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Analysis of  
Agricultural Feeds  
and Pet Foods  
1997

BY MARY JANE INCORVIA MATTINA

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From January 1, 1997 to December 31, 1997 the Department of Analytical Chemistry analyzed eighty-six samples of feeding stuffs from twelve 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 by Craig Musante and Mamie Pyles under the supervision of Dr. David Stilwell.

In the Table are listed the label guarantee for the macronutrients in the product, the results of the proximate analysis for each sample, and results of the analyses for micronutrients. Values are given in percent unless otherwise noted. A deficiency in a guaranteed ingredient is indicated by a minus (-) sign next to the parameter. An excess of a substance is indicated by a plus (+) sign next to the value. A product is found 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 eighty-six samples analyzed, fifteen were found to be deficient in one or more macronutrients (17.4%) and ten were unsatisfactory in one or more micronutrients (11.6%).

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Table 1. Results of Analysis of Feeding Stuffs for Nutrient Content. The following micronutrients were tested: Ca=calcium; Cu=copper; P=phosphorus; Na=sodium; NaCl=sodium chloride; Se=selenium; and Zn=zinc.

Manufacturer/product	Protein %G	Fat %F	Fiber %G	Moisture %G	Micronutrients			
<b>AGWAY/COUNTRY FOODS DIV.</b>								
Agway Soft Wheat Bran	12.5	14.2	3	3.4	12	10.1	8	
<b>BERNARDSTON FEED MILL</b>								
Agway Dairy Mash	22.5	22.7	6.2	6.8	5.8	4.6	9.63	Ca 1.7; Se 0.7ppm; P 0.97
Agway Pro Right RC22 Pellets	22	22.1	3	4.2	6.5	4.5	--	Ca 1.8; Se 0.6ppm; P 0.61
Agway Grst Meal	17.5	19.1	4	3.8	8.4	7.5	--	Ca 1.27; P 0.57; Se 2.1ppm
White Hi Bunk Mix 19:9:5:4:4:20	19.9	21.3	5.4	6.3	4.2	3.8	9.8	
<b>BLUE SEAL FEEDS</b>								
Blue Seal Demand Horse Pellet with High Fat	16	15.8	6.5	6.8	6.5	5.6	--	Ca 0.85; Cu 30ppm; Se 0.6ppm; P 0.87; Zn 101ppm
Blue Seal Strider Horse Feed	11	11.9	2.5	3	7	5.7	9	Ca 1.07; Cu 32ppm; Se 0.5ppm; P 0.83; Zn 100ppm
Blue Seal Contender Horse Feed Pellets	16	15.9	3	3.3	7.5	6.3	--	Ca 0.83; Cu 54ppm; Se 0.6ppm; P 0.89; Zn 112ppm
Blue Seal Natural '26' Dog Food	26	26	10	12.3	4	2.8	7.8	
Blue Seal Trotter Complete Horse Feed	14	15.3	2	2.5	20	11.2	--	Ca 1.2; Cu 1ppm; Se 0.5ppm; P 0.88; Zn 82ppm
Blue Seal Trotter Complete Horse Feed	14	12.8	10	20.2	13	9.4	--	
Blue Seal Soring Maker	15	15	2.5	3	4	2.8	--	Ca 3.4; NaCl 0.28; P 0.55
Blue Seal Layer Pellets	20	19.8	4.5	5	4	3.1	--	Ca 1.2; NaCl 0.33; P 0.84
Blue Seal Turkey Grower	15	15.1	3	3.1	7	5.4	--	Ca 0.74; NaCl 0.38; Se 0.4ppm; P 0.63; Zn 74ppm
Blue Seal Pig & Sow Pellets	16	16.9	2.5	3.2	18	14.1	--	Ca 0.89; NaCl 0.36; P 0.7
Blue Seal Bunny 16 Pellets	16	17	2	2.6	10	7.6	--	Ca 1.2; NaCl 0.76; P 0.99; Se 0.5ppm
Blue Seal Shepherd 16	16	16.2	6.5	6.5	6.5	5	--	Ca 0.89; Cu 31ppm; Se 0.4ppm; P 0.83; Zn 102ppm
Blue Seal Demand Horse Pellets	21	21.5	8	7.9	4	2.1	12	Ca 0.9; Cu 43ppm; Se 0.67ppm; P 0.84; Zn 109ppm
Blue Seal Krunchies Dog Food	14.5	17	4.5	6	12	8.8	--	
Blue Seal Vintage Senior Extruded Horse Food	26	26	10	11.6	4	2.6	8.3	
Blue Seal Natural 26 Dog Food	11	11.7	2.5	2.8	7	5.9	--	Ca 0.92; Cu 35ppm; Se 0.4ppm; P 0.83; Zn 111ppm
Blue Seal Strider Horse Feed Pellets	14	14.2	2	2.7	20	11.2	--	Ca 0.98; Cu 28ppm; Se 0.4ppm; P 0.89; Zn 81ppm
Blue Seal Trotter Complete Pellets	14	15.8	3	3.4	7.5	6.1	--	Ca 0.89; Cu 31ppm; Se 0.6ppm; P 0.91; Zn 106ppm
Blue Seal Contender Horse Feed Pellets	16	14.9	2.5	4.1	12.5	8.8	--	Ca 1.1; NaCl 0.38; P 0.89;
Blue Seal Deer Pellets	7	9.3	0.3	0.72	22	15.4	--	
Blue Seal Pelleted Beet Pulp	7	25-	15	16	4	2.2	12	Ca 0.86; NaCl 0.61; Na 0.24; Se 0.5ppm; P 0.78; Zn 62ppm
Blue Seal Ultra27' Dog Food	27	25-	15	16	4	2.2	12	
<b>CARGILL, NUTRENA DIV</b>								
Nutrena Horse Kwik Complete	14	15.3	2	2.1	20	15.1	--	Ca 1.1; Cu 26ppm; Se 0.6ppm; P 0.86; Zn 128ppm
Nutrena Triumph 12 Horse Pellets	12	13.4	2.5	2.8	10	9.5	--	Ca 1.1; Cu 19ppm; Se 0.5ppm; P 0.86; Zn 128ppm
Nutrena Egg Producer Pellets (ABF)	22	15.3-	3	2.8	4.5	3.4	--	Ca 3.6; NaCl 0.74; P 0.64;
Nutrena Turkey/Gamebird Grower (ABF)	16	22.6	3	3.4	6	5.3	--	Ca 0.8; NaCl 0.25; P 1.2; Na 0.1-
Nutrena Top Lamb 16 Food (ABF)(No Added Copper)	14	16.9	2	3.4	11	11.5	--	Ca 1.1; NaCl 0.63; P 0.71; Na 0.25
Nutrena Life Design Complete (ABF) Horse Food	14	16.7	6	5.8	8	6.5	--	Ca 1.2; Cu 38ppm; Se 0.7ppm; P 0.89; Zn 125ppm
Nutrena Senior Horse Feed	14	14.3	5	5.6	16	10.3	--	Ca 0.88; Cu 16ppm; Se 0.6ppm; P 0.86; Zn 75ppm-
Nutrena Excel 16 Dairy Feed (ABF)	16	16.9	2.5	2.4	10	10.3	--	Ca 1.6+; NaCl 1.3; K 1; Se 0.9ppm; P 0.83; Na 0.54
Nutrena Pig & Hog Feed (ABF)	15	14.6	2.5	2.1-	7	4.6	--	Ca 0.86; NaCl 0.61; Na 0.24; Se 0.5ppm; P 0.78; Zn 62ppm
Nutrena Scratch Feed	8	8.7	3	3.3	5.5	4.5	--	Ca 0.86; NaCl 0.61; Na 0.24; Se 0.5ppm; P 0.78; Zn 62ppm

Table 1. Results of Analysis of Feeding Stuffs for Nutrient Content (continued). The following micronutrients were tested: Ca=calcium; Cu=copper; P=phosphorus; Na=sodium; NaCl=sodium chloride; Se=selenium; and Zn=zinc.

Manufacturer/product	Protein		Fat		Fiber		Moisture		Micronutrients
	%G	%F	%G	%F	%G	%F	%G	%F	
Nutrena 16% Rabbit Pellets (ABF)	16	17.1	2.5	3.4	16	12.8	--	8.92	Ca 1.1; NaCl 0.46; P 0.89; Na 0.18
Nutrena Original Chunks Dog Food	21	21.6	8.6	9.4	3.5	3.4	11.5	8.4	
<b>CENTRAL CONNECTICUT COOP</b>									
Central CoOp 16% Floor & Cage Layer	16	15.9	3.5	3.8	4	3.1	--	7.56	
CoOp M Special Mix Custom Blend		20.6		3.91		3.69		8.24	
Central Connecticut CoOp 16% Treated Pellets	16	16.5	3	3	8.5	8.1	--	8.39	
Central Connecticut CoOp 20% Treated Pellets	20	19.6	3	5.2	8.5	5.5	--	7.71	
<b>CHURCH &amp; DWIGHT CO., INC.</b>									
Arm & Hammer Megalac Rumen Bypass Fat	0		82.5	87	0				Ca 9.7
<b>K&amp;L FEED MILL</b>									
K&L Dairy 16	16	18.6	0	5.83	0	8.14	--	7.49	
K&L Mix - Dairy		33.9		5.04		5.77		7.39	
K&L Guinea Hen Grower		17.3		7.19		2.9		8.46	
K&L Dairy 20%		19.9		5.61		5.54		8.52	
K&L Layer 18%	18	18.2	3.6	4.5	3.2	3.8	--	8.54	Ca 4.7; P 0.7
<b>LANGS DEHY LTD.</b>									
Langs Dehy Ltd. Dehydrated Alfalfa Pellets	16	12.8-		2.06	27	28.92+	9	8.5	
<b>OHIO PET FOODS, INC</b>									
Master & Pet Puppy Food	28	28.7	10	11.9	4	3	12	6.3	
Master Plus Formula Dog Food	26	26.8	10	9.8	4	3		8.1	
<b>PURINA MILLS, INC.</b>									
Purina Layena	16	18	2.5	2.9	7	4.2	--	8.42	Ca 3.74; NaCl 0.50; P 0.74
Purina Hog Grower OTC 50	16	15.9	2.5	4.2	5	3.7	--	8.64	Ca 0.79; NaCl 0.78; Se 0.3ppm; P 0.79; Zn 103ppm
Purina Pork Finisher	12	12.5	2.5	3.6	7	6.9	--	9.18	
Purina Start & Grow	17	19.4	3	5.6	5	3.7	--	8.95	
Purina Lamb Developer W/O	12	12.5	1.5	1.7	18	12.3	--	8.76	Ca 0.59; NaCl 0.53; P 0.44; Se 0.24ppm
Purina Deer Chow	16	14.5-	2	3.1	15	6.5	--	9.04	Ca 1.2; NaCl 3; P 1.2
Purina Duck Grower W/O	16	12.5	3	3.4	5	2.6	--	8.97	Ca 0.84; NaCl 0.4; P 0.79
Purina Animax	28	27.4	3	3.4	6	3.6	--	8.14	
Purina Turkey	16	16.8	3.5	4.7	4.5	4.2	--	8.46	Ca 0.94; NaCl 0.6; P 0.61
Purina Rabbit Chow	16	15.6	1.5	2.6	20	15.4	--	8.43	ash 1.5
Purina Pro-11 Breeder	11	12	2	2.3	3	2.4	--	10.9	
Purina Game Bird Flight Conditioner	19	17.8-	2	3.4	12	5.9	--	8.93	Ca 0.89; Cu 53ppm; Se 0.7ppm; P 0.86; Zn 249ppm
Purina Pure-Pride 200	14	13.9	2.5	2.3	8	6.1	--	9.25	Ca 1; Cu 21ppm; Se 0.4ppm; P 0.54; Zn 97ppm-
Purina Pure-Pride 100	10	13.9	2.5	2.5	12+	24.9	--	8.33	

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Manufacturer/product	Protein		Fat		Fiber		Moisture		Micronutrients
	%G	%F	%G	%F	%G	%F	%G	%F	
<b>VENTURA GRAIN CO.</b>									
Every Day Formula 1100 Horse Pellets	11	11.7	3	2.8	8	6	--	--	9.76
Every Day Formula 1400 Horse Pellets	14	13.6	2.5	2.3	20	11.9	--	--	10.2
Every Day 16% Dairy	16	15.6	3.5	4.2	9	8.5	--	--	9.37
Every Day Complete Layer 16	16	15.8	3	3.4	4.5	2.4	--	--	9.79
TDI-10 Supplement (For Horses)	10	11.4	5	6	5	5.4	--	--	8.2
TDI-16 Horse Feed	16	17	5	4.5	6	4.1	--	--	10.4
Every Day Rabbit Pellets	17	16.4 -	3	3.4	18	11.5	--	--	9.3
Every Day 16% Hi-Energy Lamb Pellets	16	17.2	3.75	5.3	7.5	6.2	--	--	10.3
Every Day Beef Pellets	14	15.4	4	4	7.5	8.8+	--	--	10.6
<b>WAUREGAN GRAIN CO.</b>									
Wauregan Pace-Setter Horse Fd Stableman's Choice	14	14	14.1	3	1.8 -	9	8.7	16.2	Ca 0.64; Cu 20ppm-; Se 0.3ppm; P 0.63; Zn 77ppm-
Wauregan 16% Pork Maker Plus	16	17	3	2.8-	4.5	5.2-	--	10.9	
Wauregan Layer	15	15.8	3	3.7	4	3.5	--	9.56	Ca 4; NaCl 0.2; P 0.53
Wauregan Pace-Setter Horse Feed-Trial Ride	12	12	12.8	3.5	3.5	12.5	13.6	8.32	Ca 0.53; Cu 37ppm; Se 0.4ppm; P 0.64; Zn 117ppm
Wauregan Rabbit Pellet-16	16	15.8	3	3.3	18	17.9	--	7.25	
Wauregan Milkers Choice 1680	16	17.3	3	3.8+	8	10.8	--	7.79	Ca 0.92; magnesium 0.45; sulfur 0.31; P 0.88; K 0.93
Wauregan Mustang 14% Horse Pellet	14	14.7	3	3.2	12	13.8+	--	7.6	Ca 0.35; Cu 32ppm; Se 0.36ppm; P 0.82; Zn 106ppm
Wauregan Pace-Setter Horse Food-Equine Complete	14	14	3	2.9	16	18.5+	12	8	Ca 1-; Cu 42ppm; Se 0.6ppm; P 0.74; Zn 138ppm
Wauregan Dog Food	21	21.8	8	7.3	4	3.2	--	8.44	
Wauregan Sheep & Goat	18	20.1	3	3.1	7	10.1+	--	9.46	
Wauregan Heifer-Grower Pellets (Medicated)	16	16.5	3	3.2	8	9.7+	--	10.3	
Wauregan Turkey-Game Bird Grower	22	22.4	3.5	3.4	4.5	4.2	--	10.9	

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