	2.9	69.6	-2.70	-8	-0.1	0	89.15	20
Jacob Coffey	08731	923	1317	836	13.9	13.8	0.49	05.48	1067	Choice -	2.9	70.1	0.00	-14	0.5	0	86.47	21
Ryleigh Grace Holzbauer	223	716	1097	697	11.3	12.2	0.46	05.84	1084	Choice -	3.2	69.2	-2.12	-8	-4.3	0	85.58	22
Caleb Fredman	902	792	1114	707	12.6	12.3	1.07	06.93	1133	Choice ⁰	4.3	59.1	-1.61	-50	1.8	35	85.15	23
Tessa Hockman	779	1002	1379	876	15.1	14.3	0.54	04.91	1038	Choice -	2.9	69.9	0.00	-20	3.9	0	83.86	24
Mariyah Viar	224	892	1538	977	13.7	15.5	0.77	07.75	1168	Choice ⁰	4.3	65.0	0.00	-45	-9.1	35	80.90	25
Lindsey Hamrick	08738	756	1154	733	12.6	12.6	0.52	05.93	1088	Choice -	3.1	68.9	-0.45	-20	0.0	0	79.58	26
Emma K Lutz	08742	990	1422	903	13.0	14.6	0.54	05.01	1043	Choice -	3.6	68.8	0.00	-20	-8.0	0	72.02	27
Trevor Kibler	08741	900	1312	833	14.3	13.8	0.51	03.74	977	Select+	2.9	70.0	0.00	-14	2.7	-20	68.66	28
Isaac Rhodes	221	871	1255	797	12.6	13.4	0.60	06.00	1091	Choice -	3.5	67.5	0.00	-28	-3.7	0	68.33	29
Jenna Kibler	754	1022	1379	876	14.2	14.3	0.67	05.70	1077	Choice -	3.5	67.1	0.00	-32	-0.6	0	67.41	30
Blake Dysart	08734	625	1176	747	13.7	12.8	0.52	03.45	961	Select +	2.8	69.5	0.00	-20	4.7	-20	64.69	31
Blake Dysart	08733	780	1384	879	11.7	14.3	0.56	04.34	1009	Choice -	4.0	67.8	0.00	-24	-13.2	0	62.82	32
Kennedy Whetzel	015	943	1332	846	18.9	13.9	0.81	06.09	1095	Choice -	2.2	67.2	0.00	-50	10.8	0	60.75	33
Luke B Whitacre	08756	963	1328	843	12.2	13.9	0.65	05.44	1065	Choice -	3.9	66.4	0.00	-32	-8.4	0	59.55	34
Garrett Cummins	08732	950	1345	854	11.5	14.0	0.76	06.00	1091	Choice -	4.5	64.0	0.00	-45	-12.9	0	42.11	35

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.

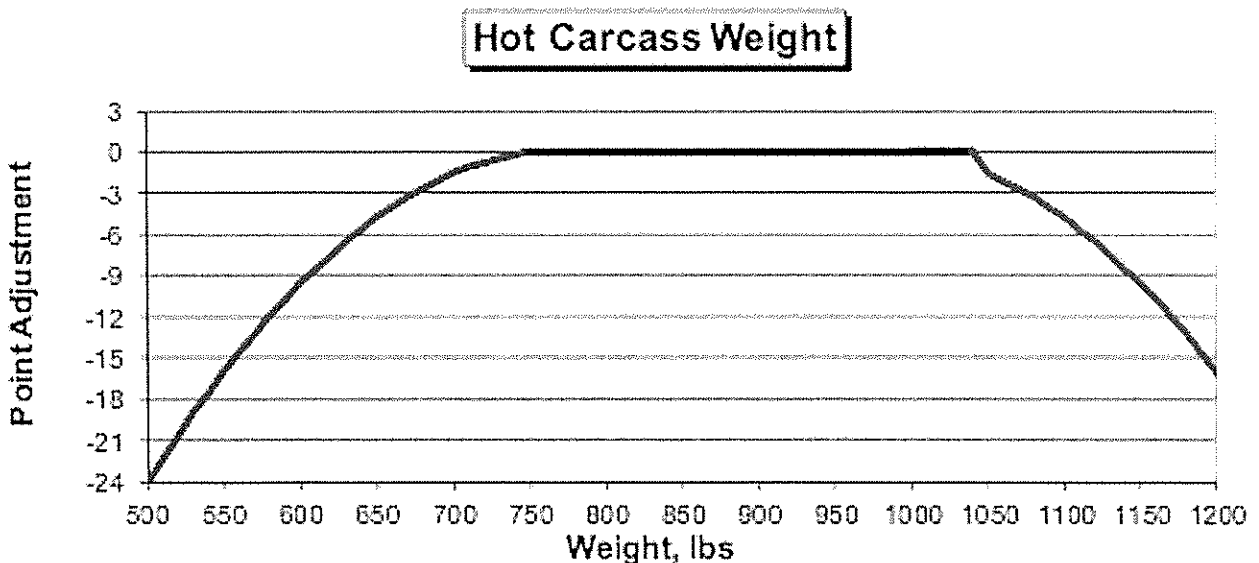
Hot Carcass Weight

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.



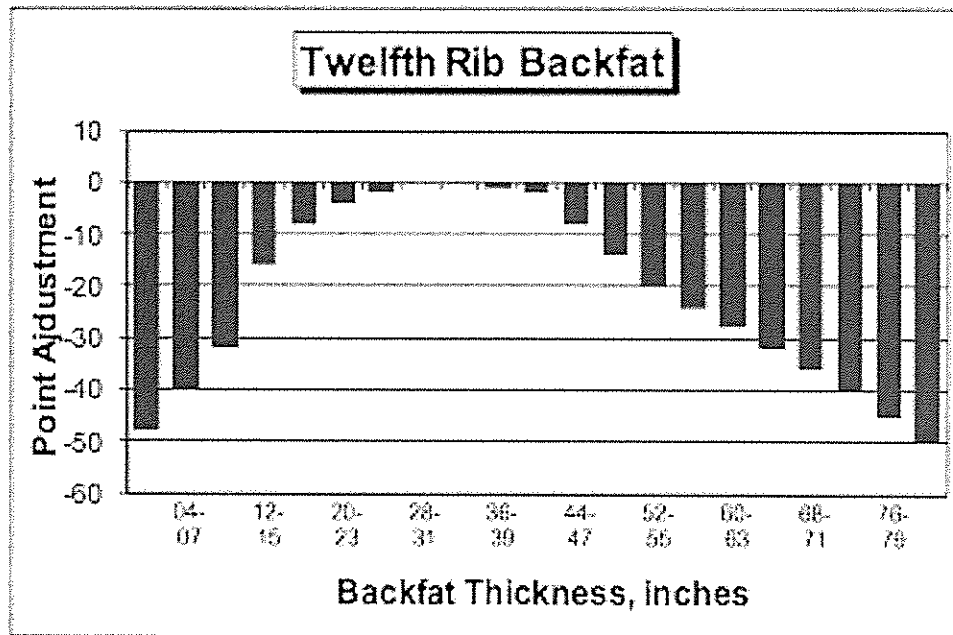
Adjusted Twelfth Rib Backfat Thickness

The 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

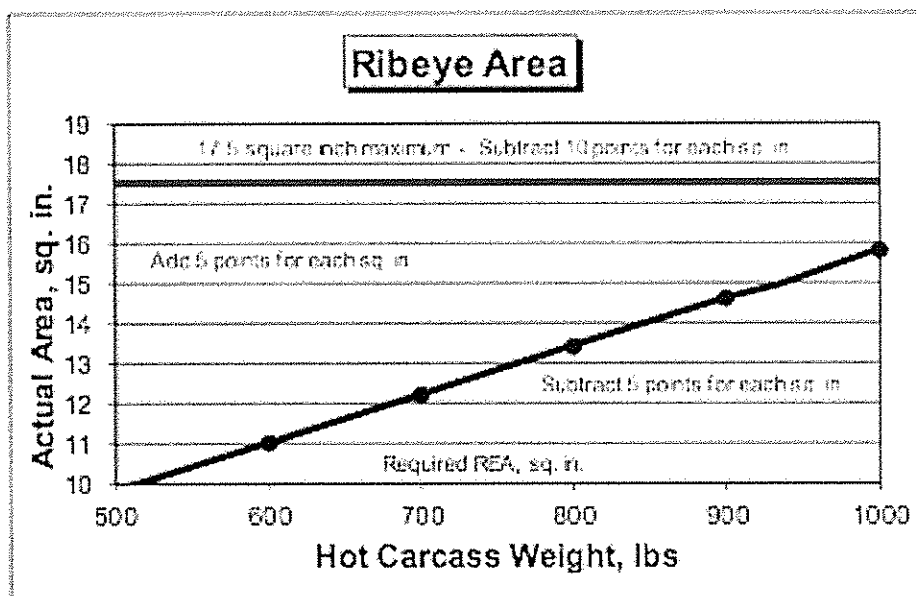
Fat Thickness	Points	Fat Thickness	Points
0.00 - 0.03	-48	0.44 - 0.47	-8
0.04 - 0.07	-40	0.48 - 0.51	-14
0.08 - 0.11	-32	0.52 - 0.55	-20
0.12 - 0.15	-16	0.56 - 0.59	-24
0.16 - 0.19	-8	0.60 - 0.63	-28
0.20 - 0.23	-4	0.64 - 0.67	-32
0.24 - 0.27	-2	0.68 - 0.71	-36
0.28 - 0.35	0	0.72 - 0.75	-40
0.36 - 0.39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

The following figure illustrates the adjustment for backfat thickness.

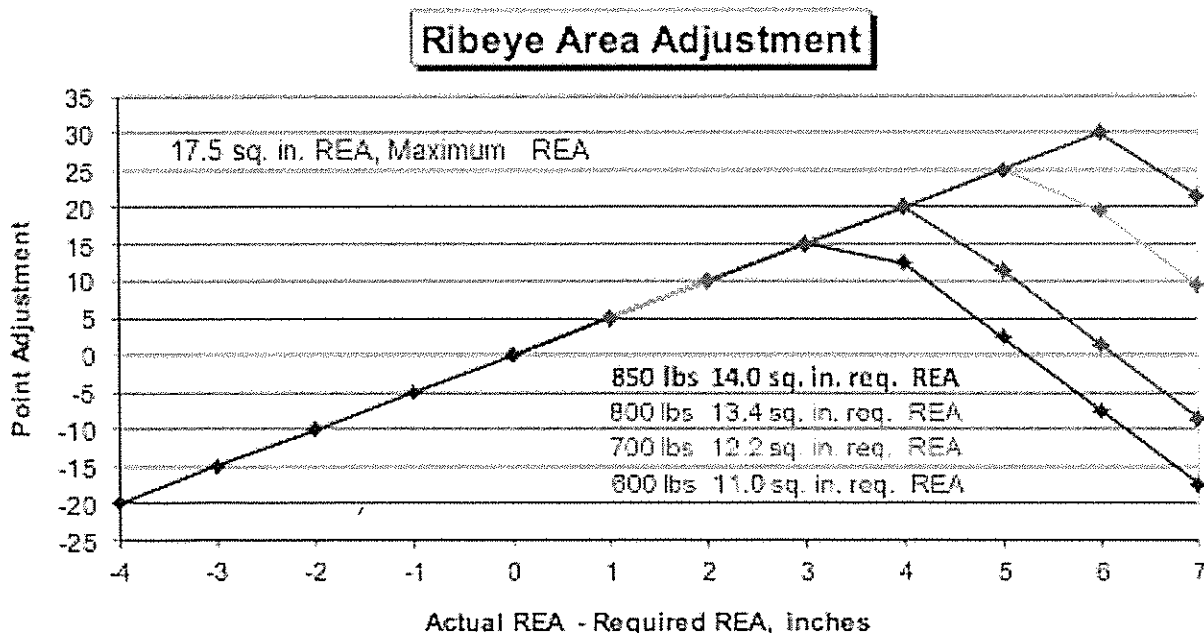


Ribeye Area

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.



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

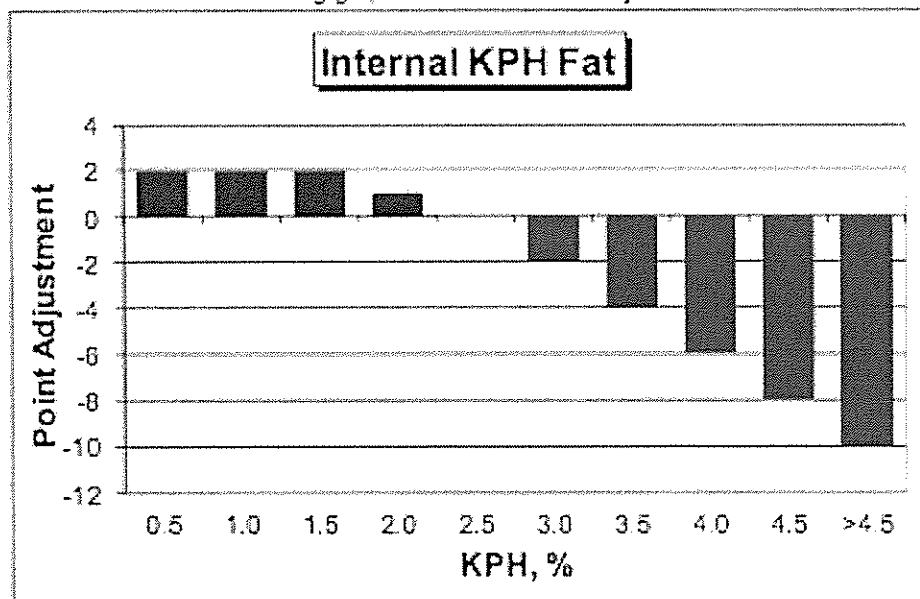
Kidney, Pelvic and Heart Fat Adjustment

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.



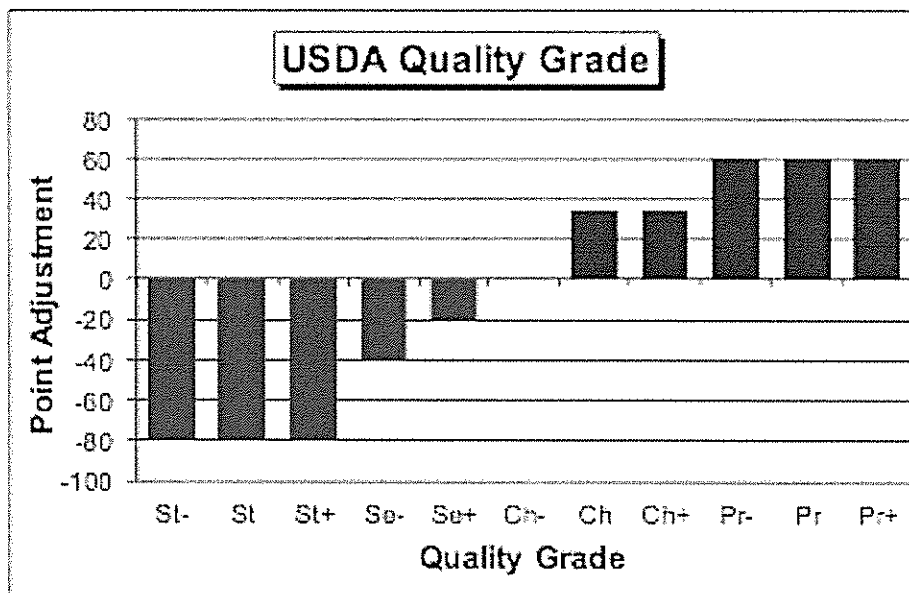
USDA Quality Grade

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	-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	8.5
Quality grade	0	0	35	60	-40	0
Total adjustment	13.5	5	47	61	-66.6	8.5
Index base	100	100	100	100	100	100
Index total	113.5	105	147	161	33.4	108.5

The BED Carcass Index was last updated 5-10-15