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Analysis of Animal Feed Products Sold in Connecticut 2008

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INTRODUCTION

In the State of Connecticut The Agricultural Commodities Division of The Department of Agriculture is responsible for the regulation and inspection of animal feeding products and pet foods. These products are delivered to The Department of Analytical Chemistry at The Connecticut Agricultural Experiment Station for analysis to ensure label compliance (1).

METHODS

From January 1, 2008 through December 31, 2008, The Department of Analytical Chemistry at The Connecticut Agricultural Experiment Station analyzed 119 animal feeding products for sale in Connecticut. These products were collected by The Department of Agriculture and delivered to the Department of Analytical Chemistry by Agricultural Commodities Inspectors John Schneider and Wayne Nelson. The products were collected at manufacturing facilities and wholesale dealers from bulk storage/delivery, as well as from retail stores in bags, boxes, and cans. The animal feeding products, along with their manufacturer/dealer, can be found in Table 1.

After delivery to The Connecticut Agricultural Experiment Station the animal feeding products were sub sampled and prepared for analysis. The samples were analyzed for protein, fat, fiber, ash, and moisture using methods described in Official Methods of Analysis (2). Micronutrients were determined using ICP-OES (Inductively Coupled Plasma-Optical Emission Spectroscopy, Thermo Jarrell Ash Atom Scan 16, Franklin MA). The animal feed products were analyzed by Mamie Pyles and John Ranciato under the supervision of Craig Musante.

RESULTS AND DISCUSSION

Animal feed products are reported to be unsatisfactory if the amount of a guaranteed substance is found to differ from the label guarantee according to the percent analytical

variation guidelines as established by the Association of the American Feed Control Officials (AAFCO) (3).

The number of samples deemed unsatisfactory in one or more macronutrients was 25 (21%). Specifically 6 (5%) were deficient in protein; 9 (7.6%) were deficient in fat; 7 (5.9%) contained an excess of fiber; and 3 (2.5%) contained an excess of ash. Table 1. shows the results for the analysis of macronutrients, where the label guaranteed nutrient value is denoted as (%G) and the laboratory determined nutrient value is denoted as (%F). Deficiencies and excesses of a guaranteed nutrient are expressed as a minus (-) sign or a plus (+) sign next to the laboratory determined value (%F).

Table 2. contains the results for micronutrients following the nomenclature found in Table 1. Micronutrient values are expressed as percent unless otherwise noted. Of the 44 samples analyzed for micronutrients, 3 (6.8%) were found to be unsatisfactory in one or more guaranteed nutrient value.

When the laboratory determined value of a nutrient is found to be unsatisfactory that sample is always reanalyzed. Table 3. contains the results (average and standard deviation) for samples found to be unsatisfactory. The number of reanalyses of an unsatisfactory sample ranges from a minimum of two up to six replicates.

Eleven samples of animal feed were analyzed for melamine, its analogs and related compounds. None of the samples exceeded the 2.5 ug/g action level for melamine (and analogs) in foods, as set by the FDA.

REFERENCES

1. The Connecticut Department of Agriculture; Agricultural Commodities Division, <http://www.ct.gov/doag/site/default.asp>.
2. Official Methods of Analysis. 1980 13th edition, W. Horowitz, ed. Association of Official Analytical Chemists, Washington, D.C.
3. 2003 Official Publication Association of American Feed Control Officials; 2003, <http://www.aafco.org>.

Table 1. Results of Analysis of Animal Feed Products for Macronutrients

Manufacturer	Sample Description	Protein %G %F	Fat %G %F	Fiber %G %F	Moisture %G %F	Ash %G %F
ADI PET, Inc.						
Waggin Train Chicken Jerky Tenders		70 96.1	1 3.8	0.3 0.1	14 6.4	
Albertson's Inc.						
Happy Tails Complete Nutrition Cat Food		34 34.2	13 13.9	4.5 2	12 4.3	
Happy tails Goormet Salmon Supreme Dinner		12 17.8	4 4	1.5 0.16	78 76.9	
Happy Tails with Beef + Liver Dog Food		8 9.8	3 4.8	1 0.78	82 79.1	
Audobon Park Co						
IGA Wild Bird Food		9 7.7-	4 6.6	14 4.5		
Beowolf Natural Feeds, Inc.						
Back to Basics Super Premium Dog Food - Chicken		23 18.8-	19 20.5	4 3.7	10 5.1	5.9 7.3+
Birdola Products						
Birdola Woodpecker Blend		19 25.9	30.6 21.3-	22.6 7.5		
Blue Buffalo Company LTP						
Blue Spa Select Tempting Tuna Grill		10 11.8	3.5 11.8	1 0.6	78 69.4	2.1 2.6
Blue Dog Bakery Natural Soft Dog Treats		6 6.9	8 11	2 0.35	15 11.7	
Blue Seal Feeds, Inc.						
Organics - organic chicken + chicken Liver for cats		10 12	6 12.1	1.5 1.8	78 71.4	

by Nature Chicken + Lamb Dinner with Gravy Dog Food	8	11.7	1	2.4	1.5	0.22	82	81.5
Blue Seal Pork + Barley Flavor For Dogs	24	24.1	14	14.8	4	2.5	10	6.1
Blue Seal Adult Cat Formula	32	35.2	16	15.2	6	3.2	10	4.9
Bumble Bee Acquisition Corp., International Home Foods								
Figaro Seafood Delight Cat Food	18	19.8	2	1.3-	1	0.1	78	74.9
C&S Products								
C+S Berry Seed Suet	4	5.8	25	54.8	12	6.6		
Cadillac Pet Foods								
Cadillac 6 in 1 Dinner for Cats	9	11.1	5	6.01	1	0.49	78	77.3
Canidae Corporation								
Felidae Cat+Kitten Formula Chicken, Turkey, Lamb+Fish	11	13.6	7	8.5	1	2.3+	78	74.1
CHS Inc.								
Feathered Friend Beef Suet Cake	6	7.1	35	61	12	21.1+	10	3.2
D&D Commodities LTD								
L'Avion Plus Canary Food	16	15.9	11	10.7	8	5.8	12	7.8
Dad's Pet Care								
Dad's Special Mix Cat Food	32	34.3	9	12	4.5	1.3	12	4.9
Dad's All Natural Big Dog Chunk	21	23.1	8	11.4	4	1.8	12	5.5
Dad's Home Style Dog Biscuits	20	21.1	7.5	7.2	3	1	12	5.3
DelMonte Pet Products								
Kibbles + Bits Brushing Bites	19	20.3	8	12.4	4	1.5	18	9.4

Diamond Pet Foods						
Chicken soup For the Dog lovers Soul-Duck Oatmeal + Rice	14	9.4	5	6.4	4	1.8
DickVanPatten's Natural Balance Pet Foods						
Natural Balance Ultra Formula Cat Food	9	13.7	5	8.6	1	0.89
Natural Balance Reduced Calorie Formula Dog Food	16.5	16.4	6	10.6	5	1.4
Natural Balance Dog Food - Lamb Formula	11	18.4	5	5.8	4	1.3
Eagle Pack Pet Foods						
Eagle Pack Holistic Select Turkey + Barley Formula For Cats	9	14	6.5	10.5	1	0.78
Eight-in-One Pet Products						
8 in 1 Hedgehog Diet	30	36.2	8	10.4	5	1.1
Farnam Companies, Inc						
Platform Mare+Foal	18	17.7	8	8.6	10	8.4
Platform Miniature Horse + Pony Feed	12.5	12.6	4.5	5.4	16	13
Platform Sport + Performance Horse	14	17.2	8	7.5	10	7.5
Geat A+P Tea Company						
America's Choice Preferred Pet Puppy Formula	27	28.7	12	14.7	5	1.2
America's Choice Preferred Ped Mariners Choice Cat Food	30	33.1	8	10.5	4.5	2.9
America's Choice Preferred Pet Treats For Dogs - T-Bone						
14 11.2-			4	4.1	4	1.7
America's Choice Preferred Pet - Flaked Tuna Dinner	12	14.6	3	4.8	1.5	0.74
					78	75.2
						3.5 2.1

America's Choice Preferred Pet Dog Food with Beef + Bacon +Cheese	8	11.1	6	6.6	1.5	1.1	78	78.9
America's Choice Preferred Pet Dog Biscuits-Meat Best	15	17.4	5	4.6	3.5	1.9	12	6.3
Gutwein + Co. Inc								
Morning Song Wild Finch Food	14	9.5-	10	4.9-	12	6.6		
Hills Pet Nutrition, Inc.								
Hill's Science Diet-A dg H Savory Chicken Entrée - Dogs	5.5	9.9	3	3	1	0.51	78	75.89
Hill's Science Diet Advanced Protection Adult Cat	30	32.4	17.5	20.8	2	1.1	8	4.8
Iams Co.								
Eukauba Senior Chunks in Gravy	9	14.4	3	4.9	1.5	0.39	82	79.8
IGA, Incorporated								
IGA Choice Cat Food	31.5	32.5	11	12.2	4.5	2.8	12	5.5
IGA Dog Food with Lamb + Rice	21	20.5	12	12.5	4	3.2	12	6
IGA Chopped Beef Dinner For Dogs + Puppies	9	17.7	5	8.28	1.5	2.6+	78	76.5
JPI								
American Kennel Club Lamb + Rice Training Treats	15	15.8	5	12	3	0.73	30	29
Kaytee Products Inc.								
Kaytee Complete Chinchilla Food	16	14.6-	2.5	3.6	22	14.3	12	6.7
Lafaber Cor								
Laferea's premium Daily Diet for Parrots	14	13.6	5	10.8	3	1.6	10.5	7.5

Newman's Own Turkey + Brown Rice Formula Food	9	13.9		7	6-		1	0.7		78	77.7
Newman's Own Adult Dog Formula	21	21.6		12	13.6		4.5	3.3		10	5.5
Nutro Products, Inc.											
Nutro Max Adult for active Adult Dogs	26	25.8		16	16.6		4	1.9		10	6.8
Old Mother Hubbard											
Wellness Chicken + Sweet Potatoes	8	8.9		5	11.3		1	1		78	74.4
Wellness Turkey Formula For Cats	10	16.7		5	9.3		1	1.2		78	75
Old Mother Hubbard Cupboard Creations-Duck+Sweet Potato-for Dogs	8	13		4	5.3		1	0.79		82	79.4
Penn Pak											
Bird Ration Wild Bird Feed	8	9.3		4	5.1		18	1.7			
Pet Play, Inc.											
Petite Cuisine New England Crabcake Entire	13	14.45		1.5	1.9		1	0.13		85	81
Pine tree Farms, INC											
Birdwatchers Best Berry Essence Suet	6	7.1		35	49		12	17.7+		10	3.6
PMI Nutrition International											
Mazuri Small Bird Maintenance Diet	14.5	14.7		5	6.2		5	2.5		11	4.8
Nutri-Source Deer Feed For Growth+Maintenance											
Nutri-Source Mini Pig Food	16	17.1		3	4.1		11	9.4		9	4.9
Premium Nutritional Products											
Zu preem Avian Maintenance Fruit Blend Flavor - Parkeet	14	16.4		4	5.9		2.5	1.7		10	5.6

Pro-Pet LLC								
Big Red Guinea Pig Food	18	17.4	4	4.8	15	7	11	4.9
Lil" Red Chicken+Tuna Dinner	10	11	5	10.3	1	0.1	78	72.8
Royal Canin USA								
Royal Canin Min Adult Dog	27	29.2	16	19.3	3.7	1.7	10	5.3
S + M Nufee, LLC								
Feline Greenies - Savory Salmon Flavor	35	37.4	14	16.7	5	1.5	11	5.9
Sergeant's Pet Care Products Inc.								
Sergeant's People's Crackers	20	21.5	7	6.8	4	1.9	12	5.6
Shaw's Supermarkets Inc.								
Shaw's Wild Bird Seed Mix	9	10.7	3	10.6	14	4.7		
Sunseed Company, INC								
Sunseed Vita + Plus Ferret Formula	36	38.5	19	15.4-	4.5	1.4	12	4.3
Targeted Pet treats LLC								
Better Than Ears	13	15.4	3	0.81-	4	1	25	12
Taste of Nature, Inc.								
Nathan's Hot Dog Treats	20	20.8	20	32.03	5	4.6	30	30.5
Tetra Sales								
Tetra Min Tropical Flakes	47	48.3	10	10.4	3	0.84	6	6
The Hartz Mountain Corp.								
LM Animal Farms - Vita Vittles - Hamster Diet	12	10.2-	4	5.8	11	4.9	12	7.8
Wardley's Essentials Tropical Fish Flakes	45	46.5	7	8.7	4	1.1	9	6.6

Ol' Roy Gourmet Dog Food - Chicken Dinner in Gravy	8	12.1		3	4.8		1.5	0.1		82	79.5
Ol' Roy Special T's	14	14.5		5	3.9-		4	1.1		30	22.6
Ol' Roy Dog Food	21	24.8		9	9.7		4	1.8		12	6.4
Special Kitty - Ocean Whitefish + Tuna	13	12.4		2	7.5		1.5	0.57		78	75.3
Special Kitty with Beef in Gravy	8	15.25		4	4.7		1	0.55		82	80.2
Special Kitty Original - Chicken Flavor	34	38.1		11	12.87		4.5	1.4		12	3.9
Manufacture Unknown											
DuMor Chick Starter 24%	24	23.7		2.5	3		4.5	2.3			
DuMor Poultry Grower/Finisher 15%	15	16.1		2.7	4.6		5	2.5			
Main Source Premium Dog Food	26	30.8		15	15.2		4	3.6		12	5
Taste of the Wild-Pacific Stream Canine Formula	25	33.6		15	14.3		3	1.4			

Table 2. Results of Analysis of Animal Feed Products for Micronutrients

Manufacturer	Calcium %	Phosphorous %	Potassium %	Magnesium %	Salt %	Sodium %	Chromium ppm	Copper ppm	Iron ppm	Manganese ppm	Selenium ppm	Zinc ppm
Sample Description												
ADI PET, Inc.												
Waggin Train Chicken Jerky Tenders							0.28					
Beowolf Natural Feeds, Inc.												
Back to Basics Super Premium Dog Food - Chicken	1.8		0.98			0.14						

Blue Seal Feeds, Inc.						
Blue Seal Pork + Barley Flavor For Dogs	2.5	1.8			30.1	156
Blue Seal Adult Cat Formula Turkey, Lamb+Fish	2.1	1.4	0.2		31	206
						181
Canidae Corporation						
Felidae Cat+Kitten Formula Chicken, Turkey, Lamb+Fish	0.49	0.41	0.045			
Dad's Pet Care						
Dad's All Natural Big Dog Chunk	1.1	0.84			0.2	
DelMonte Pet Products						
Kibbles + Bits Brushing Bites	1.3	1.3			225	
Dick VanPatten's Natural Balance Pet Foods						
Natural Balance Ultra Formula Cat Food			0.03			
Farnam Companies, Inc						
Platform Mare+Foal	0.79	0.8			89	0.9
Platform Miniature Horse + Pony Feed	1.25	0.8	0.6		41	0.9
Platform Sport + Performance Horse	1.12	0.8	0.71		63	1.4
Hill's Pet Nutrition, Inc.						
Hill's Science Diet-A dg H Savory Chicken Entrée - Dogs	0.19	0.19				
Hill's Science Diet Advanced Protection Adult Cat	0.97	0.93	0.08		260	0.65
Manna Pro Corporation						

Manna-Pro Select Series Premium Rabbit Feed	0.96	0.6	0.48	0.55	0.22	25	0.085	220
Calf Manna	1.1	0.7						
Manna-Pro Max-E GLO Horse Supplement	1.5	2.2						
MasterFoods USA								
Merrick Ocean Breeze Food For cats + kittens			0.03					
Natural Life Pet Products				0.05				
Natural Life Chicken + Seafood								
Natures Variety								
Instinct Beef Formula For Cats	0.44	0.31						
Purina Naturals Plus Vitamins + minerals Cat Chow	1.3	1.4						
Old Mother Hubbard								
Wellness Turkey Formula For Cats			0.02					
Penn Pak								
Bird Ration Wild Bird Feed	0.58							
PMI Nutrition International								
Nutri-Source Deer Feed For Growth+Maintenance	3	0.8		2				
Nutri-Source Mini Pig Food	1.1	0.95		0.25				
Sunseed Company, INC								
Sunseep Vita + Plus Ferret Formula	3.2	2						

Tetra Sales			
Tetra Min Tropical Flakes	1.4		
Timberwolf Organics, INC.			
Timberwolf Organics Pheasant Herbs Formula - Dog	0.81	1.8	
Tractor Supply			
DuMor Poultry Layer 16%	4.4	0.7	0.2
Producer's Pride Rabbit	1	0.7	0.45
DuMor Goat	1.1	0.6	0.7
DuMor Sheep Formula	1.2	0.6	0.6
Producer's Pride Calf Starter	1	0.8	1.1
Producer's Pride Beef Developer	1.4	0.9	1.1
Producer's Pride Range Cube	2.4	0.7	1
Producer's Pride General Purpose Mineral	14.7	4.5	0.34+
DuMor Show Pig 20%	1	0.8	0.65
Prodweer's Pride Hog Grower	1.46	0.75	0.43
Retriever Hi Protein Dog Food	2.3	1.6	0.71
Vitakraft Pet Products Co., Inc.			
Vitakraft Kiwi Kracker Sticks	0.72	0.36-	
Wal-Mart Stores, Inc.			
Ol' Roy Dog Food	1.9	1.3	782
Special Kitty Original - Chicken Flavor	1.3	1.1	
Manufacture Unknown			
DuMor Chick Starter 24%	1.6	1.1	0.37
DuMor Poultry Grower/Finisher 15%	1.3	0.8	0.25
			0.4

Taste of the Wild-Pacific Stream Canine Formula				0.3					0.6	276
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Table 3. Average and Standard Deviation of Unsatisfactory Animal Feed Products

Manufacturer	Protein %G	Fat %F	Fiber %G	Ash %F	Phosphorous %G	Potassium %G	Salt %F
Sample Description	SD	SD	SD	SD	SD	SD	SD
Beowulf Natural Feeds, Inc							
Back to basics Super Premium							
Dog Food- Chicken	23	18.8-	1.26		5.9	7.3+	0.07
Birdola products							
Birdola Woodpecker Blend			30.6	21.3-	0.00		
Bumble Bee Acquisition Corp., Intl Home Foods							
Figaro Seafood Delight Cat Food			2	1.3-	0.28		
Canidae Corporation							
Felidae Cat+Kitten Formula Chicken,							
Turkey,Lamb+Fish			1	2.3+	0.64	1.9	3.1+
Feathered Friend Beef Suet cake				12	21.1+	1.41	
Great A+P Tea							

Company								
America's Choice Preferred Pet	Treats For Dogs- T-Bone	14	11.2-	0.07				
Gutwein + Co, Inc	Morning Song Wild Finch Food	14	9.5-	0.57	10	4.9-	0.06	
IGA, Incorporated	IGA Chopped Beef Dinner For Dogs + Puppies				1.5	2.6+	0.64	
Manna Pro Corporation	T.N.T Timothy-Alfalfa Chops		1.5	0.73-	0.04			
	Manna-Pro Max E Glo Horse Supplement					9	12.8+	0.04
Natural Life Pet Products	Natural Life Chicken + Seafood				0.5	2+	0.85	
Newman's Own Organics, INC	Newman's Own Turkey + Brown							
	Rice Formula Food		7	6-	0.00			
Pine Tree farms Inc.	Birdwatchers Best Berry Essence Suet					12	17.7+	0.14
Sunseed Company, INC								
Sunseep Vita + Plus Ferret Formula					19	15.4-	1.20	

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