

*The
Connecticut
Agricultural
Experiment
Station,
New Haven*

**Feed Products
and Pet Foods
Inspected 1994**

BY MARY JANE INCORVIA MATTINA

Bulletin 926

June 1995

From January 1, 1994 to December 31, 1994 the Department of Analytical Chemistry analyzed 133 feed samples from 22 different manufacturers. The products were analyzed to determine that the label guarantees are in compliance with State of Connecticut Regulations. Included in the survey are products intended for commercial agricultural operations as well as products intended for household pets. The samples were collected by Alton VanDyke and John Schneider of the Connecticut Department of Agriculture. The analyses were performed at The Connecticut Agricultural Experiment Station by Craig Musante and Mamie Pyles under the supervision of Dr. David Stilwell.

In Table 1 are listed the results of the proximate analysis for each sample as well as the label guarantee for the product. A deficiency in the protein or fat value is indicated by a minus (-) sign next to the "Found%" value, and an excess in fiber is noted by a plus (+) sign in the fiber "Found%" column. A product is determined to be "unsatisfactory" if the found value of a parameter is outside of the value calculated from the label guarantee using the percent analytical variation guidelines recommended by the Association of the American Feed Control Officials. Of the 133 samples, eight were found to be deficient. Two were high in fiber, one was high in ash, and the remaining five were unacceptable in their minor components. For samples marked with an asterisk a deficiency in the micronutrients was determined.

In addition to these mandated feed analyses, this year we also examined sixteen rawhide products, intended for canine dental hygiene, to determine the presence of heavy metals, in particular, arsenic. Both domestic and imported products were included and these are identified in Table 2. Using graphite furnace atomic absorption spectrometry, no arsenic above 0.6 ppm was detected in any of the products. For all but three of the samples arsenic levels were below the detection limit of 0.3 ppm.

Mary Jane Incorvia Mattina
Head, Department of Analytical Chemistry

Table 1. Analytical Results for the 1994 Feed Samples.

	Protein		Fat		Fiber		Moisture	
	Guar%	Found%	Guar%	Found%	Guar%	Found%	Guar%	Found%
AGWAY								
Agway Pro Lab-Rat-Mouse-Hamster 2000	18	19.8	9	11.0	4	2.9	11	11.4
Agway Pro Lab-Rat-Mouse-Hamster 3200	22	21.7	5	5.8	5	4.1		13.1
Country Feeds Recreational Horses 12%								
Complete Feed	12	12.1	2.5	2.4	20	11.7		16.0
Agway Milk-Rite 16	16	16.7	2.5	3.0	12	10.7		13.2
Agway Pro-Lean 16% Sow & Pig Food	16	17.1	3	5.5	5.5	2.7		14.4
Agway Pro-Lean 14% Hog Feed	14	14.2	3	5.3	5	2.2		13.8
Country Feeds Egg Layer	18	18.9	3	2.8	4	3.1		12.5
Country Feeds Game & Turkey Finisher & Maintenance	16	16.7	2.5	2.7	4	2.7		14.3
Country Feeds Chicken Grower	14.5	15.5	3	2.7	4	3.2		13.7
Country Feeds Game & Turkey Grower	21	21.4	3	3.4	4	2.6		13.4
Country Feeds Sheep	14	14.4	2	2.2	18	16.8		13.1
Country Feeds Goat	16	17.4	3	3.9	8	3.1		17.5
Country Feeds Recreational Horses 10%								
Textured Feed	10	10.4	3	4.3	7.5	4.0		15.6
Country Feeds Performance Horses 14%								
Pelleted	14	14.2	4	4.1	10	5.0		14.8
Country Feeds Turkey Starter	28	28.2	3	3.0	4	2.7		14.1
Agway Hi-Energy Lamb Pellets	16.2	16.6	3.5	3.9	9	6.7		13.4
Agway Gro-Right Complete Calf I (Bov)	15	15.7	2	4.5	23	13.6		14.4
Agway Pro-Lean Pig Starter Plus (MS-PT)	18	19.7	4.5	4.2	4.5	2.3		13.8
Agway Crimped Country Oats with Molasses	10	10.1	4	4.8	12.5	4		17.4
Country Feeds Recreational Horse 14%								
Pelleted	14	14.7	3.5	3.6	8.0	5.3		16.0
Country Feeds, Chick Starter	18	18.9	3	3.7	4	2.8		16.1
Ration-Right 16	16	17.0	3	4.6	7	6.6		14.7
Country Feeds Broiler Maker	21	22.2	3	4.6	4	2.4		12.9
BAY MOR PET FEEDS								
Bay Mor Outdoor Gamebird Feed	10	10.3	2	2.5	5	1.6	13	14.6
Bay Mor Pigeon Candy*	16	16.3	10	14.4	5	6.6+	13	12.2
BEST FEEDS & FARM SUPPLIES								
Joy Dog Food Special Meal	26	27.8	10	12.0	4	2.4	10	10.0
BLUE SEAL FEEDS								
Blue Seal Layer Pellets	15	16.1	3	2.9	4	3.0		13.0
Blue Seal Demand Horse Pellet with High Fat	16	17.0	6.5	7.3	6.5	5.6		13.9
Blue Seal Milk Maker 16	16	16.3	2	4.8	10	8.1		14.9
Blue Seal Krunchies Dog Food	21	24.0	8	10.1	4	2.0	12	10.7
Blue Seal Natural 26 Dog Food	26	26.4	10	10.4	4	2.2	12	10.7
Blue Seal Ultra 27 Dog Food	27	28.5	15	15.7	4	1.4	12	10.0
Blue Seal Puppy Food Formula 28	28	28.7	10	9.1	4	2.0	12	9.93
Blue Seal Nip n' Tuck Dog Food	18	18.4	6	7.6	7	3.7	12	11.1
Blue Seal Trotter Complete Horse Pellets	14	14.2	2	4.0	20	12		14.7
Blue Seal Shepard 16 Sheep Feed	16	16.5	2	3.7	10	7.1		14.6
Blue Seal Vintage Gold Extruded Horse Feed	16	16.7	7.5	10.3	7	3.7		10.9

Table 1. Analytical Results for the 1994 Feed Samples.

	Protein		Fat		Fiber		Moisture	
	Guar%	Found%	Guar%	Found%	Guar%	Found%	Guar%	Found%
Blue Seal Turkey Grower Pellets	20	19.8	4.5	4.5	4	3.1		14.1
Blue Seal Breeders Pellets	17	16.6	3	6.4	3.5	2.9		12.7
Blue Seal Milk-Maker 16 Dairy Pellets	16	17.0	2	4.3	10	7.4		13.3
Blue Seal Shepherd 16	16	17.2	2	3.6	10	5.9		12.9
Blue Seal Layer Pellets	15	16.4	3	3.0	4	2.3		12.8
Blue Seal Demand Horse Pellet with High Fat	16	19.4	6.5	6.6	6.5	5.0		15.1
CARGILL, NUTRENA FEED DIVISION								
Nutrena Vitality 14 Horse Feed Pellets	14	15.3	3	4.0	6	6.3		14.3
Nutrena Horse Kwik Ration	14	14.6	2	3.3	20	13.8		13.1
Nutrena Egg Producer Pellets	16	16.1	3	3.6	4.5	4.1		12.7
Nutrena Excel 16 Dairy Food	16	16.1	2.5	3.7	10	9.4		12.7
Nutrena Pig & Hog Feed	15	15.8	2.5	3.6	7	4.8		14.7
Nutrena Vitality Gold 14% Horse Feed	14	14.6	9	10.9	8	4.1		11.1
Nutrena Meat Bird Grower	21	22.1	3.5	3.8	5	4.2		13.0
Nutrena Turkey/Gamebird Grower	22	23.1	3	3.9	6	4.4		13.2
Nutrena 16% Rabbit Pellets	16	16.2	2.5	2.5	18	14.6		12.9
Nutrena Top Lamb 16 Feed	16	16.6	2	4.0	10	10.2		13.1
Nutrena Triumph 10 Sweet Feed	10	12.4	2.5	3.9	12	6.4		16.9
Cargill Quality Plus Value Pack Hi-Pro Dog Food	26	28.7	8	14.8	4.5	2.9	12	13.0
Nutrena Original Chunks Dog Food	21	23.1	9	8.1	3.5	2.5	11.5	12.2
Nutrena 27% Hi-Pro Dog Food	27	28.2	10	13.2	3.5	2.4	11.5	10.9
CENTRAL CONNECTICUT COOP FARMERS ASSOC.								
Honest Brand 20% Hi-Soluble Pellets	20	20.2	3	5.3	8.5	4.9		14.0
Honest Brand 17% Cage Layer	17	18.8	3.5	4.4	4	3.1		11.8
HEINOLD FEEDS								
Square Deal 40% Hog Supplement	40	40.1	2.5	2.8	7	5.2		12.6
Square Deal Show Formula 15-20 Rabbit Pellets	15	17.5	3	4.8	20	15.8		10.8
Square Deal 16% Sheep "Start to Show"	16	17.4	3	4.5	8	4.9		14.1
Square Deal Family Formula Rabbit Pellets	17	22.2	2.5	5.2	17	14.3		10.6
K&L FEED								
K&L Sprinter 14% Horse Ration	14	15.3	3	4.3	8	5.7		14.6
K&L Energizer Horse Feed Pellets	11.5	13.9	4.5	5.1	8	8.2		14.6
K&L 16% Dairy Ration Pellets	16	16.5	3	6.1	8	6.5		14.8
K&L Pig Grower Pellets	15	17.0	3	3.0	4	4.3		14.2
K&L 16% Layer Pellets	16	17.4	3	5.5	4	3.9		12.3
K&L Beef Feed Pellets	14	13.9	5	5.4	6.5	5.5		14.0
K&L Lamb & Sheep 16% with Ammonium Chloride*	16	18.1	3	6.8	8	6.7		13.4
K&L Pig Finisher Pellets	13	14.7	3	3.4	4	3.6		13.3
K&L Cornmeal	8.6	8.3	3.6	4.9	2.2	1.9		13.8
K&L Duck Developer Pellets	15	18.0	3	5.1	4	3.9		12.9
K&L 18% Calf Starter Medicated with Bovetec	18	19.2	3	7.1	8	5.9		12.9
K&L feed unknown variety	22.6	23.3	7	7.2	3.3	3.5		13.8
K&L 20% Dairy Ration Pellets	20	21.2	4.4	5.3	6.5	6.2		13.9

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	Protein		Fat		Fiber		Moisture		
	Guar%	Found%	Guar%	Found%	Guar%	Found%	Guar%	Found%	
K&L Heifer Grower Pellets*	16	16.5	5	5.0	6.6	6.2		13.6	
K&L Beef Feed Pellets, 14%	13.9	13.8	4.9	6.9	6.6	5.7		15.5	
K&L Layer 16%	15.8	16.1	5	5.5	3.7	2.6		12.3	
K&L Grower	14.4	14.9	3.4	3.6	4.5	2.9		14.9	
K&L Chick Grower	13.5	15.2	3.0	4.6	4.5	3.1		13.7	
K&L Goat Pellets, 13%	13	13.5	3	4.1	9	6.1		15.1	
K&L Turkey Grower Pellets*	18	21.7	3	5.9	4	5.6+		14.9	
K&L Chick Starter Crumbles	19.5	20.4	3	3.2	4	3.4		12.8	
KAL KAN FOODS, INC.									
Pedigree Mealtime Small Crunchy Bits Dog Food	21	22.3	8	7.7	4	2.0	12	10.9	
KELLY FOODS CORP.									
Bil-Jac Cat Food	31	32.9	18	18.4	3.5	1.8	10	10.3	
Bil-Jac Lite Dog Food	17	19.0	10	11.3	5	1.9	10	10.2	
Bil-Jac Puppy Food	28	30.6	18	17.0	4	1.9	10	8.8	
MANNA PRO CORP.									
Manna Pro Calf Manna	25	27.5	3	6.9	6	3.5		13.7	
NELSON & SONS, INC.									
Silver Cup Soft Moist Fish Feed S-M Starter	48	54.7	16	15.5	3	0.5	18	12.4	
Silver Cup Soft Moist Fish Feed S-M #1 Fry	48	55.4	16	16.4	3	0.6	18	13.0	
Silver Cup Soft Moist Fish Feed S-M #2 Fry	48	54.8	16	14.8	3	0.6	18	10.8	
NUTRO PRODUCTS, INC.									
Nutro Max Cat Adult*	32	34.8	18	17.5	2	1.2	10	9.9	
Nutro Max Kibble Dog Food	26	26.7	16	16.6	4	1.4	10	9.6	
Nutro Max Special Dog Food*	16	17.4	8	10.2	4.5	2.4	10	10.2	
Nutro Max Puppy	28	28.7	17	15.4	4	2.3	10	8.7	
OHIO BLENDERS, INC.									
Big Ohio 17% Dehydrated Alfalfa	17	17.4	1.5	2.1	27	23.3		12.6	
PRO-PET, INC.									
Big Red Producers Choice 18 Rabbit Food	18	18.5	2	3.1	15	13.0		10.6	
Pro-Pet Supra-Blend Rabbit Diet	18	19.0	2	2.8	16	14.0		11.0	
Big Red Rabbit's Choice	15	15.4	2	2.7	18	16.0		10.2	
Big Red Guinea Pig Food	18	18.0	4	4.9	15	14.0		10.3	
PRO-VISIONS PET SPECIALTY ENTERPRISES									
Purina Dealers Pride Economy Formula Dog Food	18	18.9	6	7.5	8	4.1	12	11.9	
PURINA MILLS INC.									
Purina Lean Generation 52 (Med), CPSTZ, Swine	19	25.6	4	5.0	5	2.9		13.1	
Purina Layer	16	17.1	2.5	2.7	7	7.0		11.8	

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	Protein		Fat		Fiber		Moisture	
	Guar%	Found%	Guar%	Found%	Guar%	Found%	Guar%	Found%
Purina Strategy Professional Formula GX								
Horse Feed	14	15.7	6	6.6	8	3.4		15.1
Purina New England Pride Horse Pellet 14	14	16.3	2	2.5	25	14.3		14.4
Purina Laying Ration Checkers Home								
Grown 6514*	16	16.4	2	3.2	9	6.4		13.5
Purina Test Cow (B) 20%	20	20.1	3	5.9	6.5	4.7		13.3
Purina Trout Chow	40	44.0	10	13.4	5	2.8		8.38
RALSTON PURINA CO.								
Purina Pro Plan Cat Food Lite Formula	32	33.0	6.5	11.4	5	2.2	12	9.8
Pro Vision Pro-Plan Performance Formula								
Dog Food	30	32.6	20	20.6	3	1.4	12	8.8
Pro Visions Pro-Plan Turkey & Barley								
Formula for Dogs	25	28.0	15	16.9	3	1.7	12	9.3
Purina Cat Chow	31.5	32.8	8	7.7	4.5	1.6	12	11.5
THE IAMS CO.								
Iams Less Active for Dogs	22	24.1	12	13.6	5	1.9	10	8.38
Iams Natural Lamb & Rice for Cats	32	32.4	21	20.2	3	1.0	10	8.6
Eukanuba Puppy Food	32	32.4	21	19.6	4	1.6	10	8.28
Iams Natural Lamb Meal & Rice Formula								
for Puppies	26	26.3	14	16.1	5	1.2	10	8.4
VENTURA GRAIN CO.								
Every-Day Rabbit Pellets	17	17.5	3	3.5	18	12.1		15.2
TDI 16 Horse Feed	16	19.5	5	6.6	6	5.0		14.5
Everyday Complete Layer 16	16	16.6	3	5.0	4.5	2.5		13.5
WAUREGAN GRAIN CO.								
Wauregan Finisher Pellet	18	18.4	4.5	6.7	4	2.0		13.7
Wauregan 16% Pork Maker Plus	16	16.2	3	4.1	4.5	3.3		15.0
Wauregan Equine's Choice Complete Horse								
Food	14	14.4	2.5	2.6	20	14.8		15.3
Wauregan Milker's Choice 1680*								
Wauregan Turkey-Game Bird Grower	22	22.3	3.5	3.5	4.5	2.3		14.4
Wauregan Test Cow 2490	24	24.3	3.5	6.5	6	6.5		14.8
Wauregan Trail Ride Horse Feed Pellets	12	11.7	3	3.1	9	6.4		14.8
Wauregan Performance Plus Energy High-Fat								
Horse Feed	16	15.9	6.5	6.4	6.5	2.1		12.4
Wauregan Rabbit Pellet 16	16	17.1	3	3.1	18	14.7		14.8
Wauregan Rabbit Pellets	20	21.2	2.5	2.5	18	11.6		15.4
Wauregan Sheep & Goat	18	20.2	3	3.1	7	4.2		15.3
ZEIGLER BROS. INC.								
CT High Performance 42% 3/16" Fish Feed	42	42.0	12	14.0	4	2.7		13.8
CT Brood Fish Feed	45	47.6	10	10.6	4	2.4		12.0

Table 2. Canine Chews Analyzed for Heavy Metals.

Manufacturer	Product	Country of Origin
ALFA PET, INC.	Alfa Pet Small Bone	Thailand
ASSOCIATED PET SUPPLY DISTRIBUTORS, INC.	Peterest Beef Hide American Donut	USA
IMS TRADING CORP.	Cadet 6.5" Pressed Bone	Thailand
	Cadet White Rawhide Twisted Sticks	Thailand
	10-11" rawhide bone	Paraguay
HARTZ MOUNTAIN	Natural Rawhide 5" Chew Bone	Columbia
JTL ENTERPRISES, INC.	Rawhide Mini Bones, 4", 5-pack	Taiwan
OLD MOTHER HUBBARD DOG FOOD CO.	Old Mother Hubbard Rawhide Chew Flips	Columbia
	Old Mother Hubbard Ass't Rawhide Chew Flips	Mexico
PET PRODUCTS, INC.	Dog's Best Cattle Chews	Brazil
PETRAPPOR, INC.	Petrappor Beefeaters Chew	Columbia
PROVIDENCE PLANTATIONS TRADING CO.	Rawhide Munchy Chews	Thailand
SNUFF'S NO BRAND NAME,	12" x 3/4" rawhide chewstick	USA
THE HARTZ MOUNTAIN CORP.	Hartz Natural Rawhide 8 Yummie Chew Bars	Thailand
	Hartz Natural Chew'm	Mexico
UNKNOWN REGISTRANT/ MFG NO BRAND NAME,	14" rawhide bone	Brazil



The Connecticut Agricultural Experiment Station, founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504.

ISSN 0097-0905