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**APPENDICES**

**APPENDIX A**  
**Iron Contents of Meat**

Table 13. Analysis of Variance for Iron Contents of Meat

=====				
	Source of Variance	Degree of Freedom	Mean Square	F-value
-----				
Total Iron	kind of meat	15	31525.92	121.52*
	error	144	259.43	
Heme Iron	kind of meat	15	2224.70	92.86*
	error	144	23.96	
Nonheme Iron	kind of meat	15	21740.17	106.98*
	error	144	203.21	
Soluble iron	kind of meat	15	137.18	66.82*
	error	144	2.05	

\* denotes value of  $P < 0.05$ .





**APPENDIX B**

**Effects of Heat Treatments on Meat Iron Content**

Table 14. Analysis of Variance for Effects of Heat  
Treatments on Iron Contents of Meat

		Source of Variation	df	Mean Square	F-value
Heme Iron	heat treatment (H)		4	5897.55	70.29*
	kind of meat (K)		15	84134.03	1002.77*
	H x K		60	386.32	4.60*
	residual		240	83.90	
Nonheme Iron	heat treatment (H)		4	6049.48	6.34*
	kind of meat (K)		15	805270.26	844.47*
	H x K		60	2337.99	2.45*
	residual		240	953.58	
Soluble Iron	heat treatment (H)		4	6888.42	10.52*
	kind of meat (K)		15	9563.46	14.61*
	H x K		60	1541.82	2.35*
	residual		240	654.74	

df = degree of freedom

\* denotes value of  $P < 0.05$ .

**Table 15. Comparison of Regression Lines for Effect of Boiling on Heme Iron Contents of Red Meat**

					Deviations from Regression		
	df	$\Sigma X^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef round	3	1968.75	-561.6	170.66	2	10.46	
pork round	3	1968.75	-1062.3	650.67	2	77.47	
chicken leg	3	1968.75	-1652.4	1525.40	2	138.52	
					6	226.45	37.74
<b>Pooled</b>							
	9	5906.25	-3276.2	2346.73	8	529.42	
Difference between slopes					2	302.97	151.49

Comparison of slopes:  $F = 151.49/37.74 = 4.01$  (df = 2,6) not significant.

Table 16. Comparison of Regression Lines for Effect of Boiling on Heme Iron Contents of White Meat

					Deviations from Regression		
					df	SS	MS
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$			
<b>Within</b>							
beef tenderloin	3	1968.75	-570.15	186.07	2	20.95	
pork tenderloin	3	1986.75	-1548.60	1449.02	2	230.91	
chicken breast	3	1968.75	-1396.65	1192.67	2	201.87	
					6	453.73	75.62
<hr/>							
Pooled	9	5906.25	-3515.40	2827.76	8	735.39	
Difference between slopes					2	281.66	140.83
<hr/>							
Comparison of slopes: $F = 140.83/75.62 = 1.86$ (df = 2,6) not significant.							
<hr/>							

**Table 17. Comparison of Regression Lines for Effect of Boiling on Heme Iron Contents of Liver**

					Deviations from Regression		
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef liver	3	1968.75	-620.85	215.36	2	19.57	
pork liver	3	1968.75	-1081.65	696.44	2	102.17	
chicken liver	3	1968.75	-909.30	454.01	2	34.03	
					6	155.77	25.96
<b>Pooled</b>							
	9	5906.25	-2611.80	1365.81	8	210.85	
Difference between slopes					2	55.08	27.54
<p>Comparison of slopes: <math>F = 27.54/5.96 = 1.06</math> (df = 2,6) not significant.</p>							

**Table 18. Comparison of Regression Lines for Effect of Boiling on Heme Iron Contents of Heart**

	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	Deviations from Regression		
					df	SS	MS
<b>Within</b>							
beef heart	3	1968.75	-671.10	234.58	2	5.82	
pork heart	3	1968.75	-716.70	311.47	2	50.56	
chicken heart	3	1968.75	-511.95	141.37	2	8.24	
					6	64.62	10.77
<b>Pooled</b>							
	9	5906.25	-1899.75	687.42	8	76.37	
Difference between slopes					2	11.75	5.88
<p>Comparison of slopes: <math>F = 5.88/10.77 = 0.55</math> (df= 2,6) not significant.</p>							

Table 19. Comparison of Regression Lines for Effect of Boiling on Soluble Iron Contents of Red Meat

					Deviations from Regression		
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef round	3	1968.75	3261.15	5754.73	2	352.77	
pork round	3	1968.75	1704.15	1524.79	2	49.68	
chicken leg	3	1968.75	4077.75	8853.03	2	407.04	
					6	809.49	134.91
<b>Pooled</b>							
	9	5906.25	9043.05	16132.55	8	2286.75	
Difference between slopes					2	1477.26	738.63

Comparison of slopes:  $F = 738.63/134.91 = 5.47$  (df = 2,6) significant.

Table 20. Comparison of Regression Lines for Effect of Boiling on Soluble Iron Contents of White Meat

					Deviations from Regression		
					df	SS	MS
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef tenderloin	3	1968.75	1918.05	1963.79	2	95.13	
pork tenderloin	3	1968.75	2876.25	4428.64	2	226.58	
chicken breast	3	1968.75	4974.30	14660.00	2	2091.79	
					6	2413.50	402.25
<b>Pooled</b>							
	9	5906.25	9768.50	21052.43	8	4896.06	
					2	2482.56	1241.28
Comparison of slopes: $F = 1241.28/402.25 = 3.09$ (df = 2,6) not significant.							



Table 21. Comparison of Regression Lines for Effect of Boiling on Soluble Iron Contents of Liver

					Deviations from Regression		
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef liver	3	1968.75	1150.05	1179.28	2	507.48	
pork liver	3	1968.75	16174.50	134052.86	2	1169.33	
chicken liver	3	1968.75	1446.90	1294.09	2	230.71	
					6	1907.52	317.92
<b>Pooled</b>							
	9	5906.25	18771.45	136526.23	8	76866.15	
Difference between slopes					2	74958.62	37479.31

Comparison of slopes:  $F = 37479.31/317.92 = 117.89$  (df = 2,6) significant.

Table 22. Comparison of Regression Lines for Effect of Boiling on Soluble Iron Contents of Heart

					Deviations from Regression		
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef heart	3	1968.75	2792.55	4291.11	2	330.05	
pork heart	3	1968.75	975.30	754.78	2	271.63	
chicken heart	3	1968.75	1835.55	1747.57	2	36.21	
					6	637.89	106.32
<b>Pooled</b>							
	9	5906.25	5603.40	6793.46	8	1477.38	
Difference between slopes					2	839.49	419.75

Comparison of slopes:  $F = 419.75/106.32 = 3.95$  (df = 2,6) not significant.

**APPENDIX C**

**Effect of Freezing on Meat Iron Content**

**Table 23. Analysis of Variance for Effect of Freezing on Iron Contents of Meat**

		Source of Variation	df	Mean Square	F-value
Heme Iron	freezing (F)		3	35.13	0.28
	kind of meat (K)		15	92900.87	729.73 *
	F x K		45	7.06	0.06
	residual		192	127.31	
Nonheme Iron	freezing (F)		3	48.76	0.15
	kind of meat (K)		15	615735.72	1892.69 *
	F x K		45	18.93	0.06
	residual		192	325.32	
Soluble Iron	freezing (F)		3	344.77	4.31 *
	kind of meat (K)		15	5074.96	63.39 *
	F x K		45	132.56	1.66 *
	residual		192	80.06	

df = degree of freedom

\* denotes value of  $P < 0.05$ .

Table 24. Comparison of Regression Lines for Effect of Freezing on Soluble Iron Contents of Red Meat

					Deviations from Regression		
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef round	3	8.75	108.03	1534.73	2	200.96	
pork round	3	8.75	6.75	13.13	2	7.92	
chicken leg	3	8.75	121.70	1889.04	2	196.37	
					6	405.25	67.54
<b>Pooled</b>							
	9	26.25	236.48	3436.90	8	1306.51	
Difference between slopes					2	901.60	450.63

Comparison of slopes:  $F = 450.63/67.54 = 6.67$  (df = 2,6) significant.

**Table 25. Comparison of Regression Lines for Effect of Freezing on Soluble Iron Contents of White Meat**

					Deviations from Regression		
	df	$\Sigma X^2$	$\Sigma xy$	$\Sigma y^2$	df	SS	MS
<b>Within</b>							
beef tenderloin	3	8.75	63.51	519.10	2	58.13	
pork tenderloin	3	8.75	0.20	145.85	2	99.22	
chicken breast	3	8.75	110.00	1446.19	2	63.33	
					6	220.68	36.78
<b>Pooled</b>							
	9	26.25	193.71	2111.14	8	681.67	
Difference between slopes					2	460.99	230.49

Comparison of slopes:  $F = 230.49/36.78 = 6.27$  (df = 2,6) significant.

**Table 26. Comparison of Regression Lines for Effect of Freezing on Soluble Iron Contents of Liver**

					Deviations from Regression		
					df	SS	MS
	df	$\Sigma x^2$	$\Sigma xy$	$\Sigma y^2$			
<b>Within</b>							
beef liver	3	8.75	-2.98	25.80	2	24.79	
pork liver	3	8.75	696.49	75897.27	2	20457.46	
chicken liver	3	8.75	12.50	18.73	2	0.87	
					6	20483.10	3413.85
<b>Pooled</b>							
	9	26.25	706.01	75941.80	8	56953.22	
<b>Difference between slopes</b>					2	36470.10	18235.05

Comparison of slopes:  $F = 18235.05/3413.85 = 5.34$  (df = 2,6) significant.

Table 27. Comparison of Regression Lines for Effect of Freezing on Soluble Iron Contents of Heart

					Deviations from Regression		
					df	SS	MS
	df	$\Sigma X^2$	$\Sigma xy$	$\Sigma y^2$			
<b>Within</b>							
beef heart	3	8.75	58.32	394.03	2	5.32	
pork heart	3	8.75	494.30	34243.85	2	6320.14	
chicken heart	3	8.75	46.91	1484.39	2	1232.90	
					6	7558.36	159.73
<b>Pooled</b>							
	9	26.25	599.53	36122.27	8	22429.46	
Difference between slopes					2	14871.10	7435.55
<p>Comparison of slopes: <math>F = 7435.55/159.73 = 5.90</math> (df = 2,6) significant.</p>							



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