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**YIELD AND TIME-IN-MOTION DATA FOR EXCEL
SMART CHOICE PRODUCTS**

This study evaluated the yield of beef retail cuts from EXCEL Smart Choice subprimals that differed in quality grade (Choice and Select). In addition, time-in-motion data were collected to assess the economic differences associated with labor. A simulated retail market fabrication room and two professional meat cutters from Texas State Technical College were used to conduct this study. The data collected will be incorporated into the CARDS program to provide additional information pertaining to closely-trimmed retail products.

The yield and time data are presented in the following tables. The multiple component products (2-piece round, 2-piece clod and 2-piece top sirloin) were fabricated as separate pieces and are therefore presented in separate tables. The reasoning for this procedure was that actual retail meat cutters would most likely fabricate similar pieces of a multiple component product as a group rather than one whole product at a time. Yield data presented in the tables are percentages based on an unbagged weight, so not all purge loss is accounted for. Time information is presented in seconds.

The purpose of this research was to collect data that would be beneficial to retailers in the decision making process of whether or not closely trimmed primals and subprimals, such as the EXCEL Smart Choice products, could be incorporated into their retail beef programs. The retailer must be educated concerning the economics of increased yields of saleable product and decreased labor associated with closely-trimmed products. These data should provide valuable information and insight on this subject.

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM CHUCK
EYE STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1067	Blade Rst., Bnls.	71.67	70.97
1108	Eye Stk., Bnls.	7.88	6.60
1713	Beef for Stew	10.24	10.70
1652	Lean Trim	7.32	9.13
9000	Fat Trim	2.66	2.42
N/A	Cut Loss	0.23	0.18
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM CHUCK EYE STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.49	6.10
Pretrim	0.00	0.00
Cutting	30.51	38.21
Trim & Tray	43.02	32.89
Lean Trim	123.47	157.11
TOTAL TIME	203.49	234.31

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM ONE-PIECE CLOD STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1084	Top Blade Stk., Bnls.	11.14	10.16
1080	Top Blade Pot Rst., Bnls.	9.37	9.26
1050	Shoulder Stk., Bnls.	28.44	32.17
1049	Shoulder Pot Rst., Bnls.	34.33	32.03
1726	Beef Cubes, Med.	1.78	1.86
1652	Lean Trim	10.04	10.86
9000	Fat Trim	4.82	3.43
N/A	Cut Loss	0.08	0.23
	TOTAL	100.00	100.00

MEAN VALUES FOR CUTTING TIMES (IN SECONDS) FROM ONE-PIECE CLOD STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.43	6.88
Pretrim	0.00	0.00
Cutting	116.37	118.10
Trim & Tray	93.21	81.07
Lean Trim	41.13	39.66
Total Time	258.14	245.71

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM TWO
PIECE CLOD (CLOD PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1050	Shoulder Stk., Bnls.	43.63	39.09
1049	Shoulder Pot Rst., Bnls.	48.24	50.49
1717	Beef Cubed Steak	2.31	1.96
1652	Lean Trim	2.84	4.06
9000	Fat Trim	2.77	4.19
N/A	Cut Loss	0.21	0.21
	TOTAL	100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM TWO PIECE CLOD (CLOD
PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.53	6.32
Pretrim	0.00	0.00
Cutting	26.85	23.98
Trim & Tray	67.90	60.74
Lean Trim	21.30	24.00
TOTAL TIME	123.58	115.04

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM TWO
PIECE CLOD (TOP BLADE PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1084	Top Blade Stk., Bnls.	33.80	32.18
1080	Top Blade Pot Rst., Bnls.	33.56	31.95
1717	Beef Cubed Steak	0.36	0.50
1652	Lean Trim	22.77	25.96
9000	Fat Trim	9.44	9.33
N/A	Cut Loss	0.07	0.08
	TOTAL	100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM TWO PIECE CLOD (TOP
BLADE PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.23	5.85
Pretrim	0.00	0.00
Cutting	67.31	56.76
Trim & Tray	13.98	8.47
Lean Trim	18.20	10.45
TOTAL TIME	106.72	81.53

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM LIP ON
RIBEYE STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1207	Ribeye Stk.	82.57	81.60
1713	Beef for Stew	1.66	2.50
1652	Lean Trim	3.37	3.59
9000	Fat Trim	12.02	12.10
N/A	Cut Loss	0.38	0.21
TOTAL		100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM LIP ON RIBEYE STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.34	7.71
Pretrim	13.75	20.79
Cutting	34.17	26.43
Trim & Tray	56.77	51.26
Lean Trim	40.38	32.57
TOTAL TIME	152.41	138.76

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM RIBEYE
ROLL STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1207	Ribeye Stk.	98.56	94.37
1652	Lean Trim	2.16	3.44
9000	Fat Trim	1.84	1.98
N/A	Cut Loss	0.14	0.21
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM RIBEYE ROLL STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.54	7.75
Pretrim	2.95	1.79
Cutting	29.02	22.71
Trim & Tray	31.21	27.07
Lean Trim	0.00	0.00
TOTAL TIME	70.72	59.32

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM 0X1
BONELESS STRIPLOIN STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1295	Top Loin Stk., Bnls.	86.06	88.01
1652	Lean Trim	4.93	5.27
9000	Fat Trim	8.69	6.44
N/A	Cut Loss	0.32	0.28
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM 0X1 BONELESS STRIPLOIN
STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.95	7.91
Pretrim	0.00	0.00
Cutting	35.03	37.17
Trim & Tray	116.87	102.98
Lean Trim	12.78	11.46
TOTAL TIME	171.63	159.52

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM 0x1
SHORT LOIN STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1316	Porterhouse Stk., NT	28.55	30.03
1330	T-Bone Stk., NT	45.80	40.83
1295	Top Loin Stk., Bnls.	8.62	9.73
1726	Beef Cubes, Med.	1.36	1.88
1713	Beef for Stew	0.64	0.55
1652	Lean Trim	3.78	5.03
9000	Fat Trim	4.56	4.57
9001	Bone	6.19	7.04
N/A	Cut Loss	0.50	0.34
TOTAL		100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM 0x1 SHORT LOIN
STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	10.33	12.86
Pretrim	0.00	0.00
Cutting	49.29	51.08
Trim & Tray	199.77	184.74
Lean Trim	50.42	66.06
TOTAL TIME	309.81	314.74

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM 1x1 BONE-
IN STRIPLOIN STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1289	Top Loin Stk., BI	67.05	67.95
1726	Beef Cubes, Med.	2.70	2.82
1295	Top Loin Stk., Bnls.	12.22	11.36
1652	Lean Trim	4.44	4.79
9000	Fat Trim	6.05	6.20
9001	Bone	6.93	6.20
N/A	Cut Loss	0.61	0.68
TOTAL		100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM 1x1 BONE-IN STRIPLOIN
STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	9.02	9.68
Pretrim	0.00	0.00
Cutting	43.00	44.05
Trim & Tray	148.62	159.40
Lean Trim	46.12	51.79
TOTAL TIME	246.76	264.92

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM BONELESS
TOP SIRLOIN STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1346	Top Sirloin Stk., Bnls.	76.85	73.67
1732	Cubes for Kabobs	8.58	8.01
1652	Lean Trim	5.86	5.52
9000	Fat Trim	8.64	12.64
N/A	Cut Loss	0.07	0.16
TOTAL		100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM BONELESS TOP SIRLOIN
STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.41	7.83
Pretrim	0.00	0.00
Cutting	28.33	29.81
Trim & Tray	53.00	47.50
Lean Trim	59.22	58.77
TOTAL TIME	147.96	143.91

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM BUTT
TENDER STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1390	Tenderloin Stk., Pld.	92.64	0.00*
1652	Lean Trim	5.91	0.00*
9000	Fat Trim	1.24	0.00*
N/A	Cut Loss	0.21	0.00*
TOTAL		100.00	0.00*

*No Select Butt Tenders were fabricated in this study

**MEAN CUTTING TIMES (IN SECONDS) FROM BUTT TENDER STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.40	0.00*
Pretrim	0.00	0.00*
Cutting	19.80	0.00*
Trim & Tray	29.63	0.00*
Lean Trim	2.25	0.00*
TOTAL TIME	58.08	0.00*

*No Select Butt Tenders were fabricated in this study

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM
TENDERLOIN STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1390	Tenderloin Stk., Pld.	78.02	78.75
1389	Tenderloin Rst., Pld.	20.94	19.50
1652	Lean Trim	0.65	0.76
9000	Fat Trim	0.24	0.78
N/A	Cut Loss	0.15	0.21
TOTAL		100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM TENDERLOIN STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	5.71	6.16
Pretrim	0.00	0.00
Cutting	9.83	14.57
Trim & Tray	14.08	23.79
Lean Trim	0.00	0.00
TOTAL TIME	29.62	44.52

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM TWO
PIECE TOP SIRLOIN (BUTT PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1346	Top Sirloin Stk., Bnls.	87.27	81.01
1732	Cubes for Kabobs	7.52	11.88
1652	Lean Trim	2.19	6.08
9000	Fat Trim	2.96	0.56
N/A	Cut Loss	0.06	0.47
TOTAL		100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM TWO PIECE TOP SIRLOIN
(BUTT PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.04	8.65
Pretrim	5.65	7.67
Cutting	16.46	24.24
Trim & Tray	12.87	27.63
Lean Trim	9.36	16.64
TOTAL TIME	51.38	84.83

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM TWO
PIECE TOP SIRLOIN (CAP PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
N/A	Cap Stk.	82.36	76.40
1652	Lean Trim	17.64	23.22
9000	Fat trim	0.00	0.00
N/A	Cut Loss	0.00	0.38
TOTAL		100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM TWO PIECE TOP SIRLOIN
(CAP PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	9.73	6.51
Pretrim	0.00	0.00
Cutting	18.01	34.44
Trim & Tray	10.67	15.90
Lean Trim	14.77	17.68
TOTAL TIME	53.18	74.53

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM DENUDED
INSIDE ROUND STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1475	Top Round Rst.	33.54	33.70
1464	Top Round Stk.	41.81	44.38
N/A	London Broil	14.52	12.95
1479	Top Round Cubes, Med.	1.58	1.21
1652	Lean Trim	7.29	6.68
9000	Fat Trim	1.10	0.97
N/A	Cut Loss	0.16	0.11
TOTAL		100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM DENUDED INSIDE ROUND
STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	8.85	8.01
Pretrim	0.00	0.00
Cutting	41.17	47.59
Trim & Tray	55.91	61.88
Lean Trim	36.45	27.62
TOTAL TIME	142.38	145.10

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM EYE OF
ROUND STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1500	Eye of Round Rst.	69.19	70.67
1501	Eye of Round Stk.	27.42	25.91
9000	Fat Trim	3.17	3.27
N/A	Cut Loss	0.22	0.15
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM EYE OF ROUND
STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.35	7.68
Pretrim	9.64	9.48
Cutting	7.14	8.63
Trim & Tray	10.63	10.66
Lean Trim	0.00	0.00
TOTAL TIME	33.76	36.45

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM HEEL-OUT
ROUND (KNUCKLE PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1511	Tip Rst., Cap Off	39.20	41.99
1520	Tip Stk., Cap Off	44.11	44.67
1529	Tip Cubes, Med.	8.34	5.68
1652	Lean Trim	6.98	6.21
9000	Fat Trim	1.26	1.25
N/A	Cut Loss	0.11	0.20
	TOTAL	100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM HEEL-OUT ROUND
(KNUCKLE PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.87	7.62
Pretrim	0.00	0.00
Cutting	21.11	18.17
Trim & Tray	16.21	15.78
Lean Trim	27.12	15.08
TOTAL TIME	71.31	56.65

MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM HEEL-OUT
ROUND (ROUND PORTION) STRATIFIED BY QUALITY GRADE

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1484	Rump Rst., Bnls.	9.26	9.23
1443	Round Stk., Bnls.	42.77	50.97
1501	Eye of Round Stk.	11.39	3.36
1475	Top Round Rst.	11.17	10.55
1457	Round Cubes, Med.	3.48	4.71
1652	Lean Trim	11.72	10.15
9000	Fat Trim	10.01	10.85
N/A	Cut Loss	0.20	0.18
	TOTAL	100.00	100.00

MEAN CUTTING TIMES (IN SECONDS) FROM HEEL-OUT ROUND
(ROUND PORTION) STRATIFIED BY QUALITY GRADE

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	9.13	9.89
Pretrim	24.80	12.86
Cutting	56.09	62.08
Trim & Tray	265.32	262.08
Lean Trim	156.70	174.74
TOTAL TIME	512.04	521.65

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM PEELED
KNUCKLE STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1511	Tip Rst., Cap Off	46.79	44.34
1520	Tip Stk., Cap Off	39.12	41.40
1529	Tip Cubes, Med.	8.90	7.27
1652	Lean Trim	3.96	5.61
9000	Fat Trim	1.19	1.28
N/A	Cut Loss	0.04	0.10
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM PEELED KNUCKLE
STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	6.93	7.13
Pretrim	0.00	0.00
Cutting	16.55	16.61
Trim & Tray	14.77	14.81
Lean Trim	28.25	33.16
TOTAL TIME	66.50	71.71

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM PEELED
KNUCKLE (INNOVATIVE CUT) STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
N/A	Tip Eye Rst.	23.38	22.98
N/A	Tip Wafer Stk.	24.26	23.06
1529	Tip Cubes, Med.	21.95	21.43
1652	Lean Trim	27.42	32.53
9000	Fat Trim	0.92	0.00
N/A	Cut Loss	0.07	0.00
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM PEELED KNUCKLE
(INNOVATIVE CUT) STRATIFIED BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.84	7.78
Pretrim	0.00	0.00
Cutting	170.71	139.97
Trim & Tray	33.65	42.83
Lean Trim	83.05	38.26
TOTAL TIME	295.25	228.84

**MEAN PERCENTAGE YIELD VALUES FOR RETAIL CUTS FROM ROUND
FLAT STRATIFIED BY QUALITY GRADE**

UPC	ITEM	QUALITY GRADE	
		Choice	Select
1487	Bottom Round Rst.	30.27	26.81
1488	Bottom Round Stk.	37.35	38.53
1484	Rump Rst., Bnls.	19.83	19.08
1652	Lean Trim	9.01	9.40
9000	Fat Trim	3.35	6.10
N/A	Cut Loss	0.19	0.08
	TOTAL	100.00	100.00

**MEAN CUTTING TIMES (IN SECONDS) FROM ROUND FLAT STRATIFIED
BY QUALITY GRADE**

TIMES	QUALITY GRADE	
	Choice	Select
Box to Table	7.32	7.61
Pretrim	19.46	20.17
Cutting	38.01	41.38
Trim & Tray	97.97	123.10
Lean Trim	29.23	37.83
TOTAL TIME	191.99	230.09