

Summit Ridge Farms

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Canine Palatability Results

Control - Dog Food alone
versus
Test - Dog food with 0.50% Butter Buds 32X

Study # BUTPALC00115

Submitted to:
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Butter Buds Inc
2330 Chicory Road
Racine, WI 53403

Dates of Performance:
01/13/15
to
01/14/15

Amanda L. Fallon
Study Coordinator

Date

Consumption Summary

The total amount of food consumed by the 20 dogs during the 2 days of this test was 28,127 Grams as follows:

Diet A as Control: 8,465 Grams or 30.1 %

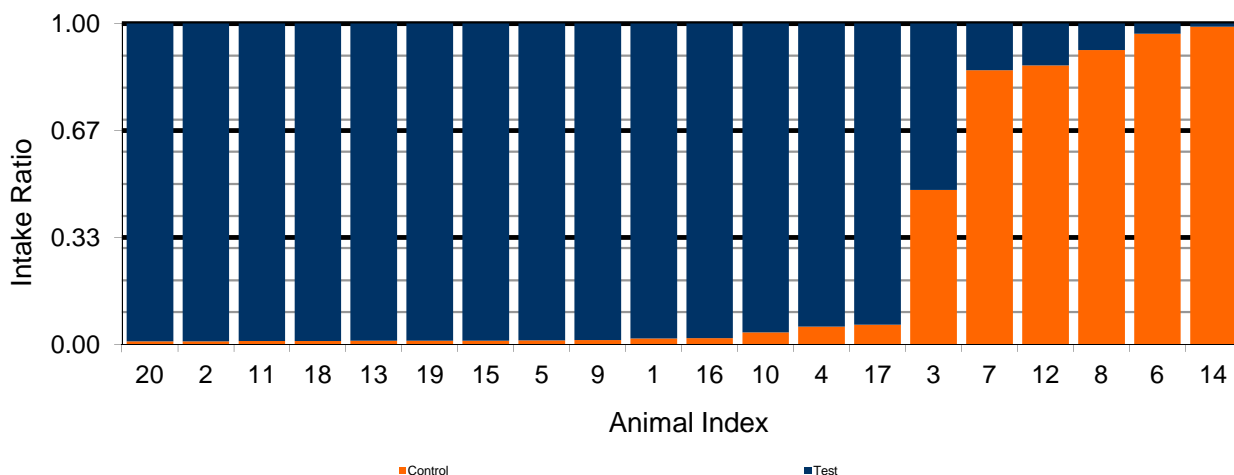
Diet B as Test: 19,662 Grams or 69.9 %

There is a 2.32 to 1 consumption ratio of Test to Control.

Using a Wilcoxon Signed Rank test there is hardly any reason to suspect a consumption difference between the two Diets ($P = 0.0620$). A 2-way analysis of variance (2-Way ANOVA) indicates that there is significant reason to suspect a difference in consumption of the 2 diets when the variance in consumption of the dogs is accounted for. ($F = 4.574$, $P = 0.0457$)

Intake Ratio Chart

The individual Intake Ratios for each of the 20 dogs are sorted in ascending order for Control:



The average of the 20 individual Intake Ratios for each Diet are as follows:

Diet A as Control: Average IR = 0.269.

Diet B as Test: Average IR = 0.731.

Preference By First Choice

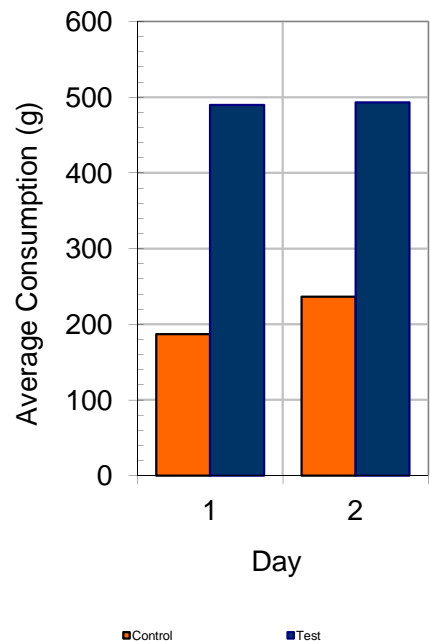
Over both days Control was chosen first on 10 occasions and Test was chosen first on 30 occasions. A significant First Choice is detected and tends to favor Test. The Chi^2 probability is $p = 0.0016$

Over both days 4 dogs chose Control first every day and 14 dogs chose Test first every day, the other 2 were undecided. There is significant reason to suspect that this result is not random as a definite preference is detected. The Chi^2 probability is $p = 0.0000$

Daily Consumption Summary

The average daily consumption of each diet is listed below for both days. The consumption of each diet is compared using a separate paired t-Test within each day (20 dogs by 2 diets) to assess significance in consumption difference for that day.

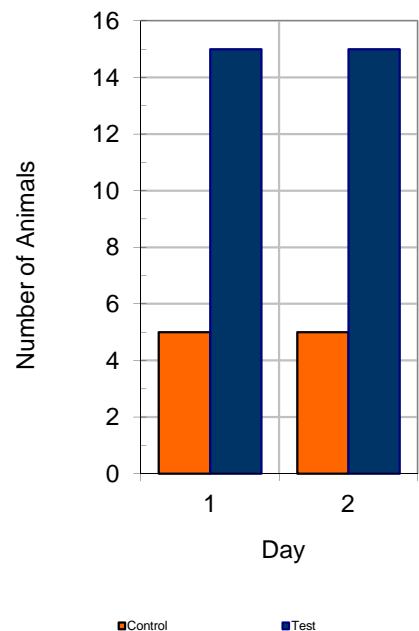
Average Daily Consumption Data					
Day	Diet A	Diet B	Total	P of t	Significant
1	186.8	489.9	676.6	0.0408	YES!
2	236.5	493.3	729.8	0.0719	NO



Daily Preference By First Choice

The diet of First Choice preference is scored daily for each dog and the counts are listed below. A Chi² test compares the daily counts for Control and Test to the counts that might have been expected if there was no First Choice difference in the two diets. In this case that would be a 10:10 ratio or both diets chosen equally. Now, a Significant result (YES!) here indicates that these products were not chosen equally. Whereas, a non Significant result (NO) means that there is no evidence to suspect a First Choice difference.

Daily First Choice Counts				
Day	Diet A	Diet B	P of Chi ²	Significant
1	5	15	0.0253	YES!
2	5	15	0.0253	YES!

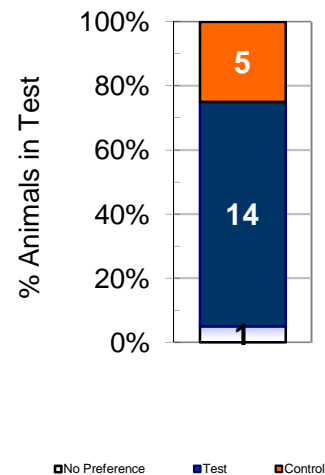


Preference Scoring by Intake Ratio

It is a popular contention that an animal shows a clear preference by consuming twice as much of one diet as the other. This is measured as a 2:1 consumption ratio or a 0.6667 Intake Ratio.

Scoring is achieved by reviewing the average intake ratios for each dog in the test and scoring one point for the Diet with an Intake Ratio greater than or equal to 0.6667.

Using the 2:1 consumption criteria in the Intake Preference chart to the right, 5 dogs prefer Control, 14 dogs prefer Test and The other dog shows no Preference.



Methods and Procedures

The kennel facility is registered with the USDA No. 23-R-0126 under the Animal Welfare Act. The kennel had a 12-hour-light/12-hour-dark cycle. Every attempt was made to keep temperature ranges within targeted conditions (from 50° to 85°F) in accordance with the Animal Welfare Act. Cages and feed bowls were cleaned daily and sanitized in accordance with the Animal Welfare Act.

The purpose of the study was to assess the palatability of Control and Test. The Sponsor owns the study, including raw data, results, and final reports. Summit Ridge Farms agrees to keep all aspects of this study and report confidential.

On 12/26/14, 28 cases of test article Control and 28 cases of test article Test were received.

Twenty male and female cats identified by ear tattoo and cage number were presented the test diets on an individual basis. Two stainless steel bowls, each containing approximately 2 cans of diet, were offered once daily for 2 days. To create diet B, 0.50% of powder was added to the canned diet and mixed thoroughly. Bowl placement was reversed daily and both bowls were presented for 2 hours. If one diet was completely consumed prior to the end of the 2 hours, both bowls were removed. Food consumption and first choice preference were recorded for each cat.

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Date: 1/13/2015

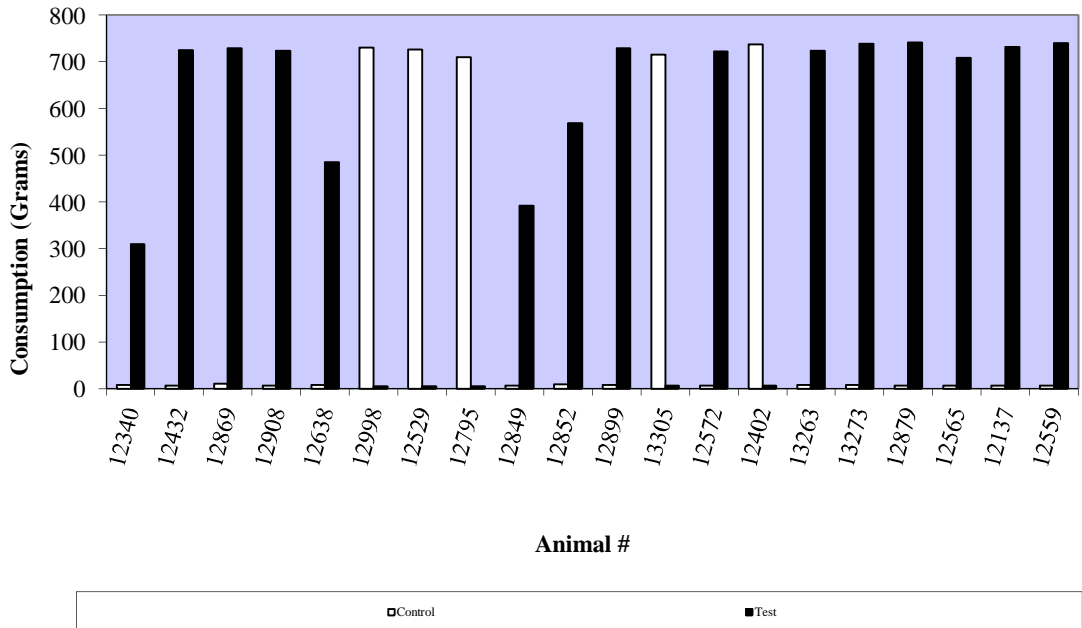
Table 1: Day 1 Food Consumption and First Choice Data

	Dog	Grams of Diet Control			First Choice	Grams of Diet Test			First Choice	IR
		A Weigh In	A Weigh Out	A Total		B Weigh In	B Weigh Out	B Total		
1	12340	954	946	8		942	633	309	*	0.03
2	12432	960	954	6		949	<u>224</u>	725	*	0.01
3	12869	958	947	11		947	<u>218</u>	729	*	0.01
4	12908	948	941	7		945	<u>221</u>	724	*	0.01
5	12638	943	935	8		955	470	485	*	0.02
6	12998	949	<u>218</u>	731	*	955	950	5		0.99
7	12529	944	<u>217</u>	727	*	951	946	5		0.99
8	12795	927	<u>217</u>	710	*	952	947	5		0.99
9	12849	962	955	7		956	564	392	*	0.02
10	12852	974	965	9		953	384	569	*	0.02
11	12899	960	952	8		954	<u>225</u>	729	*	0.01
12	13305	932	<u>217</u>	715	*	927	921	6		0.99
13	12572	947	940	7		943	<u>221</u>	722	*	0.01
14	12402	958	<u>221</u>	737	*	952	946	6		0.99
15	13263	956	948	8		943	<u>219</u>	724	*	0.01
16	13273	959	951	8		957	<u>218</u>	739	*	0.01
17	12879	936	929	7		960	<u>218</u>	742	*	0.01
18	12565	932	925	7		928	<u>219</u>	709	*	0.01
19	12137	949	942	7		952	<u>220</u>	732	*	0.01
20	12559	947	940	7		960	<u>220</u>	740	*	0.01
Total:		18995	15260	3735	5	18981	9184	9797	15	5.15
Average:		949.8	763.0	186.8		949.1	459.2	489.9		0.26

The underlined numbers indicate all of the diet offered was consumed.

2.62 to 1 consumption ratio for Test to Control

3.00 to 1 First Choice ratio for Test to Control



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Date: 1/14/2015

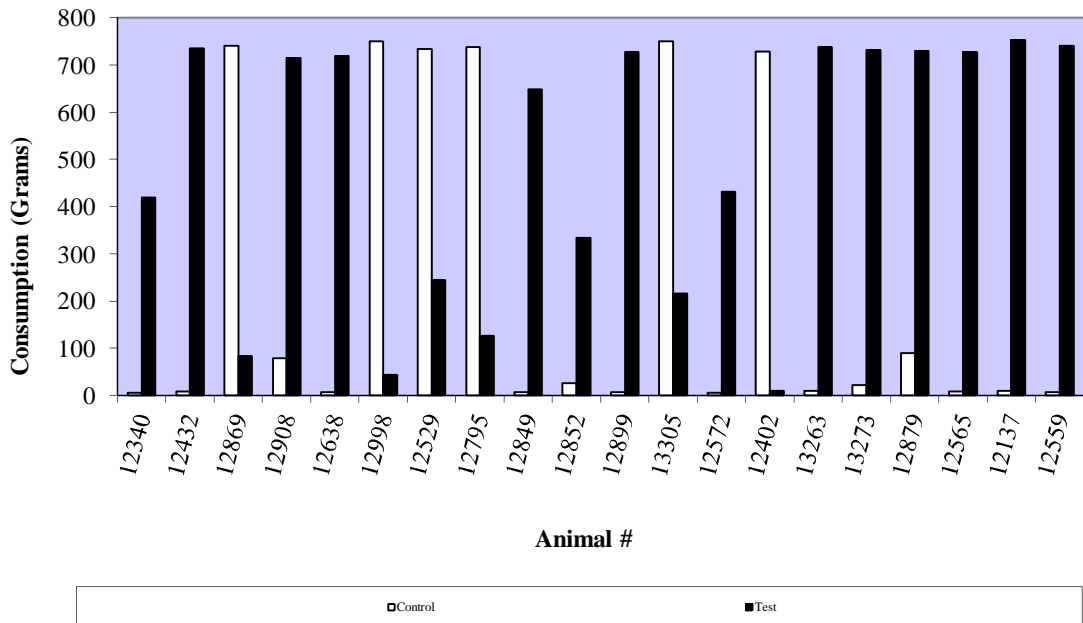
Table 2: Day 2 Food Consumption and First Choice Data

	Dog	Grams of Diet Control			First Choice	Grams of Diet Test			First Choice	IR
		A Weigh In	A Weigh Out	A Total		B Weigh In	B Weigh Out	B Total		
1	12340	940	934	6		965	546	419	*	0.01
2	12432	961	953	8		958	<u>223</u>	735	*	0.01
3	12869	959	<u>218</u>	741	*	957	874	83		0.90
4	12908	952	874	78		936	<u>222</u>	714	*	0.10
5	12638	953	946	7		943	<u>224</u>	719	*	0.01
6	12998	968	<u>218</u>	750	*	962	918	44		0.94
7	12529	952	<u>218</u>	734	*	916	672	244		0.75
8	12795	954	<u>217</u>	737	*	951	825	126		0.85
9	12849	961	954	7		957	309	648	*	0.01
10	12852	953	927	26		950	617	333	*	0.07
11	12899	967	960	7		947	<u>220</u>	727	*	0.01
12	13305	966	<u>216</u>	750		942	727	215	*	0.78
13	12572	960	954	6		955	524	431	*	0.01
14	12402	949	<u>221</u>	728	*	948	939	9		0.99
15	13263	943	934	9		955	<u>218</u>	737	*	0.01
16	13273	940	918	22		950	<u>219</u>	731	*	0.03
17	12879	957	868	89		947	<u>217</u>	730	*	0.11
18	12565	955	947	8		946	<u>219</u>	727	*	0.01
19	12137	955	945	10		973	<u>220</u>	753	*	0.01
20	12559	953	946	7		960	<u>220</u>	740	*	0.01
Total:		19098	14368	4730	5	19018	9153	9865	15	5.64
Average:		954.9	718.4	236.5		950.9	457.7	493.3		0.28

The underlined numbers indicate all of the diet offered was consumed.

2.09 to 1 consumption ratio for Test to Control

3.00 to 1 First Choice ratio for Test to Control



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Dates: 01/13/15 through 01/14/15

Summary Table: Total Food Consumption and First Choice Data

Dog	Grams of Diet Control				Grams of Diet Test					
	A Weigh In	A Weigh Out	A Total	First Choice	B Weigh In	B Weigh Out	B Total	First Choice	IR	
1	12340	1894	1880	14	0	1907	1179	728	2	0.02
2	12432	1921	1907	14	0	1907	447	1460	2	0.01
3	12869	1917	1165	752	1	1904	1092	812	1	0.48
4	12908	1900	1815	85	0	1881	443	1438	2	0.06
5	12638	1896	1881	15	0	1898	694	1204	2	0.01
6	12998	1917	436	1481	2	1917	1868	49	0	0.97
7	12529	1896	435	1461	2	1867	1618	249	0	0.85
8	12795	1881	434	1447	2	1903	1772	131	0	0.92
9	12849	1923	1909	14	0	1913	873	1040	2	0.01
10	12852	1927	1892	35	0	1903	1001	902	2	0.04
11	12899	1927	1912	15	0	1901	445	1456	2	0.01
12	13305	1898	433	1465	1	1869	1648	221	1	0.87
13	12572	1907	1894	13	0	1898	745	1153	2	0.01
14	12402	1907	442	1465	2	1900	1885	15	0	0.99
15	13263	1899	1882	17	0	1898	437	1461	2	0.01
16	13273	1899	1869	30	0	1907	437	1470	2	0.02
17	12879	1893	1797	96	0	1907	435	1472	2	0.06
18	12565	1887	1872	15	0	1874	438	1436	2	0.01
19	12137	1904	1887	17	0	1925	440	1485	2	0.01
20	12559	1900	1886	14	0	1920	440	1480	2	0.01
Total:		38093	29628	8465	10	37999	18337	19662	30	5.37
Average:		1904.7	1481.4	423.3		1900.0	916.9	983.1		0.27

2.32 to 1 consumption ratio for Test to Control

3.00 to 1 First Choice ratio for Test to Control

