

FINAL REPORT

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R.R. #2, Box 298, Bloomington, IL 61704

Title: **AVAILABILITY OF ENERGY IN RENDERED BY-PRODUCTS USED IN
POULTRY RATIONS**

PI: Dr. Jeffrey D. Firman
116b Animal Sciences Research Center
University of Missouri
Columbia, MO 65211
(573)882-9427
(573)882-6640 (fax)
firmanj@missouri.edu

Co-investigators: Dr. David Ledoux

Project Starting Date: July, 2000

Projected Completion Date: March, 2003

1. Introduction

Animal by-product meals are a significant source of several nutrients that are of value to the commercial poultry industry. These include protein and energy. The value of these products is based on the availability of these nutrients in the animal protein meals. Very little information on the available energy content of these meals for utilization by poultry has been collected. Due to this many nutritionists will place relatively low values on energy to avoid the potential for underfeeding of this important nutrient. Determining the correct metabolizable energy values for various by-products will increase the apparent value of these by-products for poultry rations.

Use of by-products in rations for poultry has the potential to improve utilization of rendered products. Each 1% increment of rendered by-product use would use as much as 75,000 tons of rendered product in the turkey industry alone. If an increase in the metabolizable energy content of these meals could be demonstrated, a substantial increase in use could occur.

2. Objectives:

To determine the energy availability of different animal by-product sources for turkeys and broilers.

3. Industry Summary

This project was designed to determine the energy availability of different animal by-product sources for turkeys and broilers. Energy analysis of 12 samples of meat and bone meal and 15 samples of poultry by-product meal were conducted using turkeys, broilers and the leghorn rooster as the research animals. Each sample will be analyzed in three different fashions (Zanella et al., 1999). The first of these will be the commonly used True Metabolizable Energy (TME) analysis based on the work of Sibbald (1986) and slightly modified for use in intact turkeys and cecectomized roosters. Briefly, birds will be denied access to feed for 36 hrs to clear the gut by being placed in digestibility cages. Each bird (8 replicates) will then be tube fed a quantity of feed equal to approximately 2% of body weight. Feces will then be collected for 48 hrs post feeding. In addition, endogenous feces will be collected from a similar group of birds at the same time with all procedures identical with the exception of the tube feeding. The energy from these feces will be used to correct for fecal energy that would have been excreted regardless of the feed sample being fed. Both feed energy in and fecal energy out (corrected for endogenous loss) will be measured by bomb calorimetry and TME calculated from the difference of these numbers. In the second series of experiments, a modified total collection will be done for determination of Apparent Metabolizable Energy (AME) and a longer term TME valuation. In these experiments, 3 wk old birds will be fed a basal diet and energy value determined. This basal diet will then be diluted (50%) by addition of the products being tested. Birds will be fed for 3 days on the test diet with total feed intake measured as well as total feces collection. Energy determination of feed and feces adjusted for the energy content of the basal ration will be used to determine AME. In a modification of this procedure, birds will be pulled from feed at both the beginning and end of the trial for 24 hrs and endogenous excreta collected for a 24 hr period on day 1 and 3 of the trial. Endogenous loss will be estimated from these birds for the entire collection period and used for adjustment of the AME values. A minimum of 6 pens of birds will be used for each feed determination. The third method will be based on ileal digesta contents. Cromic oxide will be added to diets at .05% of the diet. Poults being fed the test diets will be killed with CO₂ and ileal contents collected from Meckels diverticulum to the ileocolic juncture. Energy will be determined by the differences between cromic oxide concentration in

diet and digesta. All data were analyzed for differences due to procedure as well as samples within procedures.

Results of the project are found in the attached tables. Briefly, poultry meal samples ran at book values or somewhat lower. This is primarily due to the increased ash content and decreased fat content found in certain meals. Meals from many plants are showing changes in composition based on the carcass inclusion in the product. This is due to further processing of the chicken versus whole bird production of the past. The variety of assay methodologies utilized showed few differences (11 of 15 were similar) between procedures, indicating that any of the methods used are acceptable. This is as would be expected as each of the procedures should provide similar results. There was a tendency for turkey values to be slightly lower although statistical differences were not found.

Meat meal samples ran at book values or above. Improved processing procedures have probably improved digestibility in the recent past. Differences in procedure were found within samples in some cases. Generally this was manifested in lower values for chick digesta AME's. Chick and turkey values for meat meal samples were very similar within samples.

Overall it appears that any energy analysis method is acceptable, although there were more differences in meat meal samples than in poultry meal samples. There were also few differences between chickens and turkeys in these samples.

Abstract

This project was designed to determine the energy availability of different animal by-product sources for turkeys and broilers. Energy analysis of 12 samples of meat and bone meal and 15 samples of poultry by-product meal were conducted using turkeys, broilers and the leghorn rooster as the research animals. Each sample will be analyzed in three different fashions (Zanella et al., 1999). The first of these will be the commonly used True Metabolizable Energy (TME) analysis based on the work of Sibbald (1986) and slightly modified for use in intact turkeys and cecectomized roosters. Briefly, birds will be denied access to feed for 36 hrs to clear the gut by being placed in digestibility cages. Each bird (8 replicates) will then be tube fed a quantity of feed equal to approximately 2% of body weight. Feces will then be collected for 48 hrs post feeding. In addition, endogenous feces will be collected from a similar group of birds at the same time with all procedures identical with the exception of the tube feeding. The energy from these feces will be used to correct for fecal energy that would have been excreted regardless of the feed sample being fed. Both feed energy in and fecal energy out (corrected for endogenous loss) will be measured by bomb calorimetry and TME calculated from the difference of these numbers. In the second series of experiments, a modified total collection will be done for determination of Apparent Metabolizable Energy (AME) and a longer term TME valuation. In these experiments, 3 wk old birds will be fed a basal diet and energy value determined. This basal diet will then be diluted (50%) by addition of the products being tested. Birds will be fed for 3 days on the test diet with total feed intake measured as well as total feces collection. Energy determination of feed and feces adjusted for the energy content of the basal ration will be used to determine AME. In a modification of this procedure, birds will be pulled from feed at both the beginning and end of the trial for 24 hrs and endogenous excreta collected for a 24 hr period on day 1 and 3 of the trial. Endogenous loss will be estimated from these birds for the entire collection period and used for adjustment of the AME values. A minimum of 6 pens of birds will be used for each feed determination. The third method will be based on ileal digesta contents. Cromic oxide will be added to diets at .05% of the diet. Poults being fed the test diets will be killed with CO₂ and ileal contents collected from Meckels diverticulum to the ileocolic juncture. Energy will be determined by the differences between cromic oxide concentration in diet and digesta. All data were analyzed for differences due to procedure as well as samples within procedures.

Poultry meal samples ran at published values or somewhat lower. The variety of assay methodologies utilized showed few differences (11 of 15 were similar) between procedures, indicating that any of the methods used are acceptable. This is as would be expected as each of the procedures should provide similar results. There was a tendency for turkey values to be slightly lower although statistical differences were not found.

Meat meal samples ran at published values or above. Improved processing procedures have probably improved digestibility in the recent past. Differences in procedure were found within samples in some cases. Generally this was manifested in lower values for chick digesta AME's. Chick and turkey values for meat meal samples were very similar within samples.

Overall it appears that any energy analysis method is acceptable, although there were more differences in meat meal samples than in poultry meal samples. There were also few differences between chickens and turkeys in these samples.

Keywords: Poultry , turkey, broiler, energy, meat meal, poultry meal

Introduction

Animal by-product meals are a significant source of several nutrients that are of value to the commercial poultry industry. These include protein and energy. The value of these products is based on the availability of these nutrients in the animal protein meals. Very little information on the available energy content of these meals for utilization by poultry has been collected. Due to this many nutritionists will place relatively low values on energy to avoid the potential for underfeeding of this important nutrient. Determining the correct metabolizable energy values for various by-products will increase the apparent value of these by-products for poultry rations.

Use of by-products in rations for poultry has the potential to improve utilization of rendered products. Each 1% increment of rendered by-product use would use as much as 75,000 tons of rendered product in the turkey industry alone. If an increase in the metabolizable energy content of these meals could be demonstrated, a substantial increase in use could occur.

The ME and TME systems have been in place for a number of years and are widely used. In the future we may move to net energy systems as a more accurate method of estimating actual energy use by the bird for productive purposes, but this will not happen in the foreseeable future. In the realm of turkey nutrition, there have been few trials to determine the ME or TME content of feeds for turkeys. Most of the energy data has been used based on the broiler or the TME system with the Leghorn rooster (Sibbald, 1986). Analysis of feedstuffs used in our lab have shown significant differences in digestibilities of amino acids as well as energy values between commonly used book values and determined values in turkeys. Determined energy values of corn and soybean meal were lower in ducks than values found in chicken assays (Farhat et al., 1998) which implies that species differences may occur. Ostrowski-Meissner (1984) also reported differences between species. While there is substantial discussion in the literature about correct methodology for energy determinations, it appears that the original TME procedure of Sibbald (1987) is well accepted and that the total collection method of AME determination may be more accurate than the ileal digesta method (Scott et al., 1998) although this can be easily disputed (Zanella et al., 1999). These data should prove useful to the commercial poultry industry.

The objective of these studies was to determine the energy availability of different animal by-product sources for turkeys and broilers.

Procedures

Energy analysis of 12 samples of meat and bone meal and 15 samples of poultry by-product meal were conducted using turkeys, broilers and the leghorn rooster as the research animals. Each sample will be analyzed in three different fashions (Zanella et al., 1999). The first of these will be the commonly used True Metabolizable Energy (TME) analysis based on the work of Sibbald (1986) and slightly modified for use in intact turkeys and cecectomized roosters. Briefly, birds will be denied access to feed for 36 hrs to clear the gut by being placed in digestibility cages. Each bird (8 replicates) will then be tube fed a quantity of feed equal to approximately 2% of body weight. Feces will then be collected for 48 hrs post feeding. In addition, endogenous feces will be collected from a similar group of birds at the same time with all procedures identical with the exception of the tube feeding. The energy from these feces will be used to correct for fecal energy that would have been excreted regardless of the feed sample being fed. Both feed energy in and fecal energy out (corrected for endogenous loss) will be measured by

bomb calorimetry and TME calculated from the difference of these numbers. In the second series of experiments, a modified total collection will be done for determination of Apparent Metabolizable Energy (AME) and a longer term TME valuation. In these experiments, 3 wk old birds will be fed a basal diet and energy value determined. This basal diet will then be diluted (40%) by addition of the products being tested. Birds will be fed for 3 days on the test diet with total feed intake measured as well as total feces collection. Energy determination of feed and feces adjusted for the energy content of the basal ration will be used to determine AME. In a modification of this procedure, birds will be pulled from feed at both the beginning and end of the trial for 24 hrs and endogenous excreta collected for a 24 hr period on day 1 and 3 of the trial. Endogenous loss will be estimated from these birds for the entire collection period and used for adjustment of the AME values. A minimum of 6 pens of birds will be used for each feed determination. The third method will be based on ileal digesta contents. Cromic oxide will be added to diets at .05% of the diet. Poults being fed the test diets will be killed with CO₂ and ileal contents collected from Meckels diverticulum to the ileocolic juncture. Energy will be determined by the differences between chromic oxide concentration in diet and digesta. All data were analyzed for differences due to procedure as well as samples within procedures.

Results

Results for the experiments are presented in the attached tables. Statistical analysis output has also been provided. Poultry meal samples ran at published values or somewhat lower. The variety of assay methodologies utilized showed few differences (12 of 15) between procedures, indicating that any of the methods used are acceptable. This is as would be expected as each of the procedures should provide similar results. There was a tendency for turkey values to be slightly lower although statistical differences were not found.

Meat meal samples ran at published values or above. Improved processing procedures have probably improved digestibility in the recent past. Differences in procedure were found within samples in some cases. Generally this was manifested in lower values for chick digesta AME's. Chick and turkey values for meat meal samples were very similar within samples indicating that broiler or Leghorn rooster values would be acceptable for use in all species.

Discussion

Relatively little work has been done to evaluate the energy content of rendered poultry and meat meals. This study shows that a variety of different analytical methods can be used with similar results. While there have been arguments amongst scientists about analytical methodology, when looked at critically, each of the methods should yield similar results. For example, the standard AME procedure has been criticized as it does not account for endogenous losses as are done in the TME. However, if one feeds sufficient feed, the relative proportion of endogenous loss (which is high in the precision fed assay) becomes quite small and induces little variation as determined by these data.. Thus it can be concluded that all analytical methods are probably acceptable and should be used as appropriate to the conditions available.

Energy contents of meat meal were generally higher than those found by Martosiswoyo and Jensen in 1988, but similar to values determined more recently (Dale, 1997). This may be due to improved process control methods. Energy content of poultry meal samples were similar to below book values. This is a reflection of some of the higher ash contents seen more recently in poultry meals. Dale and coworkers (1993) found average energy values of poultry meals to be

over 4600 kcal/kg. However, these were very low ash content samples with fat content averaging over 32%.

Another area of concern is the use of energy values collected from different types/species of birds. Firman and Remus (1993) showed that there are some species differences and the reader should be cautioned that although there were no differences seen with these feedstuffs, other feedstuffs have been shown to differ in energy content between species.

Conclusions

1. Overall it appears that any energy analysis method is acceptable, although there were more differences in meat meal samples than in poultry meal samples.
2. There were also few differences between chickens and turkeys in these samples.
3. Energy content of some meat meal samples were higher than older published values.

Tables

Acknowledgements

We would like to acknowledge the support of Dr. Pearl in obtaining samples for this project.

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F&P-00 Sample Proximates

Sample	Protein %	Ash %	Fat%	Moisture %	Ca %	P %	Fiber %
2pm	59-61	16-18	13-15	3-5			
4pm	65	11-15	12	3	5	2.4	2.5
5pm	62	16	12	2.75	3	2	3
6pm	67	12	12	5			
7pm	67.4	10.5	11.9	5.2			
8pm	67-69	10-12	11-14	2.5-3.5			
9pm	63.59	18.13	8.69	8.90			0.84
10pm	62.5	18.5	11.5	3.5	6.5	3.25	
11pm	57		10.5	3.5			
12pm	67.5	15	14	3.5			
14pm	68.73	12.33	13.61	5.33			
15pm	62	18	10	12	5-10	2.8	3
16pm	60	20	14	8			
17pm	60.79	21.4	11.05	6.75			0.62
18pm	59-61	16-18	13-15	3-5			
2mbm	52	24.2	12	4.5			
3mbm	50	35	7	10	8-11	4-7	3
5mbm	50		7		7.4-8.8	4	3
7mbm	54		10	0.1			
8mbm	55	24	10	5			
9mbm	51	28.2	12.8	3.43	7.13	2.94	
10mbm	51.1	26.8	11.5	3.5			
12mbm	48	34	8	3	12	5.5	
13mbm	54.6	25.14	9.9	9.11			1.75
14mbm	51		10.25	3.5			
15mbm	54.92	25.8	9.51	5.2			1.09
16mbm	45		10	6			

F&P-00 Results
Methods

	2pm		4pm		5pm		6pm		7pm	
	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
Rooster TMEn	3492	a	2123	a	2944	abc	2188	a	2972	a
Turkey TMEn	2971	b	2454	a	2604	c	2054	a	2813	a
Chick Digesta AMEn	2956	b	2333	a	3059	abc	2128	a	2789	a
Chick Excreta AMEn	2939	b	2476	a	3171	ab	2221	a	2836	a
Chick Excreta TMEn	2980	b	2515	a	3203	a	2258	a	2889	a
Turkey Digesta AMEn	2973	b	2197	a	2706	abc	1957	a	2614	a
Turkey Excreta AMEn	3191	ab	2167	a	3072	abc	2185	a	2658	a
Turkey Excreta TMEn	3214	ab	2201	a	3091	ab	2206	a	2677	a

	8pm		9pm		10pm		11pm		12pm	
	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
Rooster TMEn	1980	a	2734	a	2944	a	2605	a	2536	a
Turkey TMEn	2348	a	2219	a	3163	a	2614	a	2726	a
Chick Digesta AMEn	2384	a	1971	a	2887	a	2381	a	2727	a
Chick Excreta AMEn	2434	a	2403	a	3105	a	2658	a	2469	a
Chick Excreta TMEn	2473	a	2444	a	3145	a	2700	a	2520	a
Turkey Digesta AMEn	2457	a	2264	a	2860	a	2433	a	2369	a
Turkey Excreta AMEn	2224	a	2499	a	2915	a	2382	a	2567	a
Turkey Excreta TMEn	2244	a	2527	a	2938	a	2408	a	2586	a

	14pm		15pm		16pm		17pm		18pm	
	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
Rooster TMEn	3111	a	1772	c	2462	a	3331	a	3192	a
Turkey TMEn	3104	a	1869	bc	2662	a	3014	a	2791	b
Chick Digesta AMEn	3011	a	1778	bc	2655	a	3119	a	2838	b
Chick Excreta AMEn	3135	a	2113	ab	2764	a	3197	a	3099	a
Chick Excreta TMEn	3180	a	2156	ab	2811	a	3239	a	3141	a
Turkey Digesta AMEn	3147	a	2246	a	2768	a	3142	a	3045	ab
Turkey Excreta AMEn	3325	a	1895	bc	2786	a	3099	a	3212	a
Turkey Excreta TMEn	3245	a	1936	abc	2807	a	3122	a	3238	a

	2mbm		3mbm		5mbm		7mbm		8mbm	
	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
Rooster TMEn	2240	bc	2469	a	3026	a	3329	a	2547	a
Turkey TMEn	2528	ab	2517	a	2600	bc	3103	ab	2585	a
Chick Digesta AMEn	2135	c	2436	a	2555	c	2705	b	2401	a
Chick Excreta AMEn	2508	ab	2577	a	2751	abc	3038	ab	2552	a
Chick Excreta TMEn	2475	abc	2614	a	2786	abc	3081	ab	2594	a
Turkey Digesta AMEn	2722	a	2454	a	2882	ab	2863	ab	2581	a
Turkey Excreta AMEn	2586	ab	2510	a	2975	a	2888	ab	2503	a
Turkey Excreta TMEn	2611	ab	2534	a	3004	a	3103	ab	2530	a

Rooster TMEn
 Turkey TMEn
 Chick Digesta AMEn
 Chick Excreta AMEn
 Chick Excreta TMEn
 Turkey Digesta AMEn
 Turkey Excreta AMEn
 Turkey Excreta TMEn

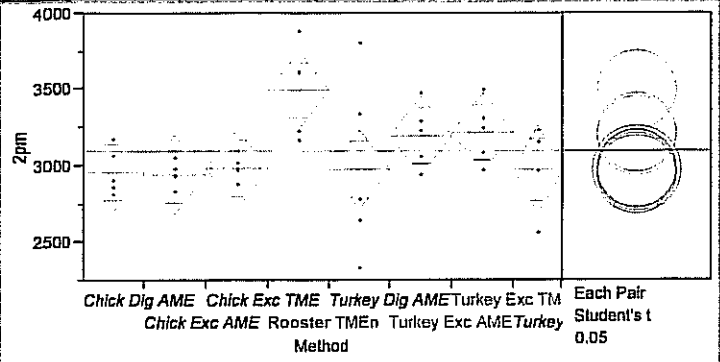
	9mbm		10mbm		12mbm		13mbm		14mbm	
	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
Rooster TMEn	3356	a	2685	a	1703	b	2282	a	2267	a
Turkey TMEn	2669	b	2789	a	2192	a	2010	a	2355	a
Chick Digesta AMEn	2858	b	2737	a	1813	b	2385	a	1953	a
Chick Excreta AMEn	3003	ab	2820	a	2168	a	2013	a	2332	a
Chick Excreta TMEn	3040	ab	2861	a	2204	a	2052	a	2369	a
Turkey Digesta AMEn	2946	ab	2891	a	1872	ab	2330	a	2067	a
Turkey Excreta AMEn	2822	b	2791	a	1975	ab	2115	a	2325	a
Turkey Excreta TMEn	2851	b	2811	a	1999	ab	2137	a	2355	a

Rooster TMEn
 Turkey TMEn
 Chick Digesta AMEn
 Chick Excreta AMEn
 Chick Excreta TMEn
 Turkey Digesta AMEn
 Turkey Excreta AMEn
 Turkey Excreta TMEn

	15mbm		16mbm	
	Mean	Std Err	Mean	Std Err
Rooster TMEn	2858	ab	2106	a
Turkey TMEn	2583	ab	1854	a
Chick Digesta AMEn	2474	b	1945	a
Chick Excreta AMEn	3079	a	1588	a
Chick Excreta TMEn	3123	a	1623	a
Turkey Digesta AMEn	2785	ab	2019	a
Turkey Excreta AMEn	2932	ab	2017	a
Turkey Excreta TMEn	2974	ab	2045	a

Rooster TMEn
 Turkey TMEn
 Chick Digesta AMEn
 Chick Excreta AMEn
 Chick Excreta TMEn
 Turkey Digesta AMEn
 Turkey Excreta AMEn
 Turkey Excreta TMEn

Oneway Analysis of 2pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.348285
Adj Rsquare	0.201124
Root Mean Square Error	283.1052
Mean of Response	3092.462
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1327806.5	189687	2.3667	0.0464
Error	31	2484605.2	80149		
C. Total	38	3812411.7			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2955.80	126.61	2697.6	3214.0
Chick Exc AME	5	2938.80	126.61	2680.6	3197.0
Chick Exc TME	5	2979.60	126.61	2721.4	3237.8
Rooster TME	5	3492.40	126.61	3234.2	3750.6
Turkey Dig AME	5	2972.80	126.61	2714.6	3231.0
Turkey Exc AME	5	3191.40	126.61	2933.2	3449.6
Turkey Exc TME	5	3213.60	126.61	2955.4	3471.8
Turkey TME	4	2971.00	141.55	2682.3	3259.7

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Turkey Dig AME	Turkey TME	Chick Dig AME	Chick Exc AME
Rooster TME	0.00	278.80	301.00	512.80	519.60	521.40	536.60	553.60
Turkey Exc TME	-278.80	0.00	22.20	234.00	240.80	242.60	257.60	274.80
Turkey Exc AME	-301.00	-22.20	0.00	211.80	218.60	220.40	235.60	252.60
Chick Exc TME	-512.80	-234.00	-211.80	0.00	6.80	8.60	23.80	40.80
Turkey Dig AME	-519.60	-240.80	-218.60	-6.80	0.00	1.80	17.00	34.00
Turkey TME	-521.40	-242.60	-220.40	-8.60	-1.80	0.00	15.20	32.20
Chick Dig AME	-536.60	-257.60	-235.60	-23.80	-17.00	-15.20	0.00	17.00
Chick Exc AME	-553.60	-274.80	-252.60	-40.80	-34.00	-32.20	-17.00	0.00

Alpha= 0.05

Comparisons for each pair using Student's t

t

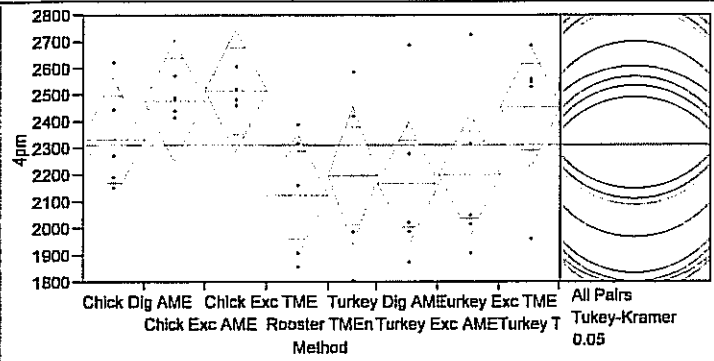
2.03951

Abs(Dif)-LSD

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Turkey Dig AME	Turkey TME	Chick Dig AME	Chick Exc AME
Rooster TME	-365.18	-86.38	-64.18	147.62	154.42	134.07	171.42	188.42
Turkey Exc TME	-86.38	-365.18	-342.98	-131.18	-124.39	-144.73	-107.38	-90.38
Turkey Exc AME	-64.18	-342.98	-365.18	-153.38	-146.58	-166.93	-129.58	-112.58
Chick Exc TME	147.62	-131.18	-153.38	-365.18	-358.38	-378.73	-341.38	-324.38
Turkey Dig AME	154.42	-124.38	-146.58	-358.38	-365.18	-385.53	-348.18	-331.18
Turkey TME	134.07	-144.73	-166.93	-378.73	-385.53	-408.28	-372.13	-355.13
Chick Dig AME	171.42	-107.38	-129.58	-341.38	-348.18	-372.13	-365.18	-348.18
Chick Exc AME	188.42	-90.38	-112.58	-324.38	-331.18	-355.13	-348.18	-365.18

Positive values show pairs of means that are significantly different.

Oneway Analysis of 4pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.297802
Adj Rsquare	0.139242
Root Mean Square Error	252.9294
Mean of Response	2311.077
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	841063.6	120152	1.8782	0.1074
Error	31	1983171.1	63973		
C. Total	38	2824234.8			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2333.00	113.11	2102.3	2563.7
Chick Exc AME	5	2476.40	113.11	2245.7	2707.1
Chick Exc TME	5	2514.60	113.11	2283.9	2745.3
Rooster TME	5	2123.40	113.11	1892.7	2354.1
Turkey Dig AME	4	2197.25	126.46	1939.3	2455.2
Turkey Exc AME	5	2166.80	113.11	1936.1	2397.5
Turkey Exc TME	5	2200.60	113.11	1966.9	2431.3
Turkey TME	5	2453.80	113.11	2223.1	2684.5

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME	Turkey Exc TME	Turkey Dig AME	Turkey Exc AME	Rooster TME
Chick Exc TME	0.00	38.20	60.80	181.60	314.00	317.35	347.80	391.20
Chick Exc AME	-38.20	0.00	22.60	143.40	275.80	278.15	309.60	353.00
Turkey TME	-60.80	-22.60	0.00	120.80	253.20	256.55	287.00	330.40
Chick Dig AME	-181.60	-143.40	-120.80	0.00	132.40	135.75	166.20	209.60
Turkey Exc TME	-314.00	-275.80	-253.20	-132.40	0.00	3.35	33.80	77.20
Turkey Dig AME	-317.35	-278.15	-256.55	-135.75	-3.35	0.00	30.45	73.85
Turkey Exc AME	-347.80	-309.60	-287.00	-166.20	-33.80	-30.45	0.00	43.40
Rooster TME	-391.20	-353.00	-330.40	-209.60	-77.20	-73.85	-43.40	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

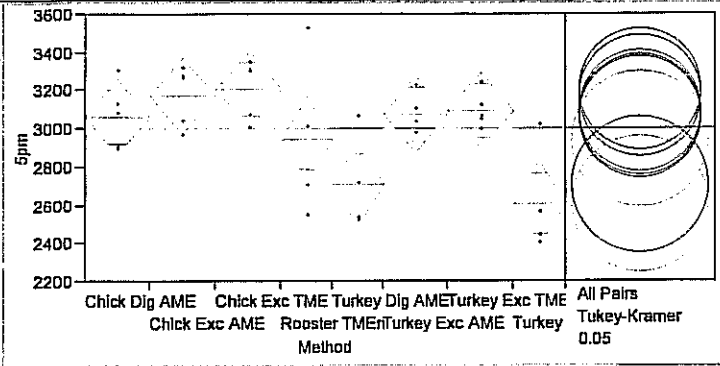
3.24626

Abs(Dif)-LSD

	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME	Turkey Exc TME	Turkey Dig AME	Turkey Exc AME	Rooster TME
Chick Exc TME	-519.29	-481.09	-458.49	-337.69	-205.29	-233.44	-171.49	-128.09
Chick Exc AME	-481.09	-519.29	-496.69	-375.89	-243.49	-271.64	-209.69	-166.29
Turkey TME	-458.49	-496.69	-519.29	-398.49	-266.09	-294.24	-232.29	-188.69
Chick Dig AME	-337.69	-375.89	-398.49	-519.29	-386.89	-415.04	-353.09	-309.69
Turkey Exc TME	-205.29	-243.49	-266.09	-386.89	-519.29	-547.44	-485.49	-442.09
Turkey Dig AME	-233.44	-271.64	-294.24	-415.04	-547.44	-580.59	-520.34	-476.94
Turkey Exc AME	-171.49	-209.69	-232.29	-353.09	-485.49	-520.34	-519.29	-475.89
Rooster TME	-128.09	-166.29	-188.69	-309.69	-442.09	-476.94	-475.89	-519.29

Positive values show pairs of means that are significantly different.

Oneway Analysis of 5pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.507677
Adj Rsquare	0.388884
Root Mean Square Error	218.0937
Mean of Response	2999.892
Observations (or Sum Wgts)	37

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1422400.1	203200	4.2721	0.0024
Error	29	1379381.5	47565		
C. Total	36	2801781.6			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	3059.40	97.53	2859.9	3258.9
Chick Exc AME	5	3170.60	97.53	2971.1	3370.1
Chick Exc TME	5	3203.20	97.53	3003.7	3402.7
Rooster TME	4	2943.75	109.05	2720.7	3166.8
Turkey Dig AME	4	2705.75	109.05	2482.7	2928.8
Turkey Exc AME	5	3072.00	97.53	2872.5	3271.5
Turkey Exc TME	5	3091.00	97.53	2891.5	3290.5
Turkey TME	4	2604.25	109.05	2381.2	2827.3

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME	Rooster TME	Turkey Dig AME	Turkey TME
Chick Exc TME	0.00	32.60	112.20	131.20	143.60	259.45	497.45	598.95
Chick Exc AME	-32.60	0.00	79.60	98.60	111.20	226.85	464.85	588.35
Turkey Exc TME	-112.20	-79.60	0.00	19.00	31.60	147.25	385.25	486.75
Turkey Exc AME	-131.20	-98.60	-19.00	0.00	12.60	128.25	366.25	467.75
Chick Dig AME	-143.60	-111.20	-31.60	-12.60	0.00	115.65	353.65	455.15
Rooster TME	-259.45	-226.85	-147.25	-128.25	-115.65	0.00	238.00	339.50
Turkey Dig AME	-497.45	-464.85	-385.25	-366.25	-353.65	-238.00	0.00	101.50
Turkey TME	-598.95	-588.35	-486.75	-467.75	-455.15	-339.50	-101.50	0.00

Alpha=0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

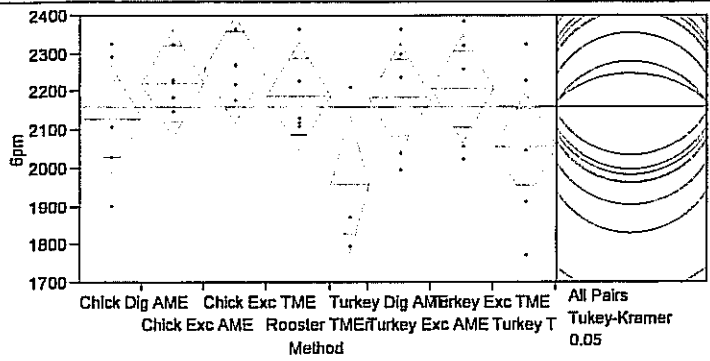
3.26166

Abs(Dif)-LSD

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME	Rooster TME	Turkey Dig AME	Turkey TME
Chick Exc TME	-449.90	-417.30	-337.70	-318.70	-306.10	-217.74	20.26	121.76
Chick Exc AME	-417.30	-449.90	-370.30	-351.30	-338.70	-250.34	-12.34	89.16
Turkey Exc TME	-337.70	-370.30	-449.90	-430.90	-418.30	-329.94	-91.94	9.56
Turkey Exc AME	-318.70	-351.30	-430.90	-449.90	-437.30	-348.94	-110.94	-9.44
Chick Dig AME	-306.10	-338.70	-418.30	-437.30	-449.90	-361.54	-123.54	-22.04
Rooster TME	-217.74	-250.34	-329.94	-348.94	-361.54	-503.00	-265.00	-163.50
Turkey Dig AME	20.26	-12.34	-91.94	-110.94	-123.54	-265.00	-503.00	-401.50
Turkey TME	121.76	89.16	9.56	-9.44	-22.04	-163.50	-401.50	-503.00

Positive values show pairs of means that are significantly different.

Oneway Analysis of 6pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.271098
Adj Rsquare	0.101021
Root Mean Square Error	155.279
Mean of Response	2159.658
Observations (or Sum Wgts)	38

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	269031.89	38433.1	1.5940	0.1755
Error	30	723346.67	24111.6		
C. Total	37	992378.55			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2128.20	69.443	1986.4	2270.0
Chick Exc AME	5	2220.80	69.443	2079.0	2362.6
Chick Exc TME	5	2257.60	69.443	2115.8	2399.4
Rooster TME	5	2187.80	69.443	2046.0	2329.6
Turkey Dig AME	3	1956.67	89.650	1773.6	2139.8
Turkey Exc AME	5	2184.80	69.443	2042.8	2326.4
Turkey Exc TME	5	2206.40	69.443	2084.6	2348.2
Turkey TME	5	2054.00	69.443	1912.2	2195.8

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Rooster TME	Turkey Exc AME	Chick Dig AME	Turkey TME	Turkey Dig AME
Chick Exc TME	0.00	36.80	51.20	69.80	73.00	129.40	203.60	300.93
Chick Exc AME	-36.80	0.00	14.40	33.00	36.20	92.60	166.80	264.13
Turkey Exc TME	-51.20	-14.40	0.00	18.60	21.80	78.20	152.40	249.73
Rooster TME	-69.80	-33.00	-18.60	0.00	3.20	59.60	133.80	231.13
Turkey Exc AME	-73.00	-36.20	-21.80	-3.20	0.00	56.40	130.60	227.93
Chick Dig AME	-129.40	-92.60	-78.20	-59.60	-56.40	0.00	74.20	171.53
Turkey TME	-203.60	-166.80	-152.40	-133.80	-130.60	-74.20	0.00	97.33
Turkey Dig AME	-300.93	-264.13	-249.73	-231.13	-227.93	-171.53	-97.33	0.00

Alpha= 0.05

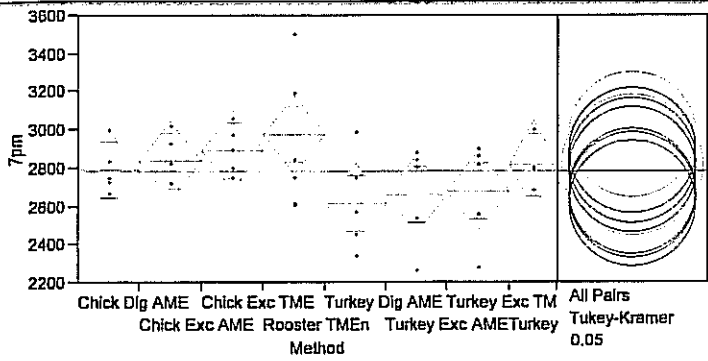
Comparisons for all pairs using Tukey-Kramer HSD

q*
3.25370
Abs(Dif)-LSD

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Rooster TME	Turkey Exc AME	Chick Dig AME	Turkey TME	Turkey Dig AME
Chick Exc TME	-319.54	-282.74	-268.34	-249.74	-246.54	-190.14	-115.94	-68.03
Chick Exc AME	-282.74	-319.54	-305.14	-286.54	-283.34	-226.94	-152.74	-104.83
Turkey Exc TME	-268.34	-305.14	-319.54	-300.94	-297.74	-241.34	-167.14	-119.23
Rooster TME	-249.74	-286.54	-300.94	-319.54	-316.34	-259.94	-185.74	-137.83
Turkey Exc AME	-246.54	-283.34	-297.74	-316.34	-319.54	-263.14	-188.94	-141.03
Chick Dig AME	-190.14	-226.94	-241.34	-259.94	-263.14	-319.54	-245.34	-197.43
Turkey TME	-115.94	-152.74	-167.14	-185.74	-188.94	-245.34	-319.54	-271.63
Turkey Dig AME	-68.03	-104.83	-119.23	-137.83	-141.03	-197.43	-271.63	-412.52

Positive values show pairs of means that are significantly different.

Oneway Analysis of 7pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.250842
Adj Rsquare	0.081432
Root Mean Square Error	226.2139
Mean of Response	2780.231
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	530598.2	75799.5	1.4812	0.2104
Error	31	1586354.8	51172.7		
C. Total	38	2116950.9			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2788.80	101.17	2582.5	2995.1
Chick Exc AME	5	2838.20	101.17	2629.9	3042.5
Chick Exc TME	5	2889.00	101.17	2682.7	3095.3
Rooster TME	5	2972.40	101.17	2766.1	3178.7
Turkey Dig AME	5	2613.80	101.17	2407.5	2820.1
Turkey Exc AME	5	2658.40	101.17	2452.1	2864.7
Turkey Exc TME	5	2670.60	101.17	2470.3	2882.9
Turkey TME	4	2813.25	113.11	2582.6	3043.9

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME
Rooster TME	0.00	83.40	138.20	159.15	183.60	295.80	314.00	358.60
Chick Exc TME	-83.40	0.00	52.80	75.75	100.20	212.40	230.60	275.20
Chick Exc AME	-138.20	-52.80	0.00	22.95	47.40	159.60	177.80	222.40
Turkey TME	-159.15	-75.75	-22.95	0.00	24.45	138.65	154.85	199.45
Chick Dig AME	-183.60	-100.20	-47.40	-24.45	0.00	112.20	130.40	175.00
Turkey Exc TME	-295.80	-212.40	-159.60	-136.65	-112.20	0.00	18.20	62.80
Turkey Exc AME	-314.00	-230.60	-177.80	-154.85	-130.40	-18.20	0.00	44.60
Turkey Dig AME	-358.60	-275.20	-222.40	-199.45	-175.00	-62.80	-44.60	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

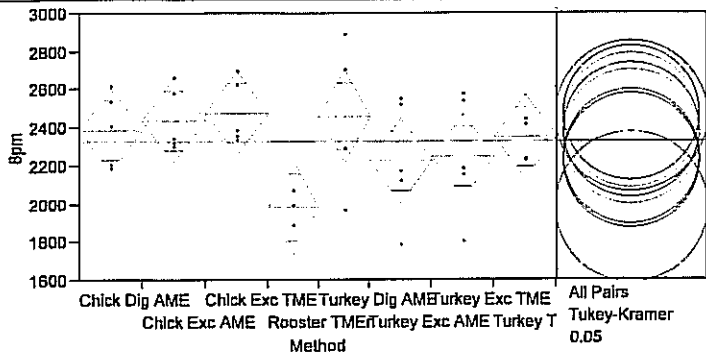
3.24626

Abs(Dif)-LSD

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME
Rooster TME	-464.44	-381.04	-328.24	-333.47	-280.84	-168.64	-150.44	-105.84
Chick Exc TME	-381.04	-464.44	-411.64	-416.87	-364.24	-252.04	-233.84	-189.24
Chick Exc AME	-328.24	-411.64	-464.44	-469.67	-417.04	-304.84	-286.64	-242.04
Turkey TME	-333.47	-416.87	-469.67	-519.26	-468.17	-355.97	-337.77	-293.17
Chick Dig AME	-280.84	-364.24	-417.04	-468.17	-464.44	-352.24	-334.04	-289.44
Turkey Exc TME	-168.64	-252.04	-304.84	-355.97	-352.24	-464.44	-446.24	-401.64
Turkey Exc AME	-150.44	-233.84	-286.64	-337.77	-334.04	-446.24	-464.44	-419.84
Turkey Dig AME	-105.84	-189.24	-242.04	-293.17	-289.44	-401.64	-419.84	-464.44

Positive values show pairs of means that are significantly different.

Oneway Analysis of Bpm By Method



Oneway Anova

Summary of Fit

Rsquare	0.31632
Adj Rsquare	0.156794
Root Mean Square Error	242.825
Mean of Response	2323.184
Observations (or Sum Wgts)	38

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	818429.8	116919	1.9829	0.0909
Error	30	1768919.9	58964		
C. Total	37	2587349.7			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2384.20	108.59	2162.4	2606.0
Chick Exc AME	5	2434.20	108.59	2212.4	2656.0
Chick Exc TME	5	2472.80	108.59	2251.0	2694.6
Rooster TME	4	1980.00	121.41	1732.0	2228.0
Turkey Dig AME	4	2456.75	121.41	2208.8	2704.7
Turkey Exc AME	5	2223.60	108.59	2001.8	2445.4
Turkey Exc TME	5	2244.20	108.59	2022.4	2466.0
Turkey TME	5	2347.80	108.59	2126.0	2569.6

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Turkey Dig AME	Chick Exc AME	Chick Dig AME	Turkey TME	Turkey Exc TME	Turkey Exc AME	Rooster TME
Chick Exc TME	0.00	16.05	38.60	88.60	125.00	228.60	249.20	492.80
Turkey Dig AME	-16.05	0.00	22.55	72.55	108.95	212.55	233.15	478.75
Chick Exc AME	-38.60	-22.55	0.00	50.00	86.40	190.00	210.60	454.20
Chick Dig AME	-88.60	-72.55	-50.00	0.00	36.40	140.00	160.60	404.20
Turkey TME	-125.00	-108.95	-86.40	-36.40	0.00	103.60	124.20	367.80
Turkey Exc TME	-228.60	-212.55	-190.00	-140.00	-103.60	0.00	20.60	264.20
Turkey Exc AME	-249.20	-233.15	-210.60	-160.60	-124.20	-20.60	0.00	243.60
Rooster TME	-492.80	-478.75	-454.20	-404.20	-367.80	-264.20	-243.60	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

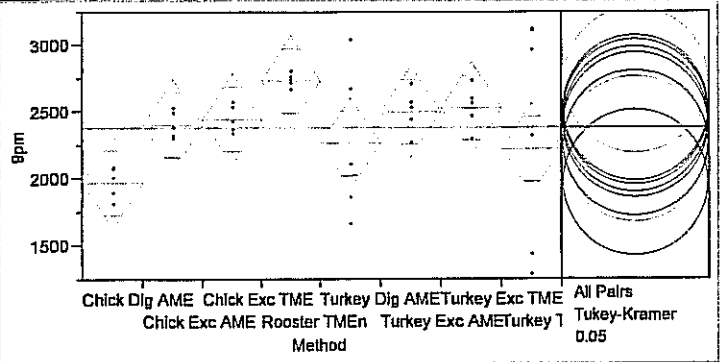
3.25370

Abs(Dif)-LSD

	Chick Exc TME	Turkey Dig AME	Chick Exc AME	Chick Dig AME	Turkey TME	Turkey Exc TME	Turkey Exc AME	Rooster TME
Chick Exc TME	-499.69	-513.95	-461.09	-411.09	-374.69	-271.09	-250.49	-37.20
Turkey Dig AME	-513.95	-558.67	-507.45	-457.45	-421.05	-317.45	-296.85	-81.92
Chick Exc AME	-461.09	-507.45	-499.69	-449.69	-413.29	-309.69	-289.09	-75.80
Chick Dig AME	-411.09	-457.45	-449.69	-499.69	-463.29	-359.69	-339.09	-125.80
Turkey TME	-374.69	-421.05	-413.29	-463.29	-499.69	-396.09	-375.49	-162.20
Turkey Exc TME	-271.09	-317.45	-309.69	-359.69	-396.09	-499.69	-479.09	-265.80
Turkey Exc AME	-250.49	-296.85	-289.09	-339.09	-375.49	-479.09	-499.69	-286.40
Rooster TME	-37.20	-81.92	-75.80	-125.80	-162.20	-265.80	-286.40	-558.67

Positive values show pairs of means that are significantly different.

Oneway Analysis of 9pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.291537
Adj Rsquare	0.136561
Root Mean Square Error	376.1301
Mean of Response	2382.7
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1862959.2	266137	1.8812	0.1057
Error	32	4527163.2	141474		
C. Total	39	6390122.4			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	1970.80	168.21	1628.2	2313.4
Chick Exc AME	5	2402.80	168.21	2050.2	2745.4
Chick Exc TME	5	2444.20	168.21	2101.6	2786.8
Rooster TME	5	2734.00	168.21	2391.4	3076.6
Turkey Dig AME	5	2264.00	168.21	1921.4	2606.6
Turkey Exc AME	5	2499.20	168.21	2156.6	2841.8
Turkey Exc TME	5	2527.40	168.21	2184.8	2870.0
Turkey TME	5	2219.20	168.21	1876.6	2561.8

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Turkey TME	Chick Dig AME
Rooster TME	0.00	208.60	234.80	289.80	331.20	470.00	514.80	763.20
Turkey Exc TME	-208.60	0.00	28.20	83.20	124.60	263.40	308.20	556.60
Turkey Exc AME	-234.80	-28.20	0.00	55.00	96.40	235.20	280.00	528.40
Chick Exc TME	-289.80	-83.20	-55.00	0.00	41.40	180.20	225.00	473.40
Chick Exc AME	-331.20	-124.60	-96.40	-41.40	0.00	138.80	183.60	432.00
Turkey Dig AME	-470.00	-263.40	-235.20	-180.20	-138.80	0.00	44.80	293.20
Turkey TME	-514.80	-308.20	-280.00	-225.00	-183.60	-44.80	0.00	248.40
Chick Dig AME	-763.20	-556.60	-528.40	-473.40	-432.00	-293.20	-248.40	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

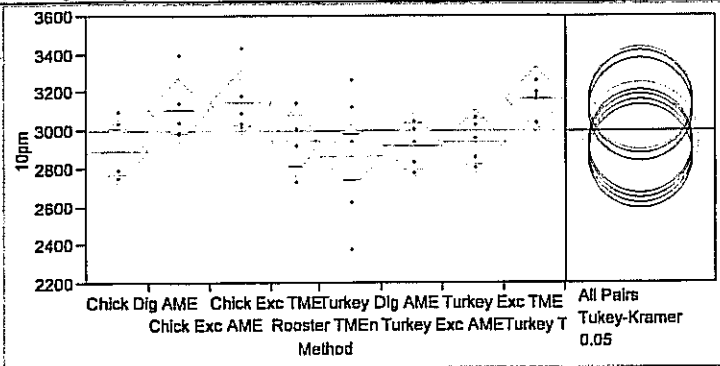
3.23930

Abs(Dif)-LSD

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Turkey TME	Chick Dig AME
Rooster TME	-770.58	-563.98	-535.78	-480.78	-439.38	-300.58	-255.78	-7.38
Turkey Exc TME	-563.98	-770.58	-742.38	-687.38	-645.98	-507.18	-462.38	-213.98
Turkey Exc AME	-535.78	-742.38	-770.58	-715.58	-674.18	-535.38	-490.58	-242.18
Chick Exc TME	-480.78	-687.38	-715.58	-770.58	-729.18	-590.38	-545.58	-297.18
Chick Exc AME	-439.38	-645.98	-674.18	-729.18	-770.58	-631.78	-586.98	-338.58
Turkey Dig AME	-300.58	-507.18	-535.38	-590.38	-631.78	-770.58	-725.78	-477.38
Turkey TME	-255.78	-462.38	-490.58	-545.58	-586.98	-725.78	-770.58	-522.18
Chick Dig AME	-7.38	-213.98	-242.18	-297.18	-338.58	-477.38	-522.18	-770.58

Positive values show pairs of means that are significantly different.

Oneway Analysis of 10pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.324463
Adj Rsquare	0.171923
Root Mean Square Error	186.9799
Mean of Response	2995.846
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	520557.1	74365.3	2.1271	0.0700
Error	31	1083805.9	34961.5		
C. Total	38	1604363.1			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2887.20	83.620	2716.7	3057.7
Chick Exc AME	5	3105.00	83.620	2934.5	3275.5
Chick Exc TME	5	3144.60	83.620	2974.1	3315.1
Rooster TME	4	2944.25	83.490	2753.6	3134.9
Turkey Dig AME	5	2860.20	83.620	2689.7	3030.7
Turkey Exc AME	5	2915.00	83.620	2744.5	3085.5
Turkey Exc TME	5	2937.60	83.620	2767.1	3108.1
Turkey TME	5	3162.60	83.620	2982.1	3333.1

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey TME	Chick Exc TME	Chick Exc AME	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME	Turkey Dig AME
Turkey TME	0.00	18.00	57.60	218.35	225.00	247.80	275.40	302.40
Chick Exc TME	-18.00	0.00	39.60	200.35	207.00	229.60	257.40	284.40
Chick Exc AME	-57.60	-39.60	0.00	160.75	167.40	190.00	217.80	244.80
Rooster TME	-218.35	-200.35	-160.75	0.00	6.65	29.25	57.05	84.05
Turkey Exc TME	-225.00	-207.00	-167.40	-6.65	0.00	22.60	50.40	77.40
Turkey Exc AME	-247.60	-229.60	-190.00	-29.25	-22.60	0.00	27.80	54.80
Chick Dig AME	-275.40	-257.40	-217.80	-57.05	-50.40	-27.80	0.00	27.00
Turkey Dig AME	-302.40	-284.40	-244.80	-84.05	-77.40	-54.80	-27.00	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

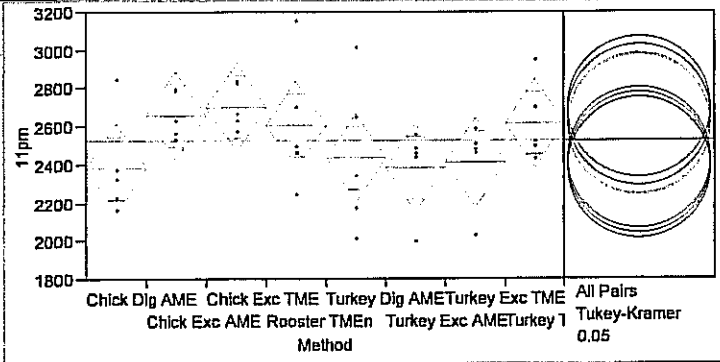
3.24626

Abs(Dif)-LSD

	Turkey TME	Chick Exc TME	Chick Exc AME	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME	Turkey Dig AME
Turkey TME	-383.89	-365.89	-326.29	-188.83	-158.89	-136.29	-108.49	-81.49
Chick Exc TME	-365.89	-383.89	-344.29	-206.83	-176.89	-154.29	-126.49	-99.49
Chick Exc AME	-326.29	-344.29	-383.89	-246.43	-216.49	-193.89	-166.09	-139.09
Rooster TME	-188.83	-206.83	-246.43	-429.20	-400.53	-377.93	-350.13	-323.13
Turkey Exc TME	-158.89	-176.89	-216.49	-400.53	-383.89	-361.29	-333.49	-306.49
Turkey Exc AME	-136.29	-154.29	-193.89	-377.93	-361.29	-383.89	-356.09	-329.09
Chick Dig AME	-108.49	-126.49	-166.09	-350.13	-333.49	-356.09	-383.89	-356.89
Turkey Dig AME	-81.49	-99.49	-139.09	-323.13	-306.49	-329.09	-356.89	-383.89

Positive values show pairs of means that are significantly different.

Oneway Analysis of 11pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.231417
Adj Rsquare	0.06329
Root Mean Square Error	255.098
Mean of Response	2522.7
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	627002.0	89571.7	1.3764	0.2490
Error	32	2082400.4	65075.0		
C. Total	39	2709402.4			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2381.40	114.08	2149.0	2613.8
Chick Exc AME	5	2657.60	114.08	2425.2	2890.0
Chick Exc TME	5	2699.60	114.08	2467.2	2932.0
Rooster TME	5	2605.40	114.08	2373.0	2837.8
Turkey Dig AME	5	2433.20	114.08	2200.8	2665.6
Turkey Exc AME	5	2382.40	114.08	2150.0	2614.8
Turkey Exc TME	5	2408.20	114.08	2175.8	2640.6
Turkey TME	5	2613.80	114.08	2381.4	2846.2

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Chick Exc AME	Turkey TME	Rooster TME	Turkey Dig AME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME
Chick Exc TME	0.00	42.00	85.80	94.20	266.40	291.40	317.20	318.20
Chick Exc AME	-42.00	0.00	43.80	52.20	224.40	249.40	275.20	276.20
Turkey TME	-85.80	-43.80	0.00	8.40	180.60	205.60	231.40	232.40
Rooster TME	-94.20	-52.20	-8.40	0.00	172.20	197.20	223.00	224.00
Turkey Dig AME	-266.40	-224.40	-180.60	-172.20	0.00	25.00	50.80	51.80
Turkey Exc TME	-291.40	-249.40	-205.60	-197.20	-25.00	0.00	25.80	26.80
Turkey Exc AME	-317.20	-275.20	-231.40	-223.00	-50.80	-25.80	0.00	1.00
Chick Dig AME	-318.20	-276.20	-232.40	-224.00	-51.80	-26.80	-1.00	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

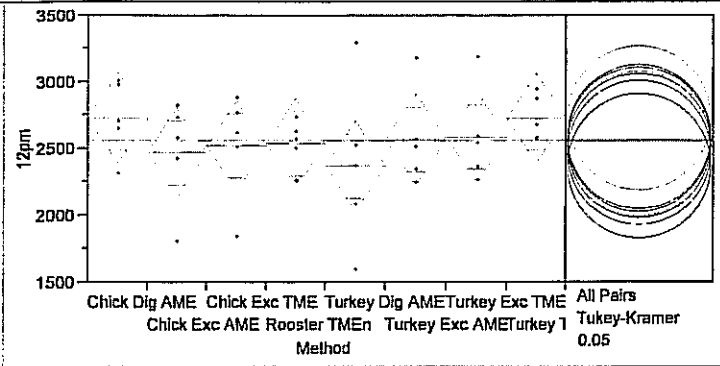
3.23930

Abs(Dif)-LSD

	Chick Exc TME	Chick Exc AME	Turkey TME	Rooster TME	Turkey Dig AME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME
Chick Exc TME	-522.62	-480.62	-436.82	-428.42	-256.22	-231.22	-205.42	-204.42
Chick Exc AME	-480.62	-522.62	-478.82	-470.42	-298.22	-273.22	-247.42	-246.42
Turkey TME	-436.82	-478.82	-522.62	-514.22	-342.02	-317.02	-291.22	-290.22
Rooster TME	-428.42	-470.42	-514.22	-522.62	-350.42	-325.42	-299.62	-298.62
Turkey Dig AME	-256.22	-298.22	-342.02	-350.42	-522.62	-497.62	-471.82	-470.82
Turkey Exc TME	-231.22	-273.22	-317.02	-325.42	-497.62	-522.62	-496.82	-495.82
Turkey Exc AME	-205.42	-247.42	-291.22	-299.62	-471.82	-496.82	-522.62	-521.62
Chick Dig AME	-204.42	-246.42	-290.22	-298.62	-470.82	-495.82	-521.62	-522.62

Positive values show pairs of means that are significantly different.

Oneway Analysis of 12pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.103368
Adj Rsquare	-0.09277
Root Mean Square Error	373.971
Mean of Response	2562.225
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	515938.6	73706	0.5270	0.8074
Error	32	4475338.4	139854		
C. Total	39	4991277.0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2727.20	167.24	2386.5	3067.9
Chick Exc AME	5	2468.60	167.24	2127.9	2809.3
Chick Exc TME	5	2519.60	167.24	2178.9	2860.3
Rooster TME	5	2535.60	167.24	2194.9	2876.3
Turkey Dig AME	5	2368.80	167.24	2028.1	2709.5
Turkey Exc AME	5	2566.60	167.24	2225.9	2907.3
Turkey Exc TME	5	2585.80	167.24	2245.1	2926.5
Turkey TME	5	2725.60	167.24	2384.9	3066.3

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Dig AME	Turkey TME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME
Chick Dig AME	0.00	1.80	141.40	160.80	191.60	207.60	258.80	358.40
Turkey TME	-1.80	0.00	139.80	159.00	190.00	206.00	257.00	356.80
Turkey Exc TME	-141.40	-139.80	0.00	19.20	50.20	66.20	117.20	217.00
Turkey Exc AME	-160.80	-159.00	-19.20	0.00	31.00	47.00	98.00	197.80
Rooster TME	-191.60	-190.00	-50.20	-31.00	0.00	16.00	67.00	166.80
Chick Exc TME	-207.60	-206.00	-66.20	-47.00	-16.00	0.00	51.00	150.80
Chick Exc AME	-258.80	-257.00	-117.20	-98.00	-67.00	-51.00	0.00	99.80
Turkey Dig AME	-358.40	-356.80	-217.00	-197.80	-166.80	-150.80	-99.80	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

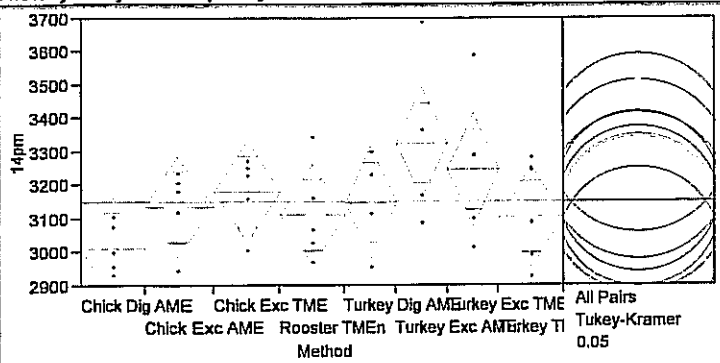
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3.23930

Abs(Dif)-LSD

	Chick Dig AME	Turkey TME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME
Chick Dig AME	-766.16	-764.56	-624.76	-605.56	-574.56	-558.56	-507.56	-407.76
Turkey TME	-764.56	-766.16	-626.36	-607.16	-576.16	-560.16	-509.16	-409.36
Turkey Exc TME	-624.76	-626.36	-766.16	-746.96	-715.96	-699.96	-648.96	-549.16
Turkey Exc AME	-605.56	-607.16	-746.96	-766.16	-735.16	-719.16	-668.16	-568.36
Rooster TME	-574.56	-576.16	-715.96	-735.16	-766.16	-750.16	-699.16	-599.36
Chick Exc TME	-558.56	-560.16	-699.96	-719.16	-750.16	-766.16	-715.16	-615.36
Chick Exc AME	-507.56	-509.16	-648.96	-668.16	-699.16	-715.16	-766.16	-666.36
Turkey Dig AME	-407.76	-409.36	-549.16	-568.36	-599.36	-615.36	-666.36	-766.16

Positive values show pairs of means that are significantly different.

Oneway Analysis of 14pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.262641
Adj Rsquare	0.084658
Root Mean Square Error	164.0471
Mean of Response	3150.541
Observations (or Sum Wgts)	37

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	277983.4	39711.9	1.4757	0.2149
Error	29	780431.8	26911.4		
C. Total	36	1058415.2			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	3011.40	73.364	2861.4	3161.4
Chick Exc AME	5	3135.00	73.364	2985.0	3285.0
Chick Exc TME	5	3179.80	73.364	3029.8	3329.8
Rooster TME	5	3110.80	73.364	2960.8	3260.8
Turkey Dig AME	4	3147.25	82.024	2979.5	3315.0
Turkey Exc AME	4	3324.50	82.024	3156.7	3492.3
Turkey Exc TME	4	3245.00	82.024	3077.2	3412.8
Turkey TME	5	3103.60	73.364	2953.6	3253.6

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey Exc AME	Turkey Exc TME	Chick Exc TME	Turkey Dig AME	Chick Exc AME	Rooster TME	Turkey TME	Chick Dig AME
Turkey Exc AME	0.00	79.50	144.70	177.25	189.50	213.70	220.90	313.10
Turkey Exc TME	-79.50	0.00	65.20	97.75	110.00	134.20	141.40	233.60
Chick Exc TME	-144.70	-65.20	0.00	32.55	44.80	69.00	76.20	168.40
Turkey Dig AME	-177.25	-97.75	-32.55	0.00	12.25	36.45	43.65	135.85
Chick Exc AME	-189.50	-110.00	-44.80	-12.25	0.00	24.20	31.40	123.60
Rooster TME	-213.70	-134.20	-69.00	-36.45	-24.20	0.00	7.20	99.40
Turkey TME	-220.90	-141.40	-76.20	-43.65	-31.40	-7.20	0.00	92.20
Chick Dig AME	-313.10	-233.60	-168.40	-135.85	-123.60	-99.40	-92.20	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

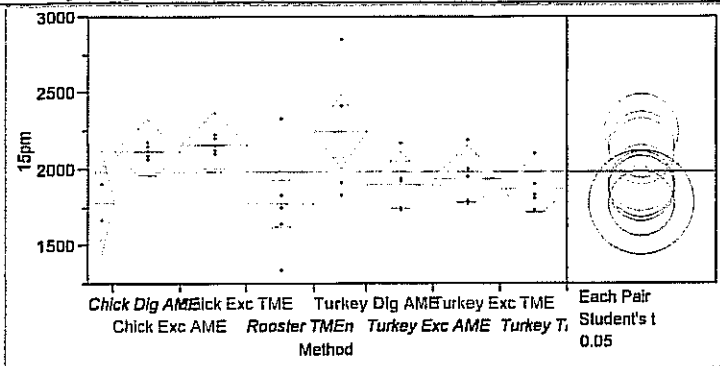
3.26166

Abs(Dif)-LSD

	Turkey Exc AME	Turkey Exc TME	Chick Exc TME	Turkey Dig AME	Chick Exc AME	Rooster TME	Turkey TME	Chick Dig AME
Turkey Exc AME		-378.35	-298.85	-214.23	-201.10	-169.43	-145.23	-138.03
Turkey Exc TME			-378.35	-293.73	-280.60	-248.93	-224.73	-217.53
Chick Exc TME				-338.41	-326.38	-293.61	-269.41	-262.21
Turkey Dig AME					-378.35	-346.68	-322.48	-315.28
Chick Exc AME						-314.21	-307.01	-307.01
Rooster TME							-338.41	-331.21
Turkey TME								-338.41
Chick Dig AME								

Positive values show pairs of means that are significantly different.

Oneway Analysis of 15pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.37207
Adj Rsquare	0.215087
Root Mean Square Error	237.0147
Mean of Response	1978.889
Observations (or Sum Wgts)	36

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	932012.4	133145	2.3701	0.0491
Error	28	1572927.1	56178		
C. Total	35	2504939.6			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	2	1778.00	167.59	1434.7	2121.3
Chick Exc AME	5	2112.80	106.00	1895.7	2329.9
Chick Exc TME	5	2156.20	106.00	1939.1	2373.3
Rooster TME	5	1771.80	106.00	1554.7	1988.9
Turkey Dig AME	4	2245.75	118.51	2003.0	2488.5
Turkey Exc AME	5	1895.00	106.00	1677.9	2112.1
Turkey Exc TME	5	1835.60	106.00	1718.5	2152.7
Turkey TME	5	1868.80	106.00	1651.7	2085.9

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Turkey Dig AME	0.00	89.55	132.95	310.15	350.75	376.95	467.75	473.95
Chick Exc TME	-89.55	0.00	43.40	220.60	281.20	287.40	378.20	384.40
Chick Exc AME	-132.95	-43.40	0.00	177.20	217.80	244.00	334.80	341.00
Turkey Exc TME	-310.15	-220.60	-177.20	0.00	40.60	66.80	157.60	163.80
Turkey Exc AME	-350.75	-281.20	-217.80	-40.60	0.00	26.20	117.00	123.20
Turkey TME	-376.95	-287.40	-244.00	-66.80	-26.20	0.00	90.80	97.00
Chick Dig AME	-467.75	-378.20	-334.80	-157.60	-117.00	-90.80	0.00	6.20
Rooster TME	-473.95	-384.40	-341.00	-163.80	-123.20	-97.00	-6.20	0.00

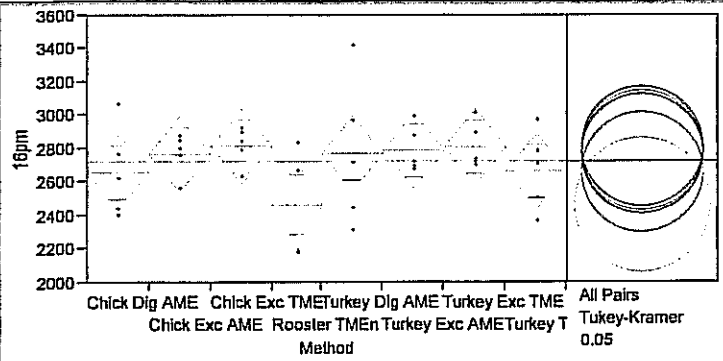
Alpha= 0.05

Comparisons for each pair using Student's t

	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Turkey Dig AME	-343.30	-236.14	-192.74	-15.54	25.06	51.26	47.29	148.26
Chick Exc TME	-236.14	-307.06	-263.66	-86.46	-45.86	-19.66	-28.00	77.34
Chick Exc AME	-192.74	-263.66	-307.06	-129.86	-89.26	-63.06	-71.40	33.94
Turkey Exc TME	-15.54	-86.46	-129.86	-307.06	-266.46	-240.26	-248.60	-143.26
Turkey Exc AME	25.06	-45.86	-89.26	-266.46	-307.06	-280.86	-289.20	-183.86
Turkey TME	51.26	-19.66	-63.06	-240.26	-280.86	-307.06	-315.40	-210.06
Chick Dig AME	47.29	-28.00	-71.40	-248.60	-289.20	-315.40	-465.50	-400.00
Rooster TME	148.26	77.34	33.94	-143.26	-183.86	-210.06	-400.00	-307.06

Positive values show pairs of means that are significantly different.

Oneway Analysis of 16pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.18368
Adj Rsquare	-0.00065
Root Mean Square Error	247.0808
Mean of Response	2720.974
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	425764.6	60823.5	0.9965	0.4523
Error	31	1892210.3	61039.0		
C. Total	38	2317975.0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2655.40	110.49	2430.1	2880.7
Chick Exc AME	5	2764.40	110.49	2539.1	2989.7
Chick Exc TME	5	2811.40	110.49	2586.1	3036.7
Rooster TME	4	2482.25	123.53	2210.3	2714.2
Turkey Dig AME	5	2767.60	110.49	2542.3	2992.9
Turkey Exc AME	5	2785.60	110.49	2560.3	3010.9
Turkey Exc TME	5	2807.20	110.49	2581.9	3032.5
Turkey TME	5	2662.20	110.49	2436.9	2887.5

Std Error uses a pooled estimate of error variance

Means Comparisons

DIF=Mean[i]-Mean[j]

	Chick Exc TME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Chick Exc TME	0.00	4.20	25.80	43.80	47.00	149.20	156.00	349.15
Turkey Exc TME	-4.20	0.00	21.60	39.60	42.80	145.00	151.80	344.95
Turkey Exc AME	-25.80	-21.60	0.00	18.00	21.20	123.40	130.20	323.35
Turkey Dig AME	-43.80	-39.60	-18.00	0.00	3.20	105.40	112.20	305.35
Chick Exc AME	-47.00	-42.80	-21.20	-3.20	0.00	102.20	109.00	302.15
Turkey TME	-149.20	-145.00	-123.40	-105.40	-102.20	0.00	6.80	199.95
Chick Dig AME	-156.00	-151.80	-130.20	-112.20	-109.00	-6.80	0.00	193.15
Rooster TME	-349.15	-344.95	-323.35	-305.35	-302.15	-199.95	-193.15	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

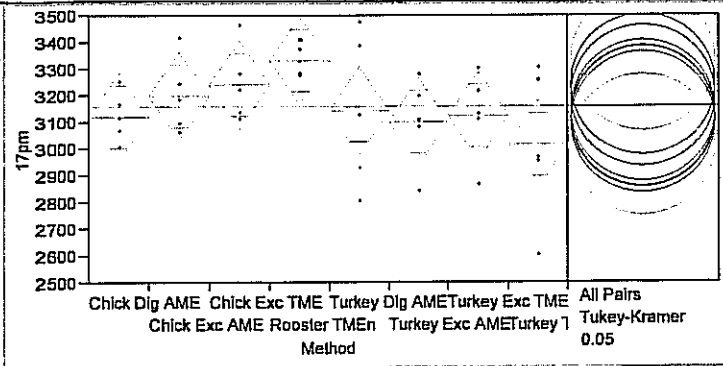
3.24626

Abs(DIF)-LSD

	Chick Exc TME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Chick Exc TME	-507.24	-503.04	-481.44	-463.44	-460.24	-358.04	-351.24	-188.86
Turkey Exc TME	-503.04	-507.24	-485.64	-467.64	-464.44	-362.24	-355.44	-193.06
Turkey Exc AME	-481.44	-485.64	-507.24	-489.24	-486.04	-383.84	-377.04	-214.86
Turkey Dig AME	-463.44	-467.64	-489.24	-507.24	-504.04	-401.84	-395.04	-232.66
Chick Exc AME	-460.24	-464.44	-486.04	-504.04	-507.24	-405.04	-398.24	-235.86
Turkey TME	-358.04	-362.24	-383.84	-401.84	-405.04	-507.24	-500.44	-338.06
Chick Dig AME	-351.24	-355.44	-377.04	-395.04	-398.24	-500.44	-507.24	-344.86
Rooster TME	-188.86	-193.06	-214.86	-232.66	-235.86	-338.06	-344.86	-567.12

Positive values show pairs of means that are significantly different.

Oneway Analysis of 17pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.234181
Adj Rsquare	0.08667
Root Mean Square Error	182.6728
Mean of Response	3157.85
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	326547.9	46649.7	1.3980	0.2403
Error	32	1067819.2	33369.3		
C. Total	39	1394367.1			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	3119.00	81.694	2952.6	3285.4
Chick Exc AME	5	3197.00	81.694	3030.8	3363.4
Chick Exc TME	5	3239.40	81.694	3073.0	3405.8
Rooster TME	5	3330.80	81.694	3164.4	3497.2
Turkey Dig AME	5	3141.60	81.694	2975.2	3308.0
Turkey Exc AME	5	3099.00	81.694	2932.6	3265.4
Turkey Exc TME	5	3122.00	81.694	2955.6	3288.4
Turkey TME	5	3014.00	81.694	2847.6	3180.4

Std Error uses a pooled estimate of error variance

Means Comparisons

DIF=Mean[i]-Mean[j]

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Turkey Exc TME	Chick Dig AME	Turkey Exc AME	Turkey TME
Rooster TME	0.00	91.40	133.80	189.20	208.80	211.80	231.80	316.80
Chick Exc TME	-91.40	0.00	42.40	97.80	117.40	120.40	140.40	225.40
Chick Exc AME	-133.80	-42.40	0.00	55.40	75.00	78.00	98.00	183.00
Turkey Dig AME	-189.20	-97.80	-55.40	0.00	19.60	22.60	42.60	127.60
Turkey Exc TME	-208.80	-117.40	-75.00	-19.60	0.00	3.00	23.00	108.00
Chick Dig AME	-211.80	-120.40	-78.00	-22.60	-3.00	0.00	20.00	105.00
Turkey Exc AME	-231.80	-140.40	-98.00	-42.60	-23.00	-20.00	0.00	85.00
Turkey TME	-316.80	-225.40	-183.00	-127.60	-108.00	-105.00	-85.00	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

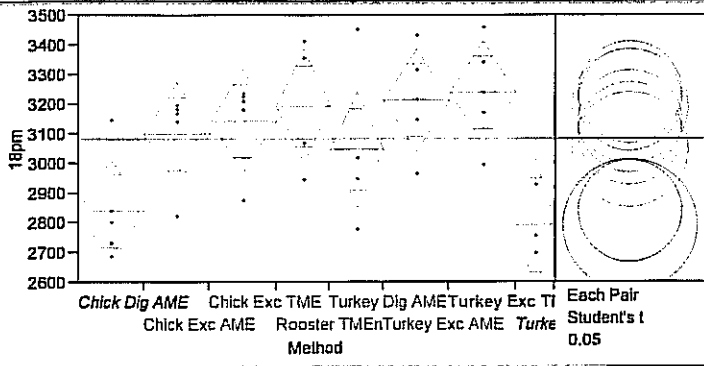
3.23930

Abs(DIF)-LSD

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Turkey Exc TME	Chick Dig AME	Turkey Exc AME	Turkey TME
Rooster TME	-374.24	-282.84	-240.44	-185.04	-165.44	-162.44	-142.44	-57.44
Chick Exc TME	-282.84	-374.24	-331.84	-276.44	-256.84	-253.84	-233.84	-148.84
Chick Exc AME	-240.44	-331.84	-374.24	-318.84	-299.24	-296.24	-276.24	-181.24
Turkey Dig AME	-185.04	-276.44	-318.84	-374.24	-354.64	-351.64	-331.64	-246.64
Turkey Exc TME	-165.44	-256.84	-299.24	-354.64	-374.24	-371.24	-351.24	-266.24
Chick Dig AME	-162.44	-253.84	-296.24	-351.64	-371.24	-374.24	-354.24	-269.24
Turkey Exc AME	-142.44	-233.84	-276.24	-331.64	-351.24	-354.24	-374.24	-289.24
Turkey TME	-57.44	-148.84	-181.24	-246.64	-266.24	-269.24	-289.24	-374.24

Positive values show pairs of means that are significantly different.

Oneway Analysis of 18pm By Method



Oneway Anova

Summary of Fit

Rsquare	0.454341
Adj Rsquare	0.317826
Root Mean Square Error	188.8136
Mean of Response	3082.139
Observations (or Sum Wgts)	36

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	831161.7	118737	3.3308	0.0104
Error	28	998216.6	35651		
C. Total	35	1829378.3			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2837.80	84.44	2664.8	3010.8
Chick Exc AME	5	3098.80	84.44	2925.8	3271.8
Chick Exc TME	5	3140.80	84.44	2967.8	3313.8
Rooster TME	4	3192.00	94.41	2998.6	3385.4
Turkey Dig AME	4	3045.25	94.41	2851.9	3238.6
Turkey Exc AME	5	3212.00	84.44	3039.0	3385.0
Turkey Exc TME	5	3237.80	84.44	3064.8	3410.8
Turkey TME	3	2790.67	109.01	2567.4	3014.0

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey Exc TME	Turkey Exc AME	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Chick Dig AME	Turkey TME
Turkey Exc TME	0.00	25.80	45.80	97.00	138.00	192.55	400.00	447.13
Turkey Exc AME	-25.80	0.00	20.00	71.20	113.20	166.75	374.20	421.33
Rooster TME	-45.80	-20.00	0.00	51.20	93.20	146.75	354.20	401.33
Chick Exc TME	-97.00	-71.20	-51.20	0.00	42.00	85.55	303.00	350.13
Chick Exc AME	-138.00	-113.20	-93.20	-42.00	0.00	53.55	261.00	308.13
Turkey Dig AME	-192.55	-166.75	-146.75	-95.55	-53.55	0.00	207.45	254.58
Chick Dig AME	-400.00	-374.20	-354.20	-303.00	-261.00	-207.45	0.00	47.13
Turkey TME	-447.13	-421.33	-401.33	-350.13	-308.13	-254.58	-47.13	0.00

Alpha= 0.05

Comparisons for each pair using Student's t

t

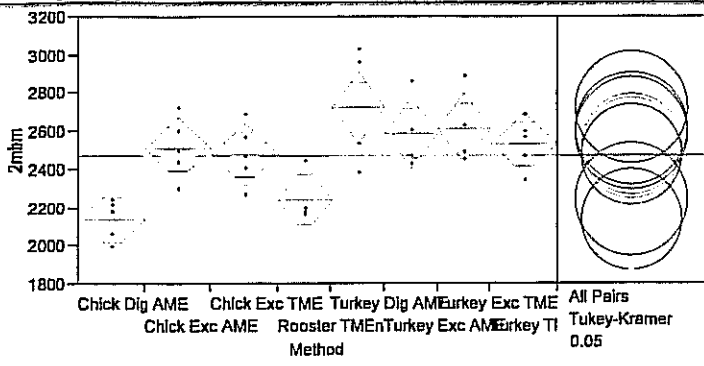
2.04841

Abs(Dif)-LSD

	Turkey Exc TME	Turkey Exc AME	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Chick Dig AME	Turkey TME
Turkey Exc TME	-244.61	-218.81	-213.65	-147.61	-105.61	-66.90	155.39	164.68
Turkey Exc AME	-218.81	-244.61	-239.45	-173.41	-131.41	-92.70	129.59	138.88
Rooster TME	-213.65	-239.45	-273.49	-208.25	-166.25	-126.74	94.75	105.93
Chick Exc TME	-147.61	-173.41	-208.25	-244.61	-202.61	-163.90	58.39	67.68
Chick Exc AME	-105.61	-131.41	-166.25	-202.61	-244.61	-205.90	16.39	25.68
Turkey Dig AME	-66.90	-92.70	-126.74	-163.90	-205.90	-273.49	-52.00	-40.82
Chick Dig AME	155.39	129.59	94.75	58.39	16.39	-52.00	-244.61	-235.32
Turkey TME	164.68	138.88	105.93	67.68	25.68	-40.82	-235.32	-315.79

Positive values show pairs of means that are significantly different.

Oneway Analysis of 2mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.565736
Adj Rsquare	0.45717
Root Mean Square Error	180.3128
Mean of Response	2468.556
Observations (or Sum Wgts)	36

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1185964.9	169424	5.2110	0.0007
Error	28	910355.9	32513		
C. Total	35	2096320.9			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2134.60	80.638	1969.4	2299.8
Chick Exc AME	5	2508.40	80.638	2343.2	2673.6
Chick Exc TME	5	2475.20	80.638	2310.0	2640.4
Rooster TME	4	2240.00	90.156	2055.3	2424.7
Turkey Dig AME	4	2722.00	90.156	2537.3	2906.7
Turkey Exc AME	4	2586.00	90.156	2401.3	2770.7
Turkey Exc TME	4	2611.25	90.156	2426.6	2795.9
Turkey TME	5	2528.00	80.638	2362.8	2693.2

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Exc AME	Chick Exc TME	Rooster TME	Chick Dig AME
Turkey Dig AME	0.00	110.75	136.00	194.00	213.60	246.80	482.00	587.40
Turkey Exc TME	-110.75	0.00	25.25	83.25	102.85	136.05	371.25	476.85
Turkey Exc AME	-136.00	-25.25	0.00	58.00	77.60	110.80	346.00	451.40
Turkey TME	-194.00	-83.25	-58.00	0.00	18.60	52.80	288.00	393.40
Chick Exc AME	-213.60	-102.85	-77.60	-18.60	0.00	33.20	268.40	373.80
Chick Exc TME	-246.80	-136.05	-110.80	-52.80	-33.20	0.00	235.20	340.60
Rooster TME	-482.00	-371.25	-346.00	-288.00	-268.40	-235.20	0.00	105.40
Chick Dig AME	-587.40	-476.85	-451.40	-393.40	-373.80	-340.60	-105.40	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

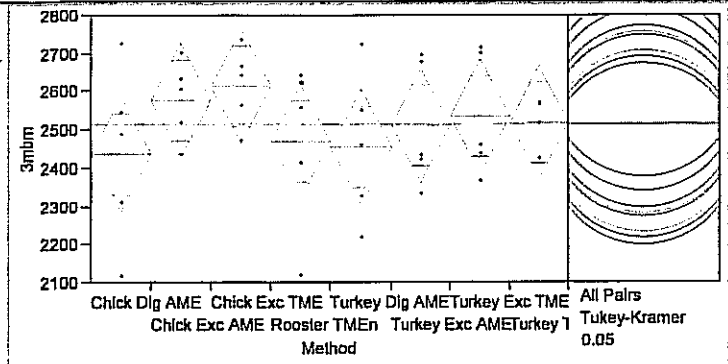
3.27022

Abs(Dif)-LSD

	Turkey Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Exc AME	Chick Exc TME	Rooster TME	Chick Dig AME
Turkey Dig AME	-416.95	-306.20	-280.95	-201.56	-181.96	-148.76	65.05	191.84
Turkey Exc TME	-306.20	-416.95	-391.70	-312.31	-292.71	-259.51	-45.70	81.09
Turkey Exc AME	-280.95	-391.70	-416.95	-337.56	-317.96	-284.76	-70.95	55.84
Turkey TME	-201.56	-312.31	-337.56	-372.94	-353.34	-320.14	-107.56	20.46
Chick Exc AME	-181.96	-292.71	-317.96	-353.34	-372.94	-339.74	-127.16	0.86
Chick Exc TME	-148.76	-259.51	-284.76	-320.14	-338.74	-372.94	-180.36	-32.34
Rooster TME	65.05	-45.70	-70.95	-107.56	-127.16	-160.36	-416.95	-290.16
Chick Dig AME	191.84	81.09	55.84	20.46	0.86	-32.34	-290.16	-372.84

Positive values show pairs of means that are significantly different.

Oneway Analysis of 3mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.130979
Adj Rsquare	-0.05912
Root Mean Square Error	164.4809
Mean of Response	2513.95
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	130482.70	18640.4	0.6890	0.6805
Error	32	865727.20	27054.0		
C. Total	39	996209.90			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2435.80	73.558	2286.0	2585.6
Chick Exc AME	5	2577.20	73.558	2427.4	2727.0
Chick Exc TME	5	2813.80	73.558	2664.0	2763.6
Rooster TME	5	2469.00	73.558	2319.2	2618.8
Turkey Dig AME	5	2454.20	73.558	2304.4	2604.0
Turkey Exc AME	5	2510.20	73.558	2360.4	2660.0
Turkey Exc TME	5	2534.00	73.558	2384.2	2683.8
Turkey TME	5	2517.40	73.558	2367.6	2667.2

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Chick Dig AME
Chick Exc TME	0.00	36.60	79.80	96.40	103.60	144.80	159.60	178.00
Chick Exc AME	-36.60	0.00	43.20	59.80	67.00	108.20	123.00	141.40
Turkey Exc TME	-79.80	-43.20	0.00	16.60	23.80	65.00	79.80	98.20
Turkey TME	-96.40	-59.80	-16.60	0.00	7.20	48.40	63.20	81.60
Turkey Exc AME	-103.60	-67.00	-23.80	-7.20	0.00	41.20	56.00	74.40
Rooster TME	-144.80	-108.20	-65.00	-48.40	-41.20	0.00	14.80	33.20
Turkey Dig AME	-159.60	-123.00	-79.80	-63.20	-56.00	-14.80	0.00	18.40
Chick Dig AME	-178.00	-141.40	-98.20	-81.60	-74.40	-33.20	-18.40	0.00

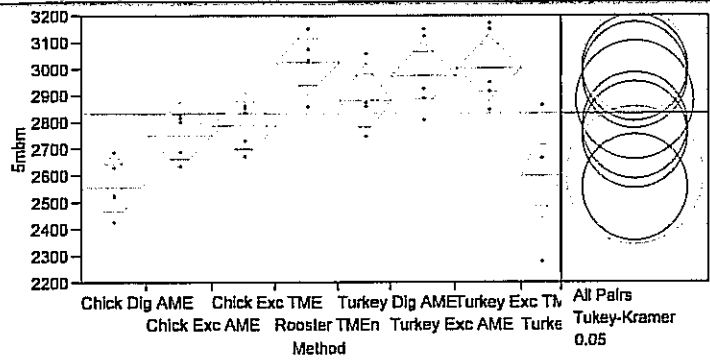
Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*									
Abs(Dif)-LSD	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Chick Dig AME	
Chick Exc TME	-336.97	-300.37	-257.17	-240.57	-233.37	-192.17	-177.37	-158.97	
Chick Exc AME	-300.37	-336.97	-293.77	-277.17	-269.97	-228.77	-213.97	-195.57	
Turkey Exc TME	-257.17	-293.77	-336.97	-320.37	-313.17	-271.97	-257.17	-238.77	
Turkey TME	-240.57	-277.17	-320.37	-336.97	-329.77	-288.57	-273.77	-255.37	
Turkey Exc AME	-233.37	-269.97	-313.17	-329.77	-336.97	-295.77	-280.97	-262.57	
Rooster TME	-192.17	-228.77	-271.97	-288.57	-295.77	-336.97	-322.17	-303.77	
Turkey Dig AME	-177.37	-213.97	-257.17	-273.77	-280.97	-322.17	-336.97	-318.57	
Chick Dig AME	-158.97	-195.57	-238.77	-255.37	-262.57	-303.77	-318.57	-336.97	

Positive values show pairs of means that are significantly different.

Oneway Analysis of 5mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.655404
Adj Rsquare	0.572226
Root Mean Square Error	137.1824
Mean of Response	2832.784
Observations (or Sum Wgts)	37

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1037992.9	148285	7.8795	<.0001
Error	29	545751.4	18819		
C. Total	36	1583744.3			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2555.00	61.350	2429.5	2680.5
Chick Exc AME	5	2750.60	61.350	2625.1	2876.1
Chick Exc TME	5	2786.40	61.350	2660.9	2911.9
Rooster TME	5	3026.40	61.350	2900.9	3151.9
Turkey Dig AME	4	2881.75	68.591	2741.5	3022.0
Turkey Exc AME	5	2975.40	61.350	2849.9	3100.9
Turkey Exc TME	5	3003.80	61.350	2878.1	3129.1
Turkey TME	3	2599.67	79.202	2437.7	2761.7

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME
Rooster TME	0.00	22.80	51.00	144.65	240.00	275.80	426.73	471.40
Turkey Exc TME	-22.80	0.00	28.20	121.85	217.20	253.00	403.93	448.60
Turkey Exc AME	-51.00	-28.20	0.00	93.65	189.00	224.80	375.73	420.40
Turkey Dig AME	-144.65	-121.85	-93.65	0.00	95.35	131.15	282.08	326.75
Chick Exc TME	-240.00	-217.20	-189.00	-95.35	0.00	35.80	186.73	231.40
Chick Exc AME	-275.80	-253.00	-224.80	-131.15	-35.80	0.00	150.93	195.60
Turkey TME	-426.73	-403.93	-375.73	-282.08	-186.73	-150.93	0.00	44.67
Chick Dig AME	-471.40	-448.60	-420.40	-326.75	-231.40	-195.60	-44.67	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

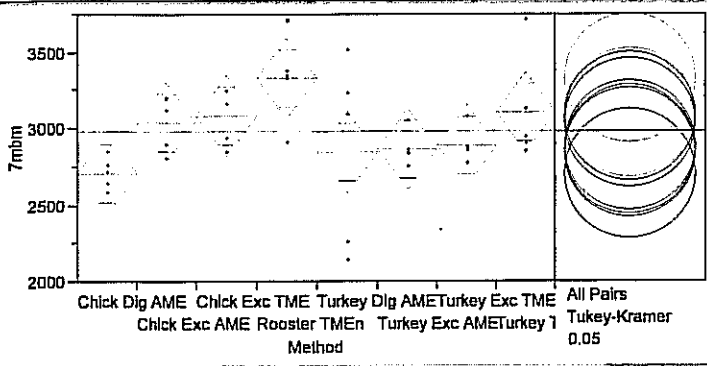
3.26166

Abs(Dif)-LSD

	Rooster TME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey TME	Chick Dig AME
Rooster TME	-282.99	-260.19	-231.99	-155.50	-42.99	-7.19	99.97	188.41
Turkey Exc TME	-260.19	-282.99	-254.79	-178.30	-65.79	-29.99	77.17	165.61
Turkey Exc AME	-231.99	-254.79	-282.99	-208.50	-93.99	-58.19	48.97	137.41
Turkey Dig AME	-155.50	-178.30	-208.50	-316.39	-204.80	-169.00	-59.66	26.60
Chick Exc TME	-42.99	-65.79	-93.99	-204.80	-282.99	-247.19	-140.03	-51.59
Chick Exc AME	-7.19	-29.99	-58.19	-169.00	-247.19	-282.99	-175.83	-87.39
Turkey TME	99.97	77.17	48.97	-59.66	-140.03	-175.83	-365.34	-282.10
Chick Dig AME	188.41	165.61	137.41	26.60	-51.59	-87.39	-282.10	-282.99

Positive values show pairs of means that are significantly different.

Oneway Analysis of 7mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.327673
Adj Rsquare	0.180601
Root Mean Square Error	292.2472
Mean of Response	2981.325
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1332020.4	190289	2.2280	0.0579
Error	32	2733070.4	85408		
C. Total	39	4065090.8			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2705.20	130.70	2439.0	2971.4
Chick Exc AME	5	3038.40	130.70	2772.2	3304.6
Chick Exc TME	5	3080.60	130.70	2814.4	3346.8
Rooster TME	5	3328.60	130.70	3062.4	3594.8
Turkey Dig AME	5	2843.60	130.70	2577.4	3109.8
Turkey Exc AME	5	2883.00	130.70	2598.8	3129.2
Turkey Exc TME	5	2888.20	130.70	2622.0	3154.4
Turkey TME	5	3103.00	130.70	2836.8	3369.2

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Turkey TME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Dig AME
Rooster TME	0.00	225.80	248.00	290.20	440.40	465.60	485.00	623.40
Turkey TME	-225.60	0.00	22.40	64.80	214.80	240.00	259.40	397.80
Chick Exc TME	-248.00	-22.40	0.00	42.20	192.40	217.60	237.00	375.40
Chick Exc AME	-290.20	-84.60	-42.20	0.00	150.20	175.40	194.80	333.20
Turkey Exc TME	-440.40	-214.80	-192.40	-150.20	0.00	25.20	44.60	183.00
Turkey Exc AME	-465.60	-240.00	-217.60	-175.40	-25.20	0.00	19.40	157.80
Turkey Dig AME	-485.00	-259.40	-237.00	-194.80	-44.60	-19.40	0.00	138.40
Chick Dig AME	-623.40	-397.80	-375.40	-333.20	-183.00	-157.80	-138.40	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

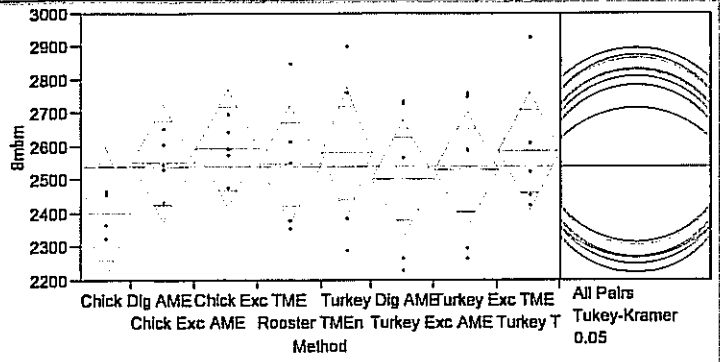
3.23930

Abs(Dif)-LSD

	Rooster TME	Turkey TME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Dig AME
Rooster TME	-598.73	-373.13	-350.73	-308.53	-158.33	-133.13	-113.73	24.67
Turkey TME	-373.13	-598.73	-576.33	-534.13	-383.93	-358.73	-338.33	-200.93
Chick Exc TME	-350.73	-576.33	-598.73	-556.53	-406.33	-381.13	-361.73	-223.33
Chick Exc AME	-308.53	-534.13	-556.53	-598.73	-448.53	-423.33	-403.93	-265.53
Turkey Exc TME	-158.33	-383.93	-406.33	-448.53	-598.73	-573.53	-554.13	-415.73
Turkey Exc AME	-133.13	-358.73	-381.13	-423.33	-573.53	-598.73	-578.33	-440.93
Turkey Dig AME	-113.73	-338.33	-361.73	-403.93	-554.13	-579.33	-598.73	-460.33
Chick Dig AME	24.67	-200.93	-223.33	-265.53	-415.73	-440.93	-460.33	-598.73

Positive values show pairs of means that are significantly different.

Oneway Analysis of 8mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.094678
Adj Rsquare	-0.11656
Root Mean Square Error	193.2674
Mean of Response	2538.921
Observations (or Sum Wgts)	38

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	117188.0	16741.1	0.4482	0.8635
Error	30	1120568.8	37352.3		
C. Total	37	1237756.8			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	4	2401.00	96.634	2203.6	2598.4
Chick Exc AME	5	2551.60	86.432	2375.1	2728.1
Chick Exc TME	5	2593.80	86.432	2417.3	2770.3
Rooster TME	5	2546.80	86.432	2370.3	2723.3
Turkey Dig AME	4	2581.25	96.634	2383.9	2778.6
Turkey Exc AME	5	2502.80	86.432	2328.3	2679.3
Turkey Exc TME	5	2528.00	86.432	2353.1	2708.1
Turkey TME	5	2585.40	86.432	2408.9	2781.9

Std Error uses a pooled estimate of error variance

Means Comparisons

DI=Mean[i]-Mean[j]

	Chick Exc TME	Turkey TME	Turkey Dig AME	Chick Exc AME	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME
Chick Exc TME	0.00	8.40	12.55	42.20	47.00	64.20	91.00	192.80
Turkey TME	-8.40	0.00	4.15	33.80	38.60	55.80	82.60	184.40
Turkey Dig AME	-12.55	-4.15	0.00	29.65	34.45	51.65	78.45	180.25
Chick Exc AME	-42.20	-33.80	-29.65	0.00	4.80	22.00	48.80	150.60
Rooster TME	-47.00	-38.60	-34.45	-4.80	0.00	17.20	44.00	145.80
Turkey Exc TME	-64.20	-55.80	-51.65	-22.00	-17.20	0.00	26.80	128.60
Turkey Exc AME	-91.00	-82.60	-78.45	-48.80	-44.00	-26.80	0.00	101.80
Chick Dig AME	-192.80	-184.40	-180.25	-150.60	-145.80	-128.60	-101.80	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

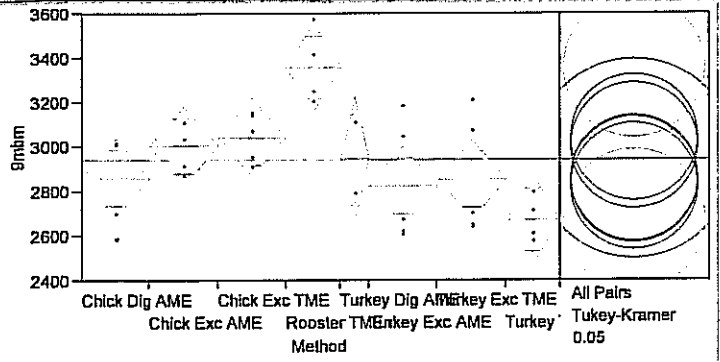
3.25370

Abs(DI)-LSD

	Chick Exc TME	Turkey TME	Turkey Dig AME	Chick Exc AME	Rooster TME	Turkey Exc TME	Turkey Exc AME	Chick Dig AME
Chick Exc TME	-397.71	-389.31	-409.28	-355.51	-350.71	-333.51	-306.71	-229.03
Turkey TME	-389.31	-397.71	-417.68	-363.91	-359.11	-341.91	-315.11	-237.43
Turkey Dig AME	-409.28	-417.68	-444.65	-392.18	-387.38	-370.18	-343.38	-264.40
Chick Exc AME	-355.51	-363.91	-392.18	-397.71	-392.91	-375.71	-348.91	-271.23
Rooster TME	-350.71	-359.11	-387.38	-392.91	-397.71	-380.51	-353.71	-276.03
Turkey Exc TME	-333.51	-341.91	-370.18	-375.71	-380.51	-397.71	-370.91	-293.23
Turkey Exc AME	-306.71	-315.11	-343.38	-348.91	-353.71	-370.91	-397.71	-320.03
Chick Dig AME	-229.03	-237.43	-264.40	-271.23	-276.03	-293.23	-320.03	-444.65

Positive values show pairs of means that are significantly different.

Oneway Analysis of 9mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.54376
Adj Rsquare	0.425475
Root Mean Square Error	193.143
Mean of Response	2938.8
Observations (or Sum Wgts)	35

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1200426.0	171489	4.5971	0.0017
Error	27	1007213.6	37304		
C. Total	34	2207639.6			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2858.00	86.38	2680.8	3035.2
Chick Exc AME	5	3002.60	86.38	2825.4	3179.8
Chick Exc TME	5	3040.20	86.38	2863.0	3217.4
Rooster TME	4	3356.25	96.57	3158.1	3554.4
Turkey Dig AME	2	2845.50	136.57	2665.3	3225.7
Turkey Exc AME	5	2821.80	86.38	2644.6	2999.0
Turkey Exc TME	5	2850.80	86.38	2673.6	3028.0
Turkey TME	4	2668.75	96.57	2470.6	2866.9

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Chick Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey TME
Rooster TME	0.00	318.05	353.65	410.75	498.25	505.45	534.45	687.50
Chick Exc TME	-318.05	0.00	37.60	94.70	182.20	189.40	218.40	371.45
Chick Exc AME	-353.65	-37.60	0.00	57.10	144.80	151.80	180.80	333.85
Turkey Dig AME	-410.75	-94.70	-57.10	0.00	87.50	94.70	123.70	276.75
Chick Dig AME	-498.25	-182.20	-144.60	-87.50	0.00	7.20	38.20	189.25
Turkey Exc TME	-505.45	-189.40	-151.80	-94.70	-7.20	0.00	29.00	182.05
Turkey Exc AME	-534.45	-218.40	-180.80	-123.70	-36.20	-29.00	0.00	153.05
Turkey TME	-687.50	-371.45	-333.85	-276.75	-189.25	-182.05	-153.05	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

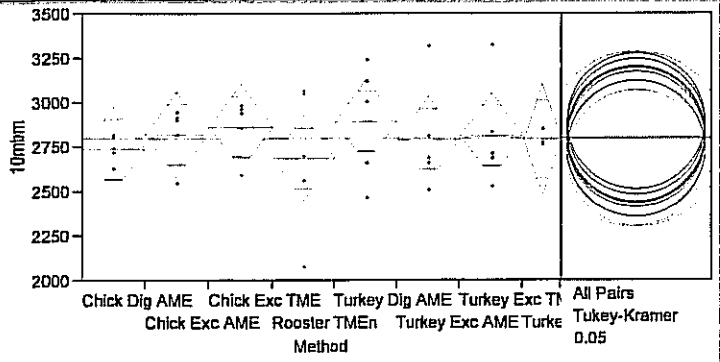
3.27944

Abs(Dif)-LSD

	Rooster TME	Chick Exc TME	Chick Exc AME	Turkey Dig AME	Chick Dig AME	Turkey Exc TME	Turkey Exc AME	Turkey TME
Rooster TME	-447.88	-108.85	-71.25	-137.79	73.35	80.55	109.55	239.62
Chick Exc TME	-108.85	-400.60	-363.00	-435.24	-218.40	-211.20	-182.20	-53.45
Chick Exc AME	-71.25	-363.00	-400.60	-472.84	-256.00	-248.80	-219.80	-91.05
Turkey Dig AME	-137.79	-435.24	-472.84	-633.40	-442.44	-435.24	-406.24	-271.79
Chick Dig AME	73.35	-218.40	-256.00	-442.44	-400.60	-393.40	-364.40	-235.65
Turkey Exc TME	80.55	-211.20	-248.80	-435.24	-393.40	-400.60	-371.60	-242.85
Turkey Exc AME	109.55	-182.20	-219.80	-406.24	-364.40	-371.60	-400.60	-271.85
Turkey TME	239.62	-53.45	-91.05	-271.79	-235.65	-242.85	-271.85	-447.88

Positive values show pairs of means that are significantly different.

Oneway Analysis of 10mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.067594
Adj Rsquare	-0.14997
Root Mean Square Error	262.8087
Mean of Response	2788.526
Observations (or Sum Wgts)	38

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	150210.8	21458.7	0.3107	0.9434
Error	30	2072052.7	69068.4		
C. Total	37	2222263.5			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2736.60	117.53	2496.6	2976.6
Chick Exc AME	5	2820.00	117.53	2580.0	3060.0
Chick Exc TME	5	2861.00	117.53	2621.0	3101.0
Rooster TME	5	2684.60	117.53	2444.6	2924.6
Turkey Dig AME	5	2891.20	117.53	2651.2	3131.2
Turkey Exc AME	5	2791.00	117.53	2551.0	3031.0
Turkey Exc TME	5	2811.20	117.53	2571.2	3051.2
Turkey TME	3	2788.67	151.73	2478.8	3098.5

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Turkey Dig AME	0.00	30.20	71.20	80.00	100.20	102.53	154.60	206.60
Chick Exc TME	-30.20	0.00	41.00	49.80	70.00	72.33	124.40	176.40
Chick Exc AME	-71.20	-41.00	0.00	8.80	29.00	31.33	83.40	135.40
Turkey Exc TME	-80.00	-49.80	-8.80	0.00	20.20	22.53	74.60	126.60
Turkey Exc AME	-100.20	-70.00	-29.00	-20.20	0.00	2.33	54.40	106.40
Turkey TME	-102.53	-72.33	-31.33	-22.53	-2.33	0.00	52.07	104.07
Chick Dig AME	-154.60	-124.40	-83.40	-74.60	-54.40	-52.07	0.00	52.00
Rooster TME	-206.60	-176.40	-135.40	-126.60	-106.40	-104.07	-52.00	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

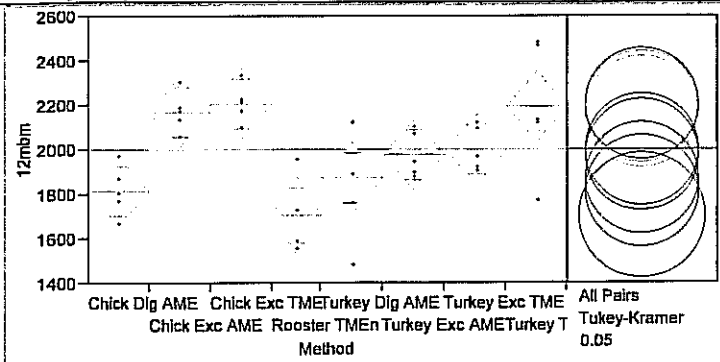
3.25370

Abs(Dif)-LSD

	Turkey Dig AME	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey TME	Chick Dig AME	Rooster TME
Turkey Dig AME	-540.81	-510.81	-489.61	-460.81	-440.61	-521.94	-386.21	-334.21
Chick Exc TME	-510.81	-540.81	-499.81	-481.01	-470.81	-552.14	-416.41	-364.41
Chick Exc AME	-489.61	-499.81	-540.81	-532.01	-511.81	-593.14	-457.41	-405.41
Turkey Exc TME	-460.81	-481.01	-532.01	-540.81	-520.81	-601.94	-466.21	-414.21
Turkey Exc AME	-440.61	-470.81	-511.81	-520.61	-540.81	-622.14	-486.41	-434.41
Turkey TME	-521.94	-552.14	-593.14	-601.94	-622.14	-688.19	-572.41	-520.41
Chick Dig AME	-386.21	-416.41	-457.41	-466.21	-486.41	-572.41	-540.81	-488.81
Rooster TME	-334.21	-364.41	-405.41	-414.21	-434.41	-520.41	-488.81	-540.81

Positive values show pairs of means that are significantly different.

Oneway Analysis of 12mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0,552834
Adj Rsquare	0,451861
Root Mean Square Error	172,8404
Mean of Response	1998,179
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1144927,8	163561	5,4751	0,0004
Error	31	926088,0	29874		
C. Total	38	2071015,7			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	1813,20	77,297	1655,6	1970,8
Chick Exc AME	5	2168,20	77,297	2010,6	2325,8
Chick Exc TME	5	2204,00	77,297	2046,4	2361,6
Rooster TME	4	1703,25	86,420	1527,0	1879,5
Turkey Dig AME	5	1871,80	77,297	1714,2	2029,4
Turkey Exc AME	5	1975,20	77,297	1817,6	2132,8
Turkey Exc TME	5	1999,20	77,297	1841,6	2156,8
Turkey TME	5	2191,60	77,297	2034,0	2349,2

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean(I)-Mean(J)

	Chick Exc TME	Turkey TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Dig AME	Rooster TME
Chick Exc TME	0,00	12,40	35,80	204,80	228,80	332,20	390,80	500,75
Turkey TME	-12,40	0,00	23,40	192,40	216,40	319,80	378,40	488,35
Chick Exc AME	-35,80	-23,40	0,00	169,00	193,00	296,40	355,00	464,95
Turkey Exc TME	-204,80	-192,40	-169,00	0,00	24,00	127,40	186,00	295,95
Turkey Exc AME	-228,80	-216,40	-193,00	-24,00	0,00	103,40	162,00	271,95
Turkey Dig AME	-332,20	-319,80	-296,40	-127,40	-103,40	0,00	58,60	168,55
Chick Dig AME	-390,80	-378,40	-355,00	-186,00	-162,00	-58,60	0,00	109,95
Rooster TME	-500,75	-488,35	-464,95	-295,95	-271,95	-168,55	-109,95	0,00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

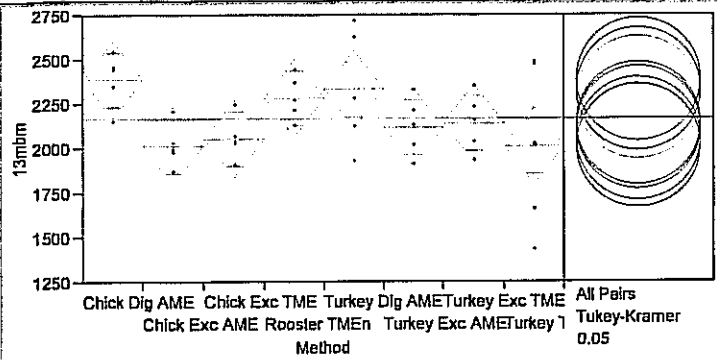
3,24626

Abs(Dif)-LSD

	Chick Exc TME	Turkey TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Turkey Dig AME	Chick Dig AME	Rooster TME
Chick Exc TME	-354,86	-342,46	-319,06	-150,06	-126,06	-22,66	35,94	124,36
Turkey TME	-342,46	-354,86	-331,46	-162,46	-138,46	-35,06	23,54	111,96
Chick Exc AME	-319,06	-331,46	-354,86	-185,86	-161,86	-58,46	0,14	88,56
Turkey Exc TME	-150,06	-162,46	-185,86	-354,86	-330,86	-227,46	-168,86	-80,44
Turkey Exc AME	-126,06	-138,46	-161,86	-330,86	-354,86	-251,46	-192,86	-104,44
Turkey Dig AME	-22,66	-35,06	-58,46	-227,46	-251,46	-354,86	-296,26	-207,84
Chick Dig AME	35,94	23,54	0,14	-168,86	-192,86	-266,26	-354,86	-266,44
Rooster TME	124,36	111,96	88,56	-80,44	-104,44	-207,84	-266,44	-396,75

Positive values show pairs of means that are significantly different.

Oneway Analysis of 13mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.295308
Adj Rsquare	0.141156
Root Mean Square Error	238.5159
Mean of Response	2165.475
Observations (or Sum Wgts)	40

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	762886.0	108984	1.9157	0.0996
Error	32	1820474.0	56890		
C. Total	39	2583360.0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2385.00	106.67	2167.7	2602.3
Chick Exc AME	5	2013.00	106.67	1795.7	2230.3
Chick Exc TME	5	2051.60	106.67	1834.3	2268.9
Rooster TMEn	5	2281.60	106.67	2064.3	2498.9
Turkey Dig AME	5	2330.20	106.67	2112.9	2547.5
Turkey Exc AME	5	2115.20	106.67	1897.9	2332.5
Turkey Exc TME	5	2137.40	106.67	1920.1	2354.7
Turkey TMEn	5	2009.80	106.67	1792.5	2227.1

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Dig AME	Turkey Dig AME	Rooster TMEn	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Chick Exc AME	Turkey TMEn
Chick Dig AME	0.00	54.80	103.40	247.60	269.80	333.40	372.00	375.20
Turkey Dig AME	-54.80	0.00	48.60	192.80	215.00	278.60	317.20	320.40
Rooster TMEn	-103.40	-48.60	0.00	144.20	166.40	230.00	268.60	271.80
Turkey Exc TME	-247.60	-192.80	-144.20	0.00	22.20	85.80	124.40	127.60
Turkey Exc AME	-269.80	-215.00	-166.40	-22.20	0.00	63.60	102.20	105.40
Chick Exc TME	-333.40	-278.60	-230.00	-85.80	-63.60	0.00	38.60	41.80
Chick Exc AME	-372.00	-317.20	-268.60	-124.40	-102.20	-38.60	0.00	3.20
Turkey TMEn	-375.20	-320.40	-271.80	-127.60	-105.40	-41.80	-3.20	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

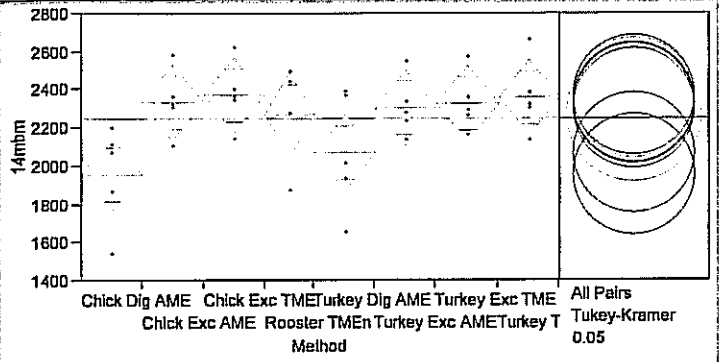
3.23930

Abs(Dif)-LSD

	Chick Dig AME	Turkey Dig AME	Rooster TMEn	Turkey Exc TME	Turkey Exc AME	Chick Exc TME	Chick Exc AME	Turkey TMEn
Chick Dig AME	-488.65	-433.85	-385.25	-241.05	-218.85	-155.25	-116.65	-113.45
Turkey Dig AME	-433.85	-488.65	-440.05	-295.85	-273.65	-210.05	-171.45	-168.25
Rooster TMEn	-385.25	-440.05	-488.65	-344.45	-322.25	-258.65	-220.05	-216.85
Turkey Exc TME	-241.05	-295.85	-344.45	-488.65	-466.45	-402.85	-364.25	-361.05
Turkey Exc AME	-218.85	-273.65	-322.25	-466.45	-488.65	-425.05	-386.45	-383.25
Chick Exc TME	-155.25	-210.05	-258.65	-402.85	-425.05	-488.65	-450.05	-446.85
Chick Exc AME	-116.65	-171.45	-220.05	-364.25	-386.45	-450.05	-488.65	-485.45
Turkey TMEn	-113.45	-168.25	-216.85	-361.05	-383.25	-446.85	-485.45	-488.65

Positive values show pairs of means that are significantly different.

Oneway Analysis of 14mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.355746
Adj Rsquare	0.210269
Root Mean Square Error	217.2993
Mean of Response	2245.487
Observations (or Sum Wgts)	39

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	808278.6	115468	2.4454	0.0406
Error	31	1463789.2	47219		
C. Total	38	2272067.7			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	1953.20	97.18	1755.0	2151.4
Chick Exc AME	5	2331.60	97.18	2133.4	2529.8
Chick Exc TME	5	2368.60	97.18	2170.4	2566.8
Rooster TME	4	2267.25	108.65	2045.7	2488.8
Turkey Dig AME	5	2066.80	97.18	1868.8	2265.0
Turkey Exc AME	5	2301.20	97.18	2103.0	2499.4
Turkey Exc TME	5	2324.80	97.18	2128.8	2523.0
Turkey TME	5	2354.80	97.18	2156.6	2553.0

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Turkey TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Chick Dig AME
Chick Exc TME	0.00	13.80	37.00	43.80	67.40	101.35	301.80	415.40
Turkey TME	-13.80	0.00	23.20	30.00	53.60	87.55	288.00	401.80
Chick Exc AME	-37.00	-23.20	0.00	6.80	30.40	64.35	264.80	378.40
Turkey Exc TME	-43.80	-30.00	-6.80	0.00	23.60	57.55	258.00	371.60
Turkey Exc AME	-67.40	-53.60	-30.40	-23.60	0.00	33.95	234.40	348.00
Rooster TME	-101.35	-87.55	-64.35	-57.55	-33.95	0.00	200.45	314.05
Turkey Dig AME	-301.80	-288.00	-264.80	-258.00	-234.40	-200.45	0.00	113.60
Chick Dig AME	-415.40	-401.80	-378.40	-371.60	-348.00	-314.05	-113.60	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

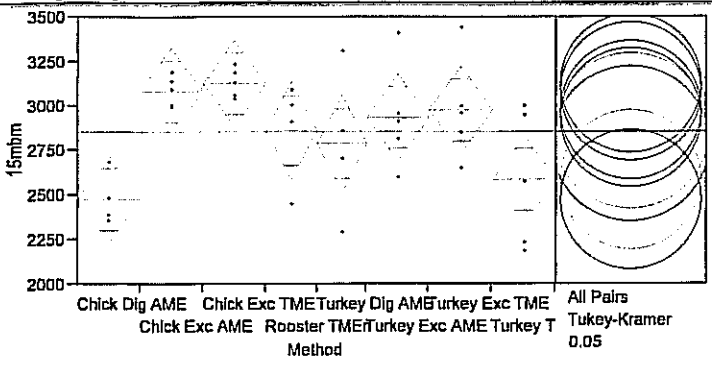
q*
3.24626

Abs(Dif)-LSD

	Chick Exc TME	Turkey TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Chick Dig AME
Chick Exc TME	-446.14	-432.34	-409.14	-402.34	-378.74	-371.85	-144.34	-30.74
Turkey TME	-432.34	-446.14	-422.94	-416.14	-392.54	-385.65	-158.14	-44.54
Chick Exc AME	-409.14	-422.94	-446.14	-439.34	-415.74	-408.85	-181.34	-67.74
Turkey Exc TME	-402.34	-416.14	-439.34	-446.14	-422.54	-415.65	-188.14	-74.54
Turkey Exc AME	-378.74	-392.54	-415.74	-422.54	-446.14	-439.25	-211.74	-98.14
Rooster TME	-371.85	-385.65	-408.85	-415.65	-439.25	-488.80	-272.75	-159.15
Turkey Dig AME	-144.34	-158.14	-181.34	-188.14	-211.74	-272.75	-446.14	-332.54
Chick Dig AME	-30.74	-44.54	-67.74	-74.54	-98.14	-159.15	-332.54	-446.14

Positive values show pairs of means that are significantly different.

Oneway Analysis of 15mbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.456727
Adj Rsquare	0.328964
Root Mean Square Error	269.0215
Mean of Response	2852.5
Observations (or Sum Wgts)	38

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1825300.7	260757	3.6030	0.0062
Error	30	2171176.8	72373		
C. Total	37	3996477.5			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	2473.80	120.31	2228.1	2719.5
Chick Exc AME	5	3078.60	120.31	2832.9	3324.3
Chick Exc TME	5	3123.00	120.31	2877.3	3368.7
Rooster TME	4	2858.00	134.51	2583.3	3132.7
Turkey Dig AME	4	2785.25	134.51	2510.5	3060.0
Turkey Exc AME	5	2932.00	120.31	2686.3	3177.7
Turkey Exc TME	5	2974.00	120.31	2728.3	3219.7
Turkey TME	5	2583.00	120.31	2337.3	2828.7

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Turkey TME	Chick Dig AME
Chick Exc TME	0.00	44.40	149.00	191.00	265.00	337.75	540.00	649.20
Chick Exc AME	-44.40	0.00	104.60	146.60	220.60	293.35	495.60	604.80
Turkey Exc TME	-149.00	-104.60	0.00	42.00	116.00	188.75	391.00	500.20
Turkey Exc AME	-191.00	-146.60	-42.00	0.00	74.00	146.75	349.00	458.20
Rooster TME	-265.00	-220.60	-116.00	-74.00	0.00	72.75	275.00	384.20
Turkey Dig AME	-337.75	-293.35	-188.75	-146.75	-72.75	0.00	202.25	311.45
Turkey TME	-540.00	-495.60	-391.00	-349.00	-275.00	-202.25	0.00	109.20
Chick Dig AME	-649.20	-604.80	-500.20	-458.20	-384.20	-311.45	-109.20	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

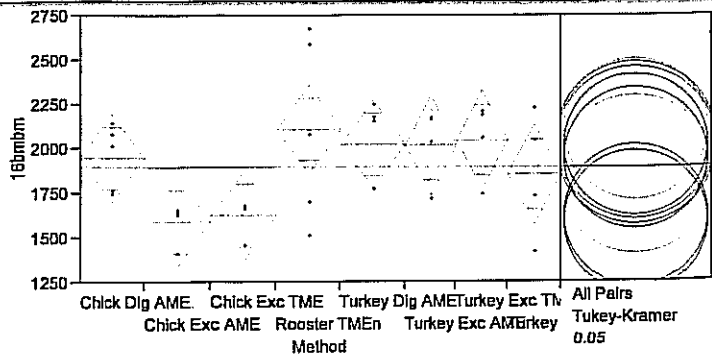
3.25370

Abs(Dif)-LSD

	Chick Exc TME	Chick Exc AME	Turkey Exc TME	Turkey Exc AME	Rooster TME	Turkey Dig AME	Turkey TME	Chick Dig AME
Chick Exc TME	-553.60	-509.20	-404.60	-362.60	-322.18	-249.43	-13.60	95.60
Chick Exc AME	-509.20	-553.60	-449.00	-407.00	-366.58	-293.83	-58.00	51.20
Turkey Exc TME	-404.60	-449.00	-553.60	-511.60	-471.18	-398.43	-162.60	-53.40
Turkey Exc AME	-362.60	-407.00	-511.60	-553.60	-513.18	-440.43	-204.80	-95.40
Rooster TME	-322.18	-366.58	-471.18	-513.18	-618.94	-546.19	-312.18	-202.98
Turkey Dig AME	-249.43	-293.83	-398.43	-440.43	-546.19	-618.94	-384.93	-275.73
Turkey TME	-13.60	-58.00	-162.60	-204.60	-312.18	-384.93	-553.60	-444.40
Chick Dig AME	95.60	51.20	-53.40	-95.40	-202.98	-275.73	-444.40	-553.60

Positive values show pairs of means that are significantly different.

Oneway Analysis of 16bmbm By Method



Oneway Anova

Summary of Fit

Rsquare	0.379027
Adj Rsquare	0.228137
Root Mean Square Error	272.0416
Mean of Response	1893.73
Observations (or Sum Wgts)	37

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Method	7	1309982.0	187140	2.5287	0.0369
Error	29	2146192.4	74007		
C. Total	36	3456175.3			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Chick Dig AME	5	1945.00	121.66	1696.2	2193.8
Chick Exc AME	5	1588.40	121.66	1339.6	1837.2
Chick Exc TME	5	1622.60	121.66	1373.8	1871.4
Rooster TME	5	2108.40	121.66	1857.6	2355.2
Turkey Dig AME	5	2019.20	121.66	1770.4	2268.0
Turkey Exc AME	4	2016.50	136.02	1738.3	2294.7
Turkey Exc TME	4	2045.00	136.02	1766.8	2323.2
Turkey TME	4	1853.50	136.02	1575.3	2131.7

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]

	Rooster TME	Turkey Exc TME	Turkey Dig AME	Turkey Exc AME	Chick Dig AME	Turkey TME	Chick Exc TME	Chick Exc AME
Rooster TME	0.00	61.40	87.20	89.90	161.40	252.90	483.80	518.00
Turkey Exc TME	-61.40	0.00	25.80	28.50	100.00	191.50	422.40	456.60
Turkey Dig AME	-87.20	-25.80	0.00	2.70	74.20	165.70	396.60	430.80
Turkey Exc AME	-89.90	-28.50	-2.70	0.00	71.50	163.00	393.90	428.10
Chick Dig AME	-161.40	-100.00	-74.20	-71.50	0.00	91.50	322.40	356.60
Turkey TME	-252.90	-191.50	-165.70	-163.00	-91.50	0.00	230.90	265.10
Chick Exc TME	-483.80	-422.40	-396.60	-393.90	-322.40	-230.90	0.00	34.20
Chick Exc AME	-518.00	-456.60	-430.80	-428.10	-356.60	-265.10	-34.20	0.00

Alpha= 0.05

Comparisons for all pairs using Tukey-Kramer HSD

q*

3.26166

Abs(Dif)-LSD

	Rooster TME	Turkey Exc TME	Turkey Dig AME	Turkey Exc AME	Chick Dig AME	Turkey TME	Chick Exc TME	Chick Exc AME
Rooster TME	-561.18	-533.82	-473.98	-505.32	-399.78	-342.32	-77.38	-43.18
Turkey Exc TME	-533.82	-627.42	-569.42	-598.92	-495.22	-435.92	-172.82	-138.62
Turkey Dig AME	-473.98	-569.42	-561.18	-592.52	-486.98	-429.52	-164.58	-130.38
Turkey Exc AME	-505.32	-598.92	-592.52	-627.42	-523.72	-464.42	-201.32	-167.12
Chick Dig AME	-399.78	-495.22	-486.98	-523.72	-561.18	-503.72	-238.78	-204.58
Turkey TME	-342.32	-435.92	-429.52	-464.42	-503.72	-627.42	-364.32	-330.12
Chick Exc TME	-77.38	-172.82	-164.58	-201.32	-238.78	-364.32	-561.18	-526.98
Chick Exc AME	-43.18	-138.62	-130.38	-167.12	-204.58	-330.12	-526.98	-561.18

Positive values show pairs of means that are significantly different.