1999 ANNUAL REPORT ON COMMERCIAL FEEDS & ANIMAL REMEDIES

January 1, 1999 to December 31, 1999

SECRETARY OF AGRICULTURE – LARRY GABRIEL

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QUESTIONS

Questions regarding this publication may be directed to the Department of Agriculture at 605-773-4432. The Department of Agriculture has also established a home page on the internet, which contains a copy of the feed regulations, license application and feed tonnage inspection fee report forms, and e-mail addresses for Department personnel. The address for that web-site is:

http://www.state.sd.us/state/executive/doa/doa.html

1999 COMMERCIAL FEED & ANIMAL REMEDY ANNUAL REPORT

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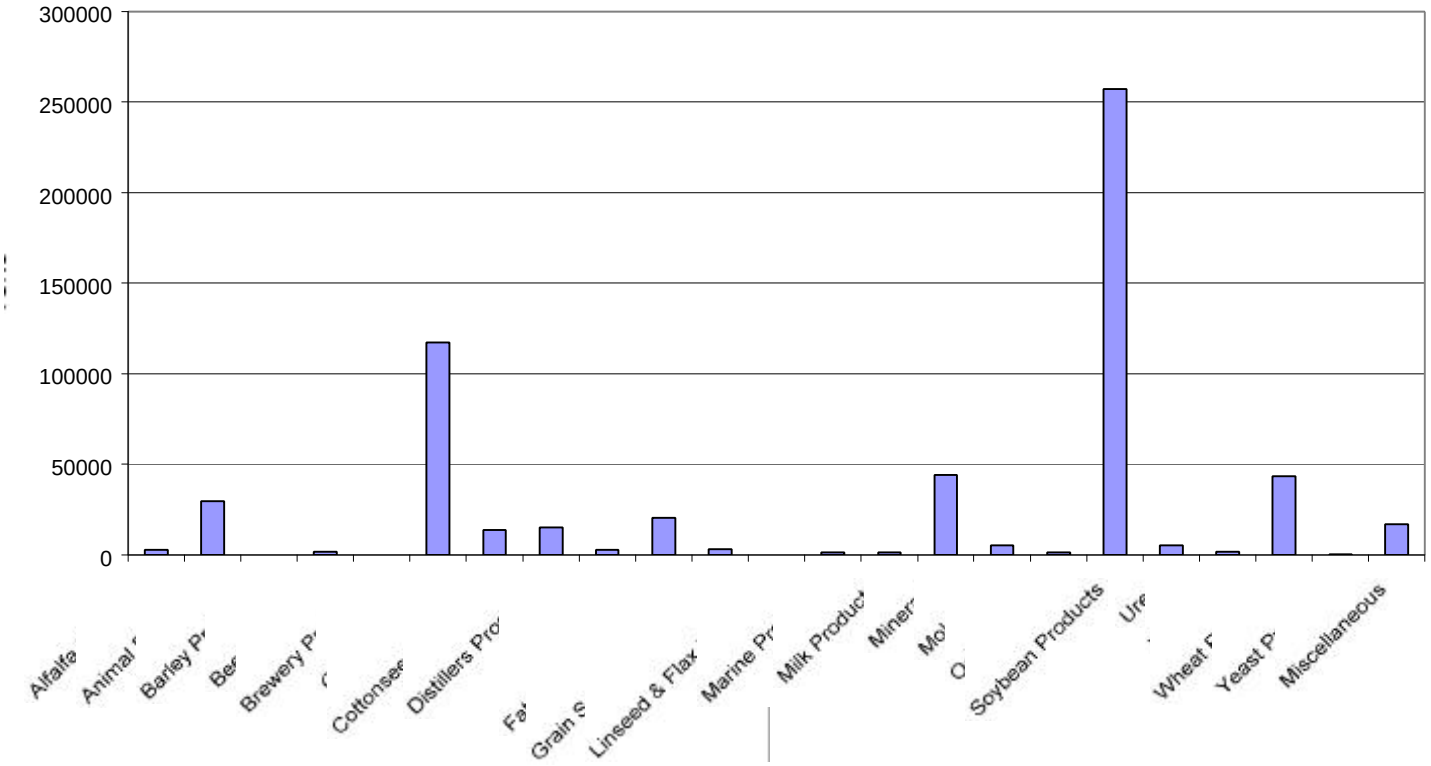
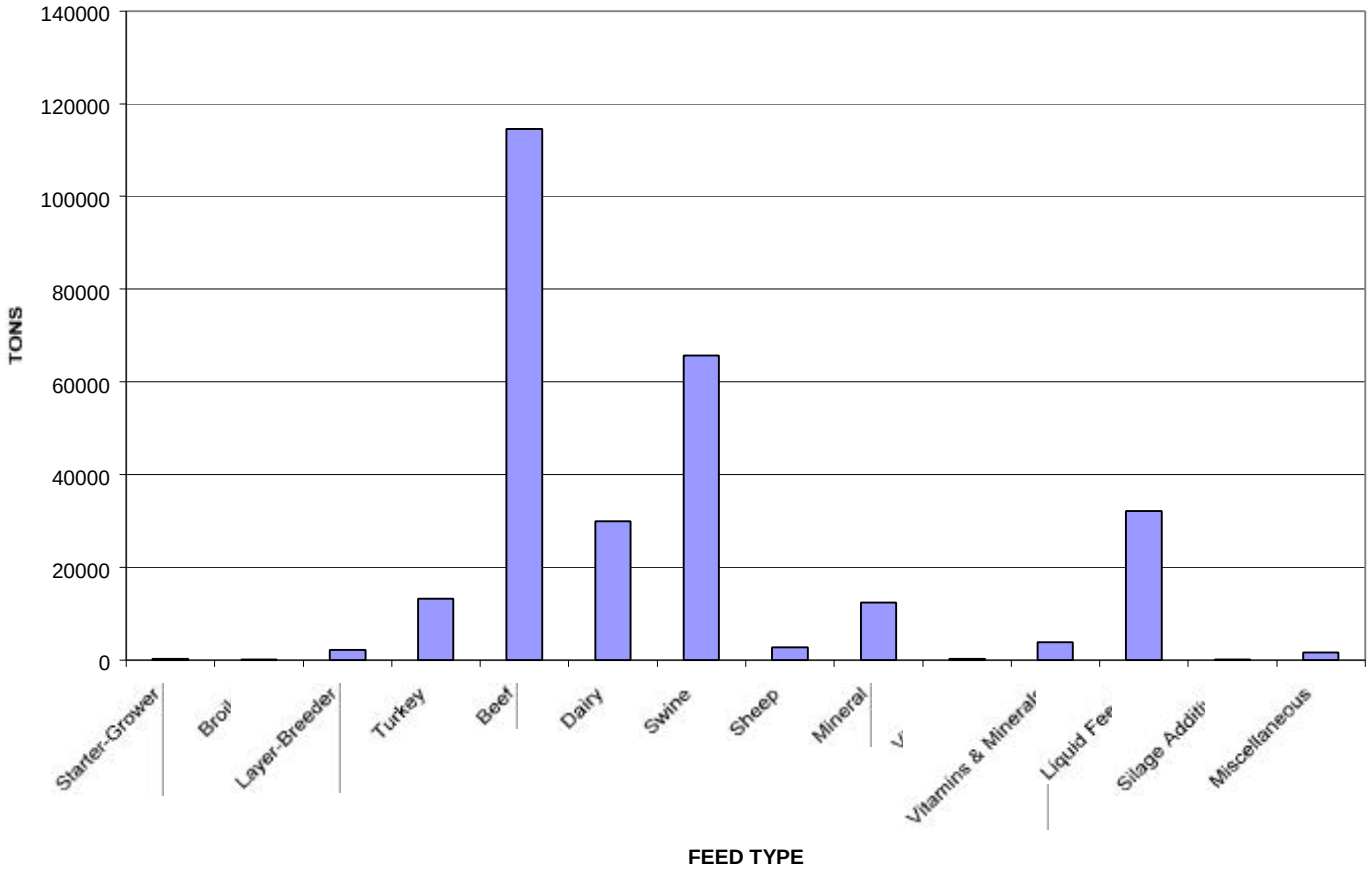
In the last few years we have added several sections to our Annual Report on Commercial Feeds and Animal Remedies. Although many of the pages aren't numbered, the individual sections should not be hard to find. The sections are found in the book in the order described below:

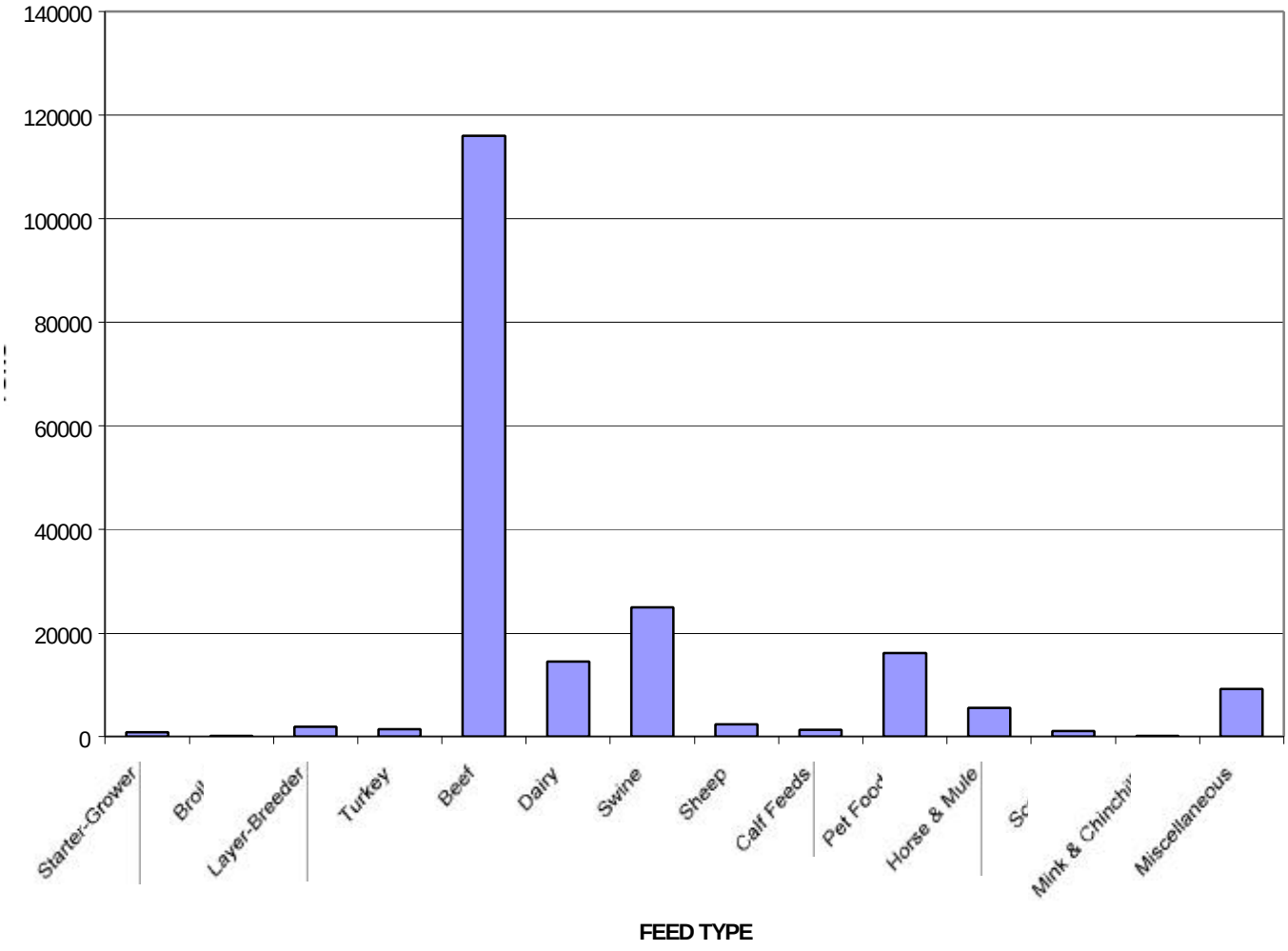
1999 TOTAL INGREDIENTS
585,977 TONS



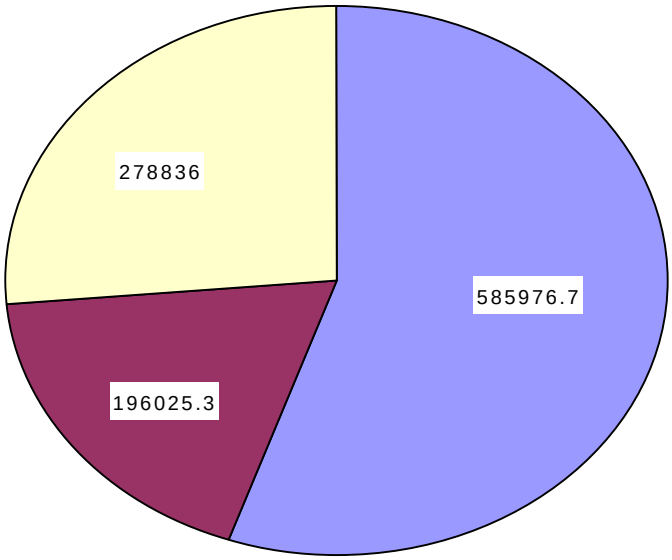
1999 SUPPLEMENT FEED
278,836 TONS



1999 COMPLETE FEED
196,025 TONS



1999 FEED TONNAGE
1,060,838 TONS



SOUTH DAKOTA DEPARTMENT OF AGRICULTURE
COMMERCIAL FEED TONNAGE REPORT
1999 TOTAL – 1,060,838 TONS

FORMULA FEED	TONS COMPLETE	TONS SUPPLEMENT
Starter-Grower	873.1	213.5
Broiler	159.4	91.2
Layer-Breeder	1951.7	2202.6
Turkey	1481.7	13156.5
Beef	116025.2	114611.0
Dairy	14475.5	29994.2
Swine	25022.4	65669.1
Sheep	2414.9	2677.8
Mineral		12337.0
Vitamins		248.2
Vitamins & Minerals		3833.5
Calf Feeds	1360.8	
Pet Foods	16104.5	
Horse & Mule	5579.6	
Scratch	1140.6	
Liquid Feeds		32137.7
Mink & Chinchilla	168.0	
Silage Additive		78.1
Miscellaneous	9268.6	1586.1
TOTAL FORMULA FEED	**196025.3**	**278836.0**

FEED INGREDIENTS	TONS
Alfalfa Products	2637.1
Animal Products	29615.3
Bakery Products	
Barley Products	31.0
Beet Products	1735.2
Brewery Products	63.0
Citrus Products	
Corn Products	117195.4
Cottonseed Products	13640.7
Distillers Products	14955.9
Drugs	2653.8
Fats & Oils Products	20408.4
Grain Sorghum Products	3244.4
Lespedeza Products	
Linseed & Flax Products	69.0
Marine Products	1200.9
Milk Products	1157.9
Minerals	44137.7
Molasses	5115.1
Oat Products	1322.8
Peanut Products	
Rice Products	
Rye Products	
Soybean Products	257165.7
Urea	5425.9
Vitamins	1780.1
Wheat Products	43165.7
Yeast Products	292.5
Miscellaneous	16749.5
TOTAL INGREDIENTS	**585976.7**

COMMERCIAL FEEDS SAMPLED -- 1999
LIST OF ANALYTES

NUTRIENT ANALYTES	NUMBER OF SAMPLES
Crude Protein	338
Calcium	170
Vitamin A	151
Salt	143
Crude Fiber	124
Crude Fat	90
Phosphorus	76
Moisture	63
Equivalent Crude Protein	47
Selenium	43
Lysine	39
Potassium	33
Ash	27
Iodine	24
Methionine	15
Acid Detergent Fiber (ADF)	13
Magnesium	11
Sodium	11
Total Sugars as Invert (TSI)	9
Taurine	8
Linoleic Acid	7
Tryptophan	6
Linolenic Acid	3
Omege 3 Fatty Acids	3
Omega 6 Fatty Acids	3
Threonine	3
Chloride	2
Copper	2
Zinc	3
Amino Acids (complete screen)	1
Glycine	1
Lactose	1
Nitrogen Free Extract	1
Sulfur	1
Total Nitrogen	1

DRUG ANALYTES	
Lasalocid	49
Chlortetracycline	33
Monensin	24
Amprolium	12
Tylosin	10
Oxytetracycline	9
Decoquinate	7
Sulfamethazine	6
Carbadox	5
Sulfathiazole	2
Roxarsone	1
Tetrachlorvinphos	1

OTHER ANALYTES	
Noxious Weed Seeds	28

Sample Count Report

Feeds Sampled From 01/01/1999 To 12/31/1999

Manufacturer and Location			Sample	Passed	Not
8 In 1 Pet Products, Inc.	Hauppauge	NY	1	0	1
ADM Processing Company	Decatur	IL	1	1	0
Ag Processing Inc	Dawson	MN	3	3	0
Ag Processing Inc	Omaha	NE	1	1	0
Agra Partners LTD	W.Des Moines	IA	2	2	0
Alfalfa Feeds Inc	DeSmet	SD	1	0	1
All Natural Animal Products	Corvallis	OR	1	1	0
Allied Foods Inc.	Atlanta	GA	1	1	0
Alpharma Inc	Fort Lee	NJ	3	3	0
American Crystal Sugar Company	Moorhead	MN	1	1	0
American Protein Corporation	Lytton	IA	4	4	0
American Stockman/IMC Salt Inc.	Overland Park	KS	1	1	0
Arco Dehydrating Company	Lake Park	IA	2	2	0
Atkinson Feed & Supply	Atkinson	NE	1	1	0
Barnes Hay & Feed Company	Gayville	SD	1	1	0
Blue Bonnett Milling Co.	Ardmore	OK	1	0	1
Burke Feed Mill	Burke	SD	1	1	0
C & S Products Company	Fort Dodge	IA	4	4	0
C and G Products	Carroll	IA	1	0	1
Cammack Ranch Supply	Union Center	SD	5	4	1
Cargill Inc	Minneapolis	MN	1	1	0
Cargill-Nutrena Feed Div	Minneapolis	MN	8	6	2
Cargill-Nutrena Feed Div	Sterling	CO	1	1	0
Cattleman's Choice Loomix	Johnstown	CO	2	0	2
Central Bi-Products	Redwood Falls	MN	5	5	0
Central Dakota Grain	Timber Lake	SD	1	1	0
Central Tractor Farm and Country	Minneapolis	MN	2	2	0
Central Tractor Farm and Country	Des Moines	IA	1	1	0
Consolidated Nutrition L.C.	Omaha	NE	10	6	4
Consumers Supply Corp	Storm Lake	IA	1	1	0
Consumers Supply Dist Company	Sioux City	IA	3	3	0
Country General	Grand Island	NE	3	3	0
D and D Suet Cake Co.	Coopersville	MI	1	1	0
Dakota Mill & Grain	Belle Fourche	SD	1	1	0
Dakota Mill & Grain	Fort Pierre	SD	1	1	0
Dakota Mill & Grain	Philip	SD	1	1	0
Dakota Mill and Grain	Sturgis	SD	2	2	0
Dakota Pride Coop	Winner	SD	3	2	1
Diamond Pet Foods	Meta	MO	3	2	1
Discovery Pet Brands	Toledo	OH	1	1	0
Ducoa	Highland	IL	1	1	0
Elanco Animal Health	Indianapolis	IN	2	2	0

Manufacturer and Location			Sample	Passed	Not
Farmers Coop	Gordon	NE	4	4	0
Farmers Coop Company	Brookings	SD	1	1	0
Farmers Feed+Supply	Boyden	IA	1	0	1
Farmers Union Coop Elevator	Kennebec	SD	1	1	0
Farmland Industries Inc	Corson	SD	1	1	0
Farmland Industries Inc	Huron	SD	5	5	0
Farmland Industries Inc	Kansas City	MO	10	9	1
Federal Beef Processors	Rapid City	SD	1	1	0
Fleming Companies Inc.	Oklahoma City	OK	1	1	0
Florence Farmers Elevator	Florence	SD	1	1	0
Friskies Pet Care Products	Glendale	CA	1	1	0
Furst-McNess Company	Freeport	IL	1	1	0
Golden Sun Feeds Inc	Estherville	IA	11	11	0
Golden Sun Feeds Inc	Sioux Falls	SD	3	2	1
Gutwein and Co	Francesville	IN	1	1	0
Hartz Mountain Corp	Secaucus	NJ	3	3	0
Heartland Inc	Bismarck	ND	1	1	0
Heinz Pet Products	Newport	KY	3	3	0
Hi-Plains Nutrition Service	Whitewood	SD	3	1	2
Hills Materials Company	Rapid City	SD	1	1	0
Hollis Cotton Oil Mill, Inc.	Hollis	OK	1	1	0
Hoven Equity Exchange	Hoven	SD	1	1	0
Hub City Feed & Seed	Aberdeen	SD	6	6	0
Hubbard Feed Inc.	Watertown	SD	9	6	3
Hubbard Feeds Inc.	Huron	SD	1	1	0
Hubbard Feeds, Inc.	Mankato	MN	19	12	7
Hubbard Feeds, Inc.	Rapid City	SD	8	6	2
Hubbard Milling Company	Whitewood	SD	1	1	0
Huntting Elevator Company	Austin	MN	1	1	0
IAMS Company (The)	Lewisburg	OH	1	1	0
J&R Distributing	Lake Norden	SD	2	0	2
John Morrell & Company	Sioux City	IA	3	0	3
Jorgensen Laboratories Inc.	Loveland	CO	1	1	0
JRB Foods Inc	Cuyamoga Falls	OH	1	1	0
Kal Kan Foods Inc	Vernon	CA	2	2	0
Kay Dee Feed Company	Sioux City	IA	6	5	1
Kaytee Products Inc	Chilton	WI	1	1	0
Kent Feeds Inc	Muscatine	IA	8	7	1
Kent Feeds Inc	Sioux City	IA	2	2	0
Land O Lakes Ag Services	Volga	SD	2	1	1
Land O Lakes Inc.	Fort Dodge	IA	26	24	2
Land O Lakes/Harvest States	Edgeley	ND	1	1	0
Land O Lakes/Harvest States	Ft. Dodge	IA	4	4	0
Land O Lakes/Harvest States	Gettysburg	SD	3	1	2
Land O'Lakes/Harvest States	Sioux Falls	SD	34	28	6
Lamesa Cotton Oil Mill	Lamesa	TX	1	0	1
Lesterville Feed & Grain	Lesterville	SD	2	2	0

Manufacturer and Location			Sample	Passed	Not
Lextron Animal Health	Greeley	CO	1	1	0
McCook Feed & Fertilizer	Canistota	SD	1	1	0
McFleeg Inc	Watertown	SD	2	1	1
Merial Limited	Iselin	NJ	1	1	0
Metz Farms	Grand Rapids	MI	1	1	0
Mid-States Distributing Company	St Paul	MN	1	1	0
Midwest PMS	Minatore	NE	1	1	0
Milk Specialties Company	Dundee	IL	2	2	0
Millbrook Feed Mill	Mitchell	SD	1	1	0
Moorman Mfg Company	Quincy	IL	3	2	1
Muellers Feed Mill	Martin	SD	3	1	2
Nabisco Foods	E Hanover	NJ	1	1	0
Nash Finch	Minneapolis	MN	1	0	1
National By-Products Inc	Omaha	NE	1	1	0
Natures Gold	Pleasant Plain	OH	2	2	0
New Generation Feeds	Belle Fourche	SD	2	2	0
New Underwood Grain	New Underwood	SD	1	1	0
North American Animal Health	Lee’s Summit	MO	1	1	0
North Dakota Mill & Elevator	Grand Forks	ND	1	1	0
Nutra-Lix Inc	Billings	MT	1	1	0
Pedigree Inc	Vernon	CA	2	2	0
Pennfield Animal Health	Omaha	NE	1	1	0
Pet Products Plus, Inc.	St Peters	MO	1	1	0
Pet-Ag Inc.	Hampshire	IL	1	1	0
PM Ag Products Inc	Homewood	IL	2	1	1
Prangers Feed Mill	Platte	SD	1	1	0
Purina Mills	Minneapolis	MN	1	1	0
Purina Mills	St. Louis	MO	15	15	0
Ragland Mills Inc	Neosho	MO	1	1	0
Ralco Mix Products Inc	Marshall	MN	2	2	0
Ralston Purina Company	St. Louis	MO	5	5	0
Ramona Warehouse	Ramona	SD	2	2	0
Rancher Feed & Seed	Buffalo Gap	SD	1	1	0
Ranchers Choice Foods Inc.	Yankton	SD	1	1	0
Ranchers Feed & Supply	Edgemont	SD	1	0	1
Roche Vitamins & Fine Chemicals	Parsippany	NJ	2	2	0
Schuyler Laboratories Inc.	Rushville	IL	1	1	0
Scott Pet Products	Rockville	IN	1	1	0
Scranton Equity Exchange	Scranton	ND	3	3	0
SD Soybean Processors	Volga	SD	3	3	0
Sioux Nation Ag Center	Sioux Falls	SD	1	0	1
Sioux Nation Ag Center	Spencer	IA	2	1	1
Sioux Nation Ag Center	Watertown	SD	1	1	0
Southwest Grain	Belle Fourche	SD	2	1	1
Sunshine Pet Treats Inc.	Red Bay	AL	1	1	0
Swift and Co.	Worthington	MN	1	1	0

Manufacturer and Location			Sample	Passed	Not
Tabor Feed & Grain	Tabor	SD	1	1	0
Terra International Inc	Sioux City	IA	6	6	0
Tetra Sales	Blacksburg	VA	1	1	0
The Iams Company	Dayton	OH	2	2	0
Tizco Inc	Columbus	OH	1	1	0
Tractor Supply Company	Nashville	TN	1	1	0
Tradition Feed Products Company	Mankato	MN	9	7	2
Truman Farmers Elevator	Truman	MN	1	1	0
Valley Splendor	Fargo	ND	2	2	0
Vigorena Feeds	Mankato	MN	2	2	0
Vigortone Ag Products Inc	Cedar Rapids	IA	2	2	0
Walter Zaugg	Bardonia	NY	1	1	0
Watertown Coop Elevator	Watertown	SD	1	1	0
West Central Soy	Ralston	IA	1	1	0
Western QLF	Dodgeville	WI	2	1	1
Westway Trading	New Orleans	LA	6	4	2
Yaggies Inc	Yankton	SD	4	4	0
Zip Feed Mills	Huron	SD	4	4	0
Zip Feed Mills	Sioux Falls	SD	35	29	6
		Totals:	456	384	72

Percent Passed: 84.2% **Percent Not** 15.8%

Feed Summary Report

Feeds Sampled
01-01-1999 to 12-31-1999

Manufacturer Location / Product	Analyte	Found	Claim	
8 In 1 Pet Products, Inc. **Hauppauge, NY**				
***#* Cockatiel Treat - 8 in 1**		**99F-03244**		
	Alanine - Total, %	0.605	0.7	
	Arginine - Total, %	0.781	0.9	
	Aspartic Acid-Total, %	1.00	0.9	
	Cystine - Total, %	0.456	0.2	
	Crude Fat, %	16.3	5	
	Glutamic Acid-Total, %	2.11	2	
	Glycine - Total, %	0.508	0.45	
	Histidine - Total, %	0.248	0.25	
	Isoleucine - Total, %	0.399	0.35	
	Leucine - Total, %	0.925	1	
	Lysine - Total, %	0.350	0.4	
	Methionine - Total, %	0.220	0.2	
	Oven Moisture, %	7.93	12	
	Phenylalanine-Total, %	0.535	0.6	
	Proline - Total, %	0.655	0.5	
	Crude Protein, %	12.0	10.5	
	Serine - Total, %	0.507	0.5	
	Threonine - Total, %	0.333	0.4	
	Tryptophan - Total, %	0.099	0.15	DEFICIENT
	Tyrosine - Total, %	0.342	0.3	
	Valine - Total, %	0.533	0.65	
ADM Processing Company **Decatur, IL**				
35% Sunflower Meal		**99F-01715**		
	Ash, %	6.06	8	
	Crude Fiber, %	20.3	24	
	Crude Protein, %	35.0	35	
Ag Processing Inc **Dawson, MN**				
Soybean Meal - 47% Protein		**99F-00168**		
	Ash, %	5.56	8	
	Crude Protein, %	48.3	47	
Soybean Meal - 47% Protein		**99F-01714**		
	Ash, %	5.55	8	
	Crude Protein, %	47.5	47	
Soybean Meal 44% Protein		**99F-03322**		
	Ash, %	5.50	8	
	Crude Protein, %	44.9	44	
Ag Processing Inc **Omaha, NE**				
Soybean Meal 46.5% Protein		**99F-06408**		
	Ash, %	6.63	8	
	Crude Protein, %	48.0	46.5	
Agra Partners LTD **West Des Moines, IA**				
Chlortetracycline-4-Gram		**99F-03224**		
	Chlortetracycline, g/ lb	3.65	4	
BMD3 Nitro		**99F-04541**		
	Calcium, %	19.3	14-18.5	
	Roxarsone, g/ lb	2.04	2.27	

Manufacturer Location	Product	Analyte	Found	Claim	
Alfalfa Feeds Inc **DeSmet, SD**					
	***#* Suncured Alfalfa Cubes**		**99F-09149**		
		Crude Fiber, %	34.0	33	
		Crude Protein, %	10.4	12	DEFICIENT
All Natural Animal Products **Corvallis, OR**					
	Chuckanut		**99F-04488**		
		Crude Fiber, %	15.7	21	
		Crude Fat, %	34.8	15	
		Crude Protein, %	34.4	30	
Allied Foods Inc. **Atlanta, GA**					
	Strongheart Dog Food		**99F-04597**		
		Oven Moisture, %	75.1	78	
		Crude Protein, %	7.96	8	
Alpharma Inc **Fort Lee, NJ**					
	ChlorMax 50		**99F-04252**		
		Chlortetracycline, g/ lb	52.7	50	
	Deccox		**99F-10458**		
		Decoquinate, %	5.41	6	
	ChlorMax 50		**99D-04746**		
		Chlortetracycline, g/ lb	49.7	50	
American Crystal Sugar Company **Moorhead, MN**					
	Dried Beet Pulp with Beet Molasses		**99F-03621**		
		Crude Fiber, %	16.7	19	
		Crude Protein, %	7.94	6	
American Protein Corporation **Lytton, IA**					
	American Protein Corporation Steamed Bone Meal		**99F-00689**		
		Calcium, %	22.3	22-26	
		Crude Fat, %	14.9	12	
		Phosphorus, %	10.2	11	
		Crude Protein, %	18.2	12	
	Steamed Bone Meal		**99F-00994**		
		Calcium, %	21.6	22-26	
		Crude Fat, %	16.5	12	
		Phosphorus, %	10.1	11	
		Crude Protein, %	19.3	12	
	Steamed Bone Meal		**99F-03015**		
		Ash, %	63.0	65	
		Calcium, %	23.4	22-26	
		Crude Fat, %	14.1	12	
		Phosphorus, %	10.8	11	
		Crude Protein, %	15.9	15	
	Steamed Bone Meal		**99F-10188**		
		Ash, %	64.7	68	
		Calcium, %	24.0	22-26	
		Crude Fat, %	12.5	12	
		Total Nitrogen, %	2.61	2	
		Phosphorus, %	11.0	11	
		Crude Protein, %	16.3	12	
American Stockman/IMC Salt Inc. **Overland Park, KS**					
	American Stockman Trace Mineralized Stock Salt		**99F-04487**		
		alt (Sodium X 2.54), %	93.7	96-98.5	

Manufacturer Location / Product	Analyte	Found	Claim	
Arco Dehydrating Company				
Lake Park, IA				
Arco Dehydrated Alfalfa Pellets		**99F-03781**		
	Crude Fiber, %	29.8	30	
	Crude Protein, %	18.2	17	
Arco Dehydrated Alfalfa Meal		**99F-05790**		
	Crude Fiber, %	26.7	30	
	Crude Protein, %	18.2	17	
Atkinson Feed & Supply				
Atkinson, NE				
A.F.S. Extruded Supplement		**99F-04802**		
	Crude Fiber, %	3.66	13	
	Crude Fat, %	19.6	18	
	Crude Protein, %	40.3	36	
Barnes Hay & Feed Company				
Gayville, SD				
Alfalfa Pellets		**99F-00347**		
	Ash, %	9.80		
	Crude Fiber, %	29.8	33	
	Crude Fat, %	1.37	1	
	Oven Moisture, %	9.07		
	Nitrogen Free Extrct, %	33.1	35	
	Crude Protein, %	16.8	15	
Blue Bonnett Milling Co.				
Ardmore, OK				
***#* Boost-em**		**99F-05910**		
	Calcium, %	4.07	3.5-4.5	
	Fat: Acid Hydrolysis, %	4.56	4	
	Linoleic Acid 18:2, %	1.940	1.3	
	Lysine - Total, %	3.53	2	
	Methionine - Total, %	0.384	0.6	DEFICIENT
	Phosphorus, %	2.02	2	
	Crude Protein, %	32.6	30	
	Vitamin A, IU/ lb	23000.	25000	
C & S Products Company				
Fort Dodge, IA				
High Energy Suet		**00F-00035**		
	Crude Fiber, %	6.04	12	
	Crude Fat, %	44.4	30	
Suet Wild Bird Feed		**99F-00575**		
	Crude Fiber, %	5.88	12	
	Crude Fat, %	46.8	30	
High Energy Suet		**99F-05490**		
	Crude Fiber, %	7.21	12	
	Crude Fat, %	45.9	30	
Finch Snak		**99F-05902**		
	Crude Fat, %	25.1	20	
	Crude Protein, %	21.4	18	
C and G Products				
Carroll, IA				
***#* Pro-Tec**		**99F-03239**		
	Ash, %	10.7	13	
	Chloride, %	2.660	4	
	Crude Fiber, %	8.57	14	
	Crude Protein, %	3.13	5	DEFICIENT
	Sodium, %	2.74	2-3	
	Total Sugars(Invert), %	35.7	28	

= Misbranded

Manufacturer / Location / Product	Analyte	Found	Claim	
Cammack Ranch Supply				
Union Center, SD				
Full Energy Bean		**99F-01785**		
	Crude Fat, %	21.8	18	
	Crude Protein, %	36.2	36	
***#* # 8 Grower**		**99F-01786**		
	Crude Protein, %	10.6	12	DEFICIENT
Sweet Chop		**99F-01787**		
	Crude Protein, %	11.7	10	
15% Prairie Power Hi-Energy Cake		**99F-01788**		
	Crude Protein, %	15.6	15	
Custom Cake		**99F-01789**		
	Crude Fiber, %	7.09	10	
	Crude Protein, %	30.2	25	
Cargill Inc				
Minneapolis, MN				
32% Protein Solvent Extracted Sunflower Meal		**99F-00170**		
	Crude Fiber, %	21.4	21	
	Crude Protein, %	34.2	32	
Cargill-Nutrena Feeds				
Minneapolis, MN				
20% Range Block STL		**99F-00691**		
	Calcium, %	3.63	2.5-3.5	
	Crude Protein, %	20.5	20	
	Salt (Sodium X 2.54), %	12.6	11-12	
	Vitamin A, IU/ lb	28000.	30000	
Custom Feed 4480-B		**99F-03013**		
	Lasalocid, mg/ lb	518.	600	
***#* Custom Feed**		**99F-03014**		
	Lasalocid, mg/ lb	194.	200	
	Crude Protein, %	30.1	32	DEFICIENT
***#* Ringmaster Super Show Lamb Feed (B30) (NR) medicated**		**99F-04539**		
	Equiv Crude Protein, %	0.87	1	
	Lasalocid, g/ton	49.1	60	
	Crude Protein, %	17.2	18	DEFICIENT
Custom mix F41 B250 4MGA		**99F-04540**		
	Calcium, %	7.88	7.36-8.14	
	Crude Fiber, %	8.82	11.3	
	Equiv Crude Protein, %	23.8	29	
	Lasalocid, g/ton	461.	500	
	Crude Protein, %	40.5	41	
	Salt (Sodium X 2.54), %	5.11	5.225-5.775	
	Sodium, %	2.01	2.1-2.6	
	Vitamin A, IU/ lb	40000.	41131	
Sweet Stuff		**99F-07376**		
	Crude Fiber, %	7.66	13	
	Crude Protein, %	12.0	12	
Trace Mineral w/EDDI		**99F-10463**		
	Iodine, %	0.019	0.02	
	Salt (Sodium X 2.54), %	93.9	93-98	
	Sodium, %	37.0	37-38.75	
Aureomycin 4g Crumbles		**99F-12779**		
	Crude Fiber, %	12.8	25	
	Chlortetracycline, g/ lb	4.03	4	
	Crude Protein, %	12.4	9	
Cargill-Nutrena Feeds				
Sterling, CO				
Cammack 32% Liquid		**99F-10457**		
	Equiv Crude Protein, %	24.7	29	
	Crude Protein, %	32.7	32	

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Manufacturer Location / Product	Analyte	Found	Claim	
Cattleman's Choice Loomix Johnstown, CO				
***#* MCS II**		**99F-01402**		
	Equiv Crude Protein, %	12.6	18.5	
	Vacuum Moisture, %	52.5	49	
	Phosphorus, %	2.03	2	
	Crude Protein, %	23.1	25	DEFICIENT
	Salt (Sodium X 2.54), %	5.47	1.7-2.1	EXCESSIVE
	Vitamin A, IU/ lb	36500.	50000	
***#* Montana Stress Mix**		**99F-01403**		
	Ash, %	7.96	9	
	Equiv Crude Protein, %	3.49	2	EXCESSIVE
	Vacuum Moisture, %	50.0	48	
	Potassium, %	2.26	3	DEFICIENT
	Crude Protein, %	9.03	10	DEFICIENT
	Total Sugars(Invert), %	28.3	24	
	Vitamin A, IU/ lb	7350.	25000	DEFICIENT
Central Bi-Products Redwood Falls, MN				
Gro-Mor Hydrolyzed Poultry Feathers Meal		**99F-04776**		
	Ash, %	1.96	6	
	Crude Protein, %	85.1	80	
Gro-Mor Blood Meal Flash Dried		**99F-04777**		
	Oven Moisture, %	6.27	10	
	Crude Protein, %	85.3	85	
Gro Mor Feather Meal		**99F-05361**		
	Ash, %	2.14	6	
	Crude Protein, %	83.6	80	
Gro-Mor Blood Meal		**99F-10454**		
	Oven Moisture, %	5.99	10	
	Crude Protein, %	83.3	85	
Hydrolyzed Poultry Feathers		**99F-10455**		
	Ash, %	1.74	6	
	Crude Protein, %	85.2	80	
Central Tractor Farm and Country Minneapolis, MN				
Dyna Gro Assorted Biscuits For Dogs		**00F-00036**		
	Crude Fat, %	5.92	6	
	Oven Moisture, %	7.16	10	
	Crude Protein, %	23.5	20	
Alfalfa Horse Cubes		**99F-12780**		
	Crude Fiber, %	23.3	33	
	Crude Protein, %	17.4	15.8	
Central Tractor Farm and Country Inc DesMoines, IA				
37% Range Block		**99F-04244**		
	Calcium, %	4.99	4-5	
	Equiv Crude Protein, %	18.9	18.5	
	Crude Protein, %	36.6	37	
	Salt (Sodium X 2.54), %	11.8	12-13	
	Sodium, %	4.64	4.8-6.3	
	Vitamin A, IU/ lb	30000.	30000	

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Manufacturer Location	Product	Analyte	Found	Claim	
Consolidated Nutrition L.C. Omaha, NE					
	Feedlot Supplement 40/30 S-2272-13N/M-7262-13N Medicated		**99F-04229**		
		Calcium, %	10.9	9-10.8	
		Crude Fiber, %	5.28	18	
		Equiv Crude Protein, %	26.2	30	
		Monensin, g/ton	427.	500	
		Crude Protein, %	40.2	40	
		Salt (Sodium X 2.54), %	4.50	5-6	
		Vitamin A, IU/ lb	57000.	25000	
	Metabalance Starter Pack		**99F-04230**		
		Lysine - Total, %	2.31	2.5	
		Crude Protein, %	38.4	37	
	Prospector HiMag M7795-S5895		**99F-06035**		
		Calcium, %	14.9	12-14.4	
		Iodine, ppm	82.0	100	
		Magnesium, %	11.8	13	
		Phosphorus, %	3.67	4	
		Salt (Sodium X 2.54), %	11.3	11-13.2	
		Selenium, ug/g (ppm)	17.9	20	
		Vitamin A, IU/ lb	194000.	150000	
	***#* MasterGain 12-12 Breeder 50195AAA**		**99F-06036**		
		Calcium, %	14.6	12-14.4	
		Iodine, ppm	102.	98	
		Phosphorus, %	10.9	12	DEFICIENT
		Potassium, %	2.57	2.5	
		Salt (Sodium X 2.54), %	5.99	4.5-5.5	
		Selenium, ug/g (ppm)	24.8	20	
		Vitamin A, IU/ lb	119000.	100000	
	Swine Breeder Pak Plus		**99F-06037**		
		Calcium, %	25.1	25-27.5	
		Phosphorus, %	15.8	16	
	Ultrabalance Dry Cow Concentrate S-1320/M652		**99F-06038**		
		Acid Detergent Fiber, %	8.22	8	
		Calcium, %	2.18	1.5-2	
		Equiv Crude Protein, %	2.88	3	
		Phosphorus, %	1.89	2	
		Crude Protein, %	35.2	35	
		Salt (Sodium X 2.54), %	4.96	5.5-6.5	
		Selenium, ug/g (ppm)	9.23	8	
		Vitamin A, IU/ lb	98000.	100000	
	Lo-Pro B-1000 50687 BJW		**99F-06039**		
		Calcium, %	8.35	8-9.6	
		Crude Fiber, %	8.43	10	
		Lasalocid, g/ton	1180.	1200	
		Potassium, %	2.04	2	
		Crude Protein, %	12.1	10	
		Salt (Sodium X 2.54), %	4.72	5-6	
		Selenium, ug/g (ppm)	4.93	4.5	
		Vitamin A, IU/ lb	76000.	80000	
	***#* CSP-250 option 8438**		**99F-07746**		
		Chlortetracycline, g/ lb	2.90	4	
		Selenium, ug/g (ppm)	4.57	5	
		Sulfathiazole, %	0.837	0.88	
		Vitamin A, IU/ lb	41000.	68000	DEFICIENT
	***#* Meat Maker 5-0385/m3045-0263**		**99F-08225**		
		Amprolium, %	0.0094	0.0125	DEFICIENT
		Crude Fat, %	3.43	5	DEFICIENT
		Lysine - Total, %	0.919	1	
		Crude Protein, %	20.2	21	DEFICIENT
	***#* Sheep Mineral**		**99F-08226**		
		Calcium, %	15.8	15.8-18.9	
		Phosphorus, %	13.0	14	
		Salt (ChlorideX1.65), %	12.2	14-16	DEFICIENT
		Salt (Sodium X 2.54), %	12.3	14-16	DEFICIENT
		Selenium, ug/g (ppm)	20.0	19.5	
		Vitamin A, IU/ lb	239000.	120200	

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Manufacturer Location / Product	Analyte	Found	Claim
Consumers Supply Corp **Storm Lake, IA**			
85% Blood Meal		**99F-00221**	
	Crude Protein, %	94.5	85
Consumers Supply Dist Company **Sioux City, IA**			
50% Meat & Bone Meal Certified Pork		**99F-03016**	
	Calcium, %	10.7	9-10.2
	Crude Fat, %	11.2	8
	Phosphorus, %	5.01	4.1
	Crude Protein, %	52.0	50
Product No F513 Chlortetracycline - 4		**99F-04003**	
	Chlortetracycline, g/ lb	3.95	4
	Vitamin A, IU/ lb	255000.	250000
44% Protein Solvent Extracted Soybean Meal		**99F-04026**	
	Ash, %	6.31	7
	Oven Moisture, %	10.9	12.5
	Crude Protein, %	48.6	44
Country General **Grand Island, NE**			
Dyna Gro Country Chicken Cat Food-Can		**00F-00033**	
	Crude Fat, %	8.03	5
	Oven Moisture, %	77.3	78
	Crude Protein, %	11.1	9
20% Range Block		**99F-04245**	
	Calcium, %	3.53	2.5-3.5
	Crude Protein, %	20.8	20
	Salt (Sodium X 2.54), %	9.33	8-9
	Sodium, %	3.67	3.2-4.5
	Vitamin A, IU/ lb	15500.	20000
Dyna Gro Chunky Style With Beef for Dogs		**99F-12782**	
	Crude Fat, %	10.3	5
	Oven Moisture, %	74.1	78
	Crude Protein, %	10.5	9
D and D Suet Cake Co. **Coopersville, MI**			
Suet Peanut Cake		**99F-03780**	
	Crude Fiber, %	4.92	12
	Crude Fat, %	59.5	35
	Crude Protein, %	27.6	6
Dakota Mill & Grain **Fort Pierre, SD**			
Custom Feed		**99F-02200**	
	Lasalocid, g/ton	76.7	85
Dakota Mill & Grain **Philip, SD**			
Sweet chop feed		**99F-05597**	
	Crude Protein, %	10.9	9
Dakota Mill and Grain **Sturgis, SD**			
Sweet Chop Feed		**99F-00349**	
	Crude Protein, %	10.1	9
Sweet Chop Feed		**99F-10477**	
	Crude Protein, %	9.93	9

Manufacturer Location	Product	Analyte	Found	Claim	
Dakota Pride Coop Winner, SD					
	# **Creep Feed**		**99F-00573**		
		Crude Fiber, %	20.8	20	
		Lasalocid, g/ton	29.0	68	DEFICIENT
		Crude Protein, %	15.2	14	
	Envirolean 2.5L Swine Conc.		**99F-03226**		
		Calcium, %	3.14	2.5-3.5	
		Lysine - Total, %	2.39	2.5	
		Crude Protein, %	40.5	40	
		Salt (Sodium X 2.54), %	1.48	1.6-2.1	
	Farmland Wormer/Finisher 2-C40		**99F-03227**		
		Tylosin, g/ton	41.3	40	
Diamond Pet Foods Meta, MO					
	Diamond Dog Food Premium Adult		**99F-05907**		
		Arachidic Acid 20:0, %	0.0402		
		Behenic Acid 22:0, %	0.0028		
		Docosadienoic Acid, %	0.0084		
		Eicosadienoic Acid, %	0.0168		
		Erucic Acid 22:1, %	N.D.		
		Fat: Acid Hydrolysis, %	16.5	18	
		II-eicosenoic Acid, %	0.0699		
		Lignoceric Acid 24:0, %	0.0094		
		Linoleic Acid 18:2, %	3.524		
		Linolenic Acid 18:3, %	0.3985		
		Methyl Stearate 18:0, %	0.9377		
		Oven Moisture, %	7.52	10	
		Myristic Acid 14.0, %	0.1005		
		Nervonic Acid 24:1, %	0.0197		
		Oleic Acid 18:1, %	6.335		
		Omega-3 Fatty Acids, %	0.3985	0.5	
		Omega-6 Fatty Acids, %	3.524	3	
		Palmitic Acid 16:0, %	3.719		
		Palmitoleic Acid, %	1.105		
		Crude Protein, %	27.1	26	
	Diamond Dog Food Puppy Formula		**99F-05912**		
		Arachidic Acid 20:0, %	0.0498		
		Behenic Acid 22:0, %	0.0348		
		Docosadienoic Acid, %	0.0091		
		Eicosadienoic Acid, %	0.0228		
		Erucic Acid 22:1, %	N.D.		
		Fat: Acid Hydrolysis, %	20.7	20	
		II-eicosenoic Acid, %	0.0792		
		Lignoceric Acid 24:0, %	0.0083		
		Linoleic Acid 18:2, %	4.290		
		Linolenic Acid 18:3, %	0.4190		
		Methyl Stearate 18:0, %	1.270		
		Oven Moisture, %	6.05	10	
		Myristic Acid 14.0, %	0.1260		
		Nervonic Acid 24:1, %	0.0190		
		Oleic Acid 18:1, %	7.990		
		Omega-3 Fatty Acids, %	0.4190	0.5	
		Omega-6 Fatty Acids, %	4.290	3.3	
		Palmitic Acid 16:0, %	4.800		
		Palmitoleic Acid, %	1.390		
		Crude Protein, %	33.7	31	

Manufacturer Location	Product	Analyte	Found	Claim	
#	**Diamond Dog Food Lamb Meal and Rice**		**99F-05913**		
		Arachidic Acid 20:0, %	0.0361		
		Behenic Acid 22:0, %	0.0170		
		Docosadienoic Acid, %	0.0110		
		Eicosadienoic Acid, %	0.0215		
		Erucic Acid 22:1, %	N.D.		
		Fat: Acid Hydrolysis, %	14.5	14	
		II-eicosenoic Acid, %	0.0667		
		Lignoceric Acid 24:0, %	0.0120		
		Linoleic Acid 18:2, %	2.730		
		Linolenic Acid 18:3, %	0.1820		
		Methyl Stearate 18:0, %	0.9990		
		Oven Moisture, %	5.97	10	
		Myristic Acid 14.0, %	0.1100		
		Nervonic Acid 24:1, %	0.0110		
		Oleic Acid 18:1, %	5.780		
		Omega-3 Fatty Acids, %	0.1820	0.4	DEFICIENT
		Omega-6 Fatty Acids, %	2.730	2.6	
		Palmitic Acid 16:0, %	3.440		
		Palmitoleic Acid, %	0.8960		
		Crude Protein, %	28.1	26	
Discovery Pet Brands Toledo, OH					
	Tropical Flakes		**99F-00337**		
		Fat: Acid Hydrolysis, %	12.6	9	
		Oven Moisture, %	5.34	9	
		Crude Protein, %	51.2	44	
Ducoa Highland, IL					
	Tylan 10 Tylosin Type B phosphate		**99F-08227**		
		Calcium, %	10.6	9.5-11.4	
		Crude Fiber, %	26.9	35	
		Tylosin, g/lb	9.80	10	
Elanco Animal Health Indianapolis, IN					
	Rumensin 80		**99F-10453**		
		Monensin, g/lb	82.3	80	
	Tylan 40		**99D-05896**		
		Tylosin, g/lb	40.5	40	
Farmers Coop Gordon, NE					
	Soybean Meal 44% Protein		**99F-00690**		
		Crude Protein, %	45.9	44	
	Hen Scratch		**99F-04383**		
		Crude Protein, %	9.67	9.5	
	Hen Scratch		**99F-04599**		
		Crude Protein, %	11.1	9.5	
	50% Meat and Bone Meal		**99F-04801**		
		Calcium, %	8.52	6-8.8	
		Crude Fat, %	10.8	10	
		Phosphorus, %	3.90	4	
		Crude Protein, %	51.6	50	
Farmers Coop Company Brookings, SD					
	Custom Mix Feed		**99F-09059**		
		Oxytetracycline, g/ton	335.	397	

Manufacturer Location / Product	Analyte	Found	Claim	
Farmers Feed+Supply Boyden, IA				
***#* Ruma Rich Blue Label All Milk Calf Milk Replacer Instant**		**99F-05895**		
	Decoquinate, g/ton	41.0	45.4	
	Fat: Roese Gottlieb, %	22.0	20	
	Crude Protein, %	20.8	20	
	Vitamin A, IU/ lb	23000.	40000	DEFICIENT
Farmers Union Coop Elevator Kennebec, SD				
Custom Mix		**99F-00814**		
	Chlortetracycline, g/ton	331.	441	
	Monensin, g/ton	57.3	48	
Farmland Industries Inc Corson, SD				
Creep Pasture Gest 14 B-68 Medicated		**99F-01384**		
	Crude Fiber, %	18.4	25	
	Lasalocid, g/ton	66.7	68	
	Crude Protein, %	13.8	14	
Farmland Industries Inc Huron, SD				
Mol-Blend		**99F-01717**		
	Vacuum Moisture, %	33.3	35	
	Crude Protein, %	8.12	5	
Copass Beef 36-13 B600 Medicated		**99F-01720**		
	Calcium, %	3.40	3-4	
	Crude Fiber, %	15.3	18	
	Equiv Crude Protein, %	13.0	13	
	Lasalocid, g/ton	606.	600	
	Crude Protein, %	37.3	36	
	Salt (Sodium X 2.54), %	4.99	4-5	
	Vitamin A, IU/ lb	29000.	30000	
Yale-Dor 40-20 R400N/S 15% Alf Medicated		**99F-01721**		
	Calcium, %	6.54	6.25-6.5	
	Crude Fiber, %	15.7	17	
	Equiv Crude Protein, %	19.0	20	
	Monensin, g/ton	401.	400	
	Potassium, %	2.27	2	
	Crude Protein, %	41.2	40	
	Vitamin A, IU/ lb	30000.	30000	
Holstein Beef Fin. RT-400 Medicated		**99F-01724**		
	Calcium, %	8.65	7.5-9	
	Crude Fiber, %	10.4	15	
	Equiv Crude Protein, %	18.8	19	
	Monensin, g/ton	366.	400	
	Potassium, %	3.64	3.5	
	Crude Protein, %	34.3	34	
	Salt (Sodium X 2.54), %	2.26	1.75-2.25	
	Tylosin, g/ton	140.	144	
	Vitamin A, IU/ lb	33000.	30000	
Copass Max-Amino 39		**99F-01725**		
	Acid Detergent Fiber, %	7.90	10	
	Calcium, %	3.92	3-4	
	Crude Protein, %	38.6	39	
	Vitamin A, IU/ lb	29000.	30000	

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Manufacturer Location	Product	Analyte	Found	Claim	
Farmland Industries Inc Kansas City, MO					
	44% Solvent Extract Soybean Meal		**99F-00340**		
		Crude Protein, %	45.3	44	
	Soybean Meal 44%		**99F-03017**		
		Crude Protein, %	45.9	44	
	First Wean #7.5 CBD		**99F-03223**		
		Carbadox, %	0.00508	0.0055	
		Crude Fat, %	7.87	8	
		Crude Protein, %	23.1	22.5	
	ProPhos 12 Mineral C-3500		**99F-03225**		
		Calcium, %	12.4	11-13	
		Chlortetracycline, g/ lb	1.42	1.75	
		Phosphorus, %	11.3	12	
		Salt (Sodium X 2.54), %	11.4	11-13	
		Selenium, ug/g (ppm)	20.4	22	
		Vitamin A, IU/ lb	179000.	200000	
	OTC-4		**99F-03605**		
		Calcium, %	5.03	4.5-5.5	
		Crude Fiber, %	14.4	29	
		Oxytetracycline, g/ lb	3.57	4	
		Crude Protein, %	13.8	8	
	Broiler Starter Complete		**99F-03606**		
		Amprolium, %	0.0110	0.0125	
		Crude Protein, %	24.4	22	
	Pride of the Arena Complete 13 Horse Feed		**99F-04106**		
		Crude Fiber, %	16.0	20	
		Crude Protein, %	14.6	13	
	***#* Liquid Concentrate 32**		**99F-04546**		
		Calcium, %	0.33	6.5-7.5	DEFICIENT
		Equiv Crude Protein, %	38.0	39.5	
		Vacuum Moisture, %	37.5	35	
		Potassium, %	1.86	3	DEFICIENT
		Crude Protein, %	43.6	40	
		Salt (ChlorideX1.65), %	4.55	3.5-4.5	
		Salt (Sodium X 2.54), %	6.55	3.5-4.5	EXCESSIVE
		Vitamin A, IU/ lb	41000.	36000	
	Feedlot Susp 40 (0) R-500		**99F-04547**		
		Equiv Crude Protein, %	29.5	30	
		Vacuum Moisture, %	34.9	40	
		Crude Protein, %	36.6	32	
		Salt (ChlorideX1.65), %	4.05	4.5-5.5	
		Salt (Sodium X 2.54), %	6.28	4.5-5.5	EXCESSIVE
		Vitamin A, IU/ lb	35000.	20000	
	44% Solvent Extracted Soybean Meal		**99F-10479**		
		Crude Protein, %	43.8	44	
Federal Beef Processors Rapid City, SD					
	Meat and Bone Meal		**99F-01407**		
		Calcium, %	12.6	10-12	
		Crude Fat, %	7.01	6	
		Phosphorus, %	5.93	4.5	
		Crude Protein, %	45.4	46	
Fleming Companies Inc. Oklahoma City, OK					
	Rainbow Dry Cat Food		**99F-00576**		
		Fat: Acid Hydrolysis, %	9.49	9	
		Oven Moisture, %	6.57	12	
		Crude Protein, %	32.9	30	
Florence Farmers Elevator Florence, SD					
	Soybean Meal		**99F-05366**		
		Ash, %	5.62	8	
		Crude Protein, %	44.6	44	

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Manufacturer Location / Product	Analyte	Found	Claim
Friskies Pet Care Products Glendale, CA			
Friskies Ocean Fish Flavor Cat Food		**99F-03003**	
	Fat: Acid Hydrolysis, %	9.35	8
	Oven Moisture, %	5.62	10
	Crude Protein, %	33.0	31
	Taurine - Free, %	0.104	0.1
Furst-McNess Company Freeport, IL			
6-12 A Livestock Mineral		**99F-10462**	
	Calcium, %	6.90	6-7
	Iodine, ppm	44.0	59
	Magnesium, %	3.05	2.7
	Phosphorus, %	11.1	12
	Crude Protein, %	26.2	26
	Vitamin A, IU/ lb	294000.	260000
Golden Sun Feeds Inc Estherville, IA			
Golden Lean 40		**99F-02201**	
	Calcium, %	3.46	3-4
	Crude Protein, %	41.8	40
	Salt (Sodium X 2.54), %	2.55	2.5-3
16% Lamb Grower Bov		**99F-02202**	
	Lasalocid, g/ton	33.1	30
	Crude Protein, %	18.3	16
Golden Acres Adult Dog Food		**99F-02203**	
	Fat: Acid Hydrolysis, %	16.6	16
	Oven Moisture, %	5.69	11
	Crude Protein, %	28.2	26
Broiler Finisher		**99F-02980**	
	Amprolium, %	0.0117	0.0125
	Lysine - Total, %	0.872	0.9
	Methionine - Total, %	0.314	0.35
	Crude Protein, %	19.0	18
Golden Pig Concentrate 24GP		**99F-02981**	
	Calcium, %	2.25	2-2.5
	Crude Fat, %	6.30	6
	Lysine - Total, %	3.04	3
	Crude Protein, %	37.2	34
Lean Choice 34 400 bov		**99F-02982**	
	Calcium, %	3.72	3-4
	Lasalocid , g/ton	383.	400
	Potassium, %	2.13	2
	Crude Protein, %	35.4	34
	Salt (Sodium X 2.54), %	2.32	2.5-3
	Vitamin A, IU/ lb	41000.	40000
Golden Sun Feeds Hi-Plains Mineral		**99F-03778**	
	Calcium, %	13.6	11-13
	Phosphorus, %	8.81	9
	Selenium, ug/g (ppm)	22.0	22.2
	Vitamin A, IU/ lb	418000.	400000
Golden Sun Golden Pig Nursery Formula 1400		**99F-03779**	
	Crude Fat, %	6.50	5.5
	Crude Protein, %	21.2	21
Nursery Formula 1300-C-50		**99F-07511**	
	Carbadox, %	0.00502	0.0055
	Crude Fat, %	5.05	5
	Crude Protein, %	22.0	19.5
Hi Plains Mineral		**99F-07512**	
	Calcium, %	13.1	11-13
	Iodine, ppm	63.0	60
	Phosphorus, %	8.46	9
	Selenium, ug/g (ppm)	28.6	30
	Vitamin A, IU/ lb	421000.	400000

Manufacturer Location / Product / Analyte	Found	Claim	
CTC-4g Medicated	**99F-07513**		
Calcium, %	3.75	3-4	
Chlortetracycline, g/ lb	4.35	4	
Lysine - Total, %	2.38	2.5	
Crude Protein, %	42.1	40	
Salt (Sodium X 2.54), %	2.62	2.5-3	
Golden Sun Feeds Inc **Sioux Falls, SD**			
***#* Hi-Plains Stocker Mineral 1440 Bov Medicated**	**99F-01722**		
Calcium, %	13.3	13-14	
Iodine, ppm	83.0	60	
Lasalocid, g/ton	1430.	1440	
Phosphorus, %	5.89	7	DEFICIENT
Salt (Sodium X 2.54), %	21.8	20-22	
Selenium, ug/g (ppm)	20.8	22	
Vitamin A, IU/ lb	430000.	300000	
Broiler Starter Medicated	**99F-05378**		
Amprolium, %	0.0118	0.0125	
Lysine - Total, %	1.06	1.1	
Methionine - Total, %	0.468	0.5	
Crude Protein, %	22.2	22	
Terra-Aide "OTC" 4G Medicated	**99F-12090**		
Oxytetracycline, g/ lb	2.76	4	
Gutwein and Co **Francesville, IN**			
Morning Song Country Pride Wild Bird Food	**99F-05788**		
Crude Fiber, %	3.44	10	
Crude Protein, %	8.95	7	
Hartz Mountain Corp **Secaucus, NJ**			
Hampster & Gerbil Food	**99F-03005**		
Oven Moisture, %	5.94	12	
Crude Protein, %	27.0	25.1	
Hartz Hamster & Gerbil Diet	**99F-03139**		
Oven Moisture, %	13.2	13	
Crude Protein, %	10.4	10	
Hartz Hampster and Gerbil Food	**99F-03564**		
Oven Moisture, %	6.24	12	
Crude Protein, %	27.8	25.1	
Sodium, %	0.27	0.1-1.1	
Heartland Inc **Bismarck, ND**			
Snow Country Preferred Wild Bird Seed	**99F-01023**		
Crude Fiber, %	9.43	15	
Crude Fat, %	9.46	5	
Crude Protein, %	12.2	10	
Heinz Pet Products **Newport, KY**			
Kozy Kitten Kat Food	**99F-00571**		
Oven Moisture, %	75.5	78	
Crude Protein, %	11.1	10	
Cycle Puppy Skin and Coat Formula	**99F-03565**		
Crude Fat, %	5.65	5	
Linoleic Acid 18:2, %	0.7200	0.3	
Oven Moisture, %	78.5	80	
Crude Protein, %	8.05	8	

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Manufacturer Location / Product	Analyte	Found	Claim	
9 Lives Tuna and Egg		**99F-08508**		
	Fat: Acid Hydrolysis, %	10.6	9	
	Oven Moisture, %	6.76	12	
	Crude Protein, %	32.8	30	
	Taurine - Total, %	0.141	0.1	
Hi-Plains Nutrition Service Whitewood, SD				
Hi-Plains Pasture Mineral EX		**99F-10474**		
	Calcium, %	7.41	7-8	
	Phosphorus, %	17.7	18	
	Potassium, %	2.63	2	
	Vitamin A, IU/ lb	485000.	640000	
***#* Min./Vit. Supplement for Cattle, Goats and Sheep**		**99F-10475**		
	Calcium, %	13.6	12-13	
	Phosphorus, %	11.6	12	
	Salt (Sodium X 2.54), %	11.9	12-13	
	Vitamin A, IU/ lb	53500.	250000	DEFICIENT
***#* 20% Textured Calf Starter with Zin Pro**		**99F-10476**		
	Crude Protein, %	17.5	20	DEFICIENT
Hills Materials Company Rapid City, SD				
HiCal		**99F-01432**		
	Calcium, %	36.4	36-40	
Hollis Cotton Oil Mill, Inc. Hollis, OK				
38% Protein Supplement Prime Quality Meal or Pellets		**99F-00688**		
	Crude Fiber, %	13.8	17	
	Crude Protein, %	40.7	38	
Hoven Equity Exchange Hoven, SD				
Custom Pig Feed		**99F-08662**		
	Chlortetracycline, g/ton	210.	198	
Hub City Feed & Seed Aberdeen, SD				
Soybean Meal		**99F-00251**		
	Ash, %	5.48	8	
	Crude Protein, %	45.7	44	
Soybean Meal 47% Protein		**99F-02787**		
	Ash, %	5.64	8	
	Crude Protein, %	47.4	47	
Calf Creep B68		**99F-02789**		
	Crude Fiber, %	12.8	18	
	Lasalocid, g/ton	52.1	68	
	Crude Protein, %	13.9	14	
Pheasant Brand 12% Range Cake		**99F-02790**		
	Crude Protein, %	13.9	12	
	Vitamin A, IU/ lb	23000.	20000	
Chick Starting Feed Medicated		**99F-02791**		
	Amprolium, %	0.0134	0.0125	
	Crude Protein, %	22.0	20	
Aureomycin 4g Crumbles		**99F-10191**		
	Crude Fiber, %	6.45	25	
	Chlortetracycline, g/ lb	2.96	4	
	Crude Protein, %	12.5	9	

Manufacturer Location / Product	Analyte	Found	Claim	
Hubbard Feed Inc. Watertown, SD				
***#* Hubbard Min-Tech Sweet Phos 12 Mineral**		**99F-00167**		
	Calcium, %	12.9	12.3-14.7	
	Iodine, ppm	41.0	50	
	Phosphorus, %	12.3	12	
	Salt (Sodium X 2.54), %	14.0	12.1-14.5	
	Selenium, ug/g (ppm)	13.8	20	DEFICIENT
	Vitamin A, IU/ lb	162000.	180000	
Chlortetracycline Crumbles 10g Medicated		**99F-00169**		
	Chlortetracycline, g/ lb	9.67	10	
Hubbard Commercial Feedlot 40-22		**99F-05086**		
	Calcium, %	6.48	6.5-7.8	
	Crude Fiber, %	10.3	14	
	Equiv Crude Protein, %	20.8	22	
	Lasalocid, g/ton	517.	500	
	Potassium, %	2.09	2	
	Crude Protein, %	39.2	40	
	Salt (Sodium X 2.54), %	4.42	4-5	
	Vitamin A, IU/ lb	42000.	40000	
Hubbard 14% Calf Creep CB60		**99F-05088**		
	Crude Fiber, %	11.6	15	
	Lasalocid, g/ton	62.9	60	
	Crude Protein, %	15.8	14	
Calf and Heifer Concentrate B250 Medicated		**99F-05367**		
	Acid Detergent Fiber, %	9.46	12	
	Calcium, %	2.80	2-2.5	
	Crude Fiber, %	7.48	10	
	Lasalocid, g/ton	228.	250	
	Crude Protein, %	34.6	34	
	Salt (Sodium X 2.54), %	2.06	1.5-2	
	Vitamin A, IU/ lb	37000.	30000	
Min Tech Sweet Phos 12 Medicated		**99F-05368**		
	Calcium, %	14.8	12.3-14.7	
	Chlortetracycline, g/ lb	1.73	1.87	
	Phosphorus, %	11.5	12	
	Salt (Sodium X 2.54), %	12.5	12.1-14.5	
	Vitamin A, IU/ lb	219000.	180000	
Hubbard Min-Tech 1:1 Mineral		**99F-05370**		
	Calcium, %	16.1	14.1-17	
	Iodine, ppm	26.0	30	
	Phosphorus, %	15.7	16	
	Salt (Sodium X 2.54), %	8.23	7.1-8.5	
	Selenium, ug/g (ppm)	11.1	12.5	
	Vitamin A, IU/ lb	199000.	100000	
***#* Custom Mix Min-Tech Rangeland B1440 Mineral and A**		**99F-05373**		
	Lasalocid, g/ton	1250.	1440	
	Vitamin A, IU/ lb	126000.	200000	DEFICIENT
***#* MCC Dairy Complemix**		**99F-12092**		
	Acid Detergent Fiber, %	2.04	1	EXCESSIVE
	Calcium, %	8.80	7.4-8.8	
	Equiv Crude Protein, %	6.10	24.1	
	Crude Fat, %	11.1	14.2	DEFICIENT
	Fat: Roese Gottlieb, %	10.1	14.2	DEFICIENT
	Crude Protein, %	39.2	39.7	
	Salt (ChlorideX1.65), %	6.41	6-7.2	
	Salt (Sodium X 2.54), %	16.2	6-7.2	EXCESSIVE
	Selenium, ug/g (ppm)	6.23	6.7	
	Vitamin A, IU/ lb	45000.	57500	

Manufacturer Location	Product	Analyte	Found	Claim	
Hubbard Feeds Inc. Huron, SD					
	Commercial Feedlot 40-22B 500		**99F-02735**		
		Calcium, %	7.54	6.5-7.5	
		Crude Fiber, %	9.70	14	
		Equiv Crude Protein, %	21.9	22	
		Lasalocid, g/ton	516.	500	
		Potassium, %	2.25	2	
		Crude Protein, %	41.2	40	
		Salt (Sodium X 2.54), %	4.67	4-5	
		Vitamin A, IU/ lb	48000.	40000	
Hubbard Feeds, Inc. Mankato, MN					
	Hubbard Lean Cut Plus		**99F-00341**		
		Calcium, %	2.74	3.1-4.1	
		Lysine - Total, %	2.52	2.6	
		Phosphorus, %	2.80	2	
		Crude Protein, %	41.0	41	
	***#* Multu M Cattle Prep-NSE**		**99F-00348**		
		Calcium, %	12.4	12-14.4	
		Phosphorus, %	10.4	12	DEFICIENT
		Vitamin A, IU/ lb	390000.	300000	
		Zinc, ug/g (ppm)	15600.	12000	
	***#* MultuM Perfecta - NSE**		**99F-01021**		
		Calcium, %	12.6	12-14.4	
		Iodine, ppm	167.	88	
		Phosphorus, %	9.99	12	DEFICIENT
		Salt (ChlorideX1.65), %	18.8	12-14.4	EXCESSIVE
		Salt (Sodium X 2.54), %	19.4	12-14.4	EXCESSIVE
		Vitamin A, IU/ lb	487000.	150000	
	Hubbard SuperGain 14 C50		**99F-02609**		
		Crude Fiber, %	8.27	15	
		Chlortetracycline, g/ton	43.2	50	
		Crude Protein, %	15.1	14	
	***#* Hubbard Min Tech Sweet Mag 14 Mineral**		**99F-03255**		
		Calcium, %	8.80	7.5-8.9	
		Iodine, ppm	30.0	30	
		Magnesium, %	13.6	14	
		Phosphorus, %	3.15	4	DEFICIENT
		Salt (Sodium X 2.54), %	19.8	21.3-25.6	
		Selenium, ug/g (ppm)	11.4	12.5	
		Vitamin A, IU/ lb	64000.	50000	
	Hubbard Pelleted Midds Mix		**99F-03256**		
		Crude Protein, %	17.1	15.7	
	Lean start 11-14 MX 50		**99F-04257**		
		Carbadox, g/ton	43.2	50	
		Crude Fat, %	7.50	6	
		Crude Protein, %	22.7	20	
	14% Calf Creep B60 10%		**99F-04258**		
		Crude Fiber, %	9.45	10	
		Lasalocid, g/ton	60.1	60	
		Crude Protein, %	15.1	14	
	1015 Custom 20% Western Cake B150		**99F-04284**		
		Calcium, %	2.80	2-3	
		Crude Fiber, %	7.43	10	
		Lasalocid , g/ton	153.	150	
		Crude Protein, %	20.6	20	
		Salt (Sodium X 2.54), %	1.42	1-2	
		Vitamin A, IU/ lb	39000.	30000	
	1117 Custom Dairy, Super Gain 14 B27.2		**99F-04285**		
		Crude Fiber, %	8.87	15	
		Lasalocid, g/ton	26.6	27.2	
		Crude Protein, %	14.0	14	

Manufacturer Location	Product	Analyte	Found	Claim	
	Hubbard Range-N-Grow AS35		**99F-04293**		
		Crude Fiber, %	12.3	19.5	
		Chlortetracycline, mg/ lb	38.8	35	
		Crude Protein, %	13.9	12	
		Sulfamethazine, mg/ lb	31.2	35	
	***#* Hubbard Min-Tech Sweet Mag 14**		**99F-04600**		
		Calcium, %	9.03	7.5-9	
		Magnesium, %	10.3	14	DEFICIENT
		Phosphorus, %	4.71	4	
		Salt (Sodium X 2.54), %	23.7	21-25.2	
		Vitamin A, IU/ lb	66000.	50000	
	***#* Beef Pack R1200**		**99F-04804**		
		Calcium, %	7.97	5.6-6.3	EXCESSIVE
		Crude Fiber, %	7.75	11.8	
		Monensin, g/ton	906.	1200	
		Crude Protein, %	14.6	10.7	
	G-F Premix 65		**99F-07514**		
		Calcium, %	18.4	16.5-19.8	
		Lysine - Total, %	5.08	4.4	
		Phosphorus, %	8.58	9.3	
		Crude Protein, %	7.04	5.2	
		Salt (Sodium X 2.54), %	12.3	10.8-12.9	
		Selenium, ug/g (ppm)	13.8	9.2	
	14% Bull Power B60 Custom Mix Medicated (Lasolicid)		**99F-08221**		
		Lasalocid, g/ton	53.2	60	
	Grolean 16		**99F-08661**		
		Calcium, %	2.20	1.8-2.3	
		Crude Fiber, %	13.6	15	
		Crude Protein, %	17.4	16	
	***#* Super Gain 14 B60**		**99F-10189**		
		Crude Fiber, %	10.8	15	
		Lasalocid, g/ton	41.3	60	DEFICIENT
		Crude Protein, %	15.2	14	
	***#* Hi ADE Cake**		**99F-10480**		
		Crude Fiber, %	10.8	18	
		Crude Protein, %	15.7	12	
		Vitamin A, IU/ lb	280000.	500000	DEFICIENT
	Chlortetracycline Crumbles 10G Medicated		**99F-12087**		
		Chlortetracycline, g/ lb	11.2	10	
Hubbard Feeds, Inc. Rapid City, SD					
	***#* 20% Rangeland Cake**		**99F-03167**		
		Calcium, %	2.17	1.9-2.4	
		Crude Fiber, %	10.5	10	
		Crude Protein, %	19.1	20	DEFICIENT
		Vitamin A, IU/ lb	33000.	30000	
	***#* 30% Cotton Seed Cake**		**99F-03168**		
		Crude Fiber, %	13.6	12	EXCESSIVE
		Crude Protein, %	29.5	30	
		Vitamin A, IU/ lb	29000.	30000	
	Supergrain 114		**99F-03169**		
		Crude Fiber, %	8.36	15	
		Crude Protein, %	14.9	14	
	Soybean Meal 47% Protein		**99F-04292**		
		Crude Protein, %	47.3	47	
	Range N Grow Receiver AS70		**99F-10449**		
		Crude Fiber, %	13.2	19.5	
		Chlortetracycline, g/ton	128.	140	
		Crude Protein, %	13.5	12	
		Sulfamethazine , g/ton	134.	140	
	Hubbard Range N Grow Cotton Seed Pellet #1301-THARS		**99F-10450**		
		Crude Fiber, %	9.34	11.1	
		Crude Protein, %	22.2	21.8	

Manufacturer Location / Product	Analyte	Found	Claim	
Hubbard DM&G Bull Supplement R400		**99F-10451**		
	Monensin, g/ton	409.	400	
Aureo S 700		**99F-10452**		
	Chlortetracycline, g/ lb	34.1	35	
	Sulfamethazine, g/ lb	30.5	35	
Hubbard Milling Company **Whitewood, SD**				
Carmelyx 22%		**99F-10473**		
	Potassium, %	2.62	2.5	
	Crude Protein, %	25.0	22	
	Selenium, ug/g (ppm)	3.81	4.4	
	Vitamin A, IU/ lb	63000.	50000	
Huntting Elevator Company **Austin, MN**				
MF Pig Concentrate 1101		**99F-06420**		
	Calcium, %	2.02	1.7-2.7	
	Crude Fat, %	8.06	7	
	Lysine - Total, %	2.68	2.8	
	Crude Protein, %	34.6	34	
IAMS Company (The) **Lewisburg, OH**				
Iams Adult Premium Cat Food-Catfish		**00F-00034**		
	Ash, %	1.36	1.9	
	Crude Fat, %	9.25	6.5	
	Oven Moisture, %	76.1	78	
	Crude Protein, %	11.0	10	
	Taurine - Total, %	0.116	0.07	
J&R Distributing **Lake Norden, SD**				
***#* Lean cut Swine Finisher**		**99F-07374**		
	Calcium, %	5.08	3.5-4.5	EXCESSIVE
	Phosphorus, %	2.24	2	
	Crude Protein, %	40.8	41	
	Salt (Sodium X 2.54), %	3.11	3-5	
***#* Starter Conc.**		**99F-07375**		
	Calcium, %	3.09	2.25-3.25	
	Fat: Acid Hydrolysis, %	5.89	8	DEFICIENT
	Crude Protein, %	36.2	35	
	Salt (Sodium X 2.54), %	1.86	1.75-3	
John Morrell & Company **Sioux City, IA**				
***#* Porcine 50% Meat and Bone Meal**		**99F-01719**		
	Calcium, %	7.32	8.4-10	DEFICIENT
	Crude Fat, %	10.2	6	
	Phosphorus, %	3.61	4	DEFICIENT
	Crude Protein, %	49.6	50	
***#* Porcine 50% Meat and Bone Meal**		**99F-04265**		
	Calcium, %	7.14	8.4-10	DEFICIENT
	Crude Fat, %	11.1	6	
	Phosphorus, %	3.51	4	DEFICIENT
	Crude Protein, %	52.8	50	
***#* Porcine 50% Meat and Bone Meal**		**99F-09129**		
	Calcium, %	7.22	8.4-10	DEFICIENT
	Crude Fat, %	13.2	6	
	Phosphorus, %	3.69	4	
	Crude Protein, %	53.8	50	

Manufacturer Location / Product	Analyte	Found	Claim	
Jorgensen Laboratories Inc. Loveland, CO				
Farm Fresh Colostrum		**99F-02615**		
	Fat: Roese Gottlieb, %	12.1	0-25	
	Lactose, %	21.7	15	
	Oven Moisture, %	8.20	9	
	Crude Protein, %	45.2	45	
	Vitamin A, IU/ lb	26000.	30000	
JRB Foods Inc Cuyamoga Falls, OH				
Liver Treats for Dogs		**99F-00408**		
	Crude Fat, %	14.4	9	
	Oven Moisture, %	30.7	30	
	Crude Protein, %	28.5	25	
Kal Kan Foods Inc Vernon, CA				
Whiskas Original Recipe Cat Food		**99F-01883**		
	Fat: Acid Hydrolysis, %	9.70	8	
	Oven Moisture, %	9.56	12	
	Crude Protein, %	30.3	30	
	Taurine - Free, %	0.089	0.1	
Whiskas Canned Cat Food		**99F-03012**		
	Ash, %	2.53	3	
	Crude Fat, %	9.08	5	
	Oven Moisture, %	77.5	78	
	Crude Protein, %	9.73	9	
	Taurine - Free, %	0.052	0.05	
Kay Dee Feed Company Sioux City, IA				
Cattlemans's Choice 50 Block		**99F-01790**		
	Equiv Crude Protein, %	29.1	30	
	Iodine, ppm	118.	90	
	Crude Protein, %	49.0	50	
	Salt (Sodium X 2.54), %	19.6	16-19.2	
	Vitamin A, IU/ lb	68000.	50000	
KayDee A'n'Dee		**99F-01793**		
	Calcium, %	9.72	8-9.6	
	Crude Fiber, %	2.57	11	
	Crude Protein, %	10.2	10	
	Salt (Sodium X 2.54), %	0.94	1-2	
	Vitamin A, IU/ lb	2260000.	2000000	
KayDee A 'N' Dee		**99F-02610**		
	Calcium, %	8.77	8-9.6	
	Crude Protein, %	10.8	10	
	Salt (Sodium X 2.54), %	1.26	1-2	
	Vitamin A, IU/ lb	2140000.	2000000	
Kaydee Range Graze 20		**99F-02611**		
	Crude Protein, %	21.1	20	
	Salt (Sodium X 2.54), %	14.2	14.25-17	
	Vitamin A, IU/ lb	20000.	20000	
***#* Kaydets 12 Granular Mineral**		**99F-04283**		
	Calcium, %	14.9	13-15.6	
	Phosphorus, %	10.6	12	DEFICIENT
	Salt (Sodium X 2.54), %	18.2	15-18	
	Vitamin A, IU/ lb	392000.	200000	
Sheep- etts Granular Sheep Mineral		**99F-10187**		
	Calcium, %	22.1	20-24	
	Phosphorus, %	7.34	8	
	Salt (Sodium X 2.54), %	14.3	15-18	
	Sulfur, %	1.26	1	
	Vitamin A, IU/ lb	350000.	200000	

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Manufacturer Location / Product	Analyte	Found	Claim	
Kaytee Products Inc				
Chilton, WI				
KayTee Wild Finch Bird Seed		**99F-02991**		
	Crude Fiber, %	8.15	12	
	Crude Fat, %	21.3	15	
	Oven Moisture, %	7.34	12	
	Crude Protein, %	18.0	15	
Kent Feeds Inc				
Muscatine, IA				
Kent O Lass II		**99F-02204**		
	Crude Fiber, %	16.8	20	
	Crude Protein, %	8.66	6	
Kent 40% Diary		**99F-02205**		
	Crude Protein, %	40.0	40	
	Vitamin A, IU/ lb	18000.	20000	
Kent Pig Nuggets 20% M50B		**99F-03220**		
	Crude Fat, %	8.48	6	
	Crude Protein, %	20.1	20	
Kent Baby Beef 34%		**99F-03221**		
	Calcium, %	3.29	3.2-4.2	
	Crude Protein, %	36.6	34	
	Salt (ChlorideX1.65), %	1.81	1.6-2.1	
	Salt (Sodium X 2.54), %	1.91	1.6-2.1	
	Vitamin A, IU/ lb	28000.	30000	
Kent MG II Mineral		**99F-03222**		
	Calcium, %	6.31	5.5-6.7	
	Phosphorus, %	2.92	3	
	Salt (Sodium X 2.54), %	24.6	24-28.5	
	Vitamin A, IU/ lb	131000.	100000	
Creep Supreme Mixer 120B		**99F-04001**		
	Calcium, %	2.46	2-2.5	
	Crude Fiber, %	9.76		
	Lasalocid, g/ton	111.	120	
	Crude Protein, %	25.4	24	
	Vitamin A, IU/ lb	26000.	20000	
ADE Mineral		**99F-04002**		
	Calcium, %	15.8	15-18	
	Phosphorus, %	7.51	8	
	Salt (Sodium X 2.54), %	22.2	17-20.4	
	Selenium, ug/g (ppm)	30.0	28	
	Vitamin A, IU/ lb	568000.	400000	
***#* Liquid LIQ-N-GAIN 32 (Bulk)**		**99F-04494**		
	Equiv Crude Protein, %	24.6	25	
	Lasalocid, g/ton	174.	240	DEFICIENT
	Vacuum Moisture, %	39.8	40	
	Crude Protein, %	33.2	32	
	Salt (Sodium X 2.54), %	2.15	1.6-2.1	
	Total Sugars(Invert), %	21.0	23	
	Vitamin A, IU/ lb	7500.	30000	DEFICIENT
Kent Feeds Inc				
Sioux City, IA				
Kent Western 12:12 Mineral		**99F-04814**		
	Calcium, %	12.9	11-13.2	
	Phosphorus, %	11.6	12	
	Salt (Sodium X 2.54), %	8.80	7.4-8.8	
	Selenium, ug/g (ppm)	7.35	7	
	Vitamin A, IU/ lb	301000.	200000	
Kent Western Breeder Mineral		**99F-04815**		
	Calcium, %	13.5	12-14.4	
	Phosphorus, %	8.14	8.5	
	Selenium, ug/g (ppm)	28.7	33	
	Vitamin A, IU/ lb	665000.	400000	

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Manufacturer Location / Product	Analyte	Found	Claim	
Land O Lakes Ag Services Volga, SD				
***#* Pro Leader**		**99F-00063**		
	Calcium, %	2.29	3.8-4.8	DEFICIENT
	Lysine - Total, %	2.65	2.56	
	Phosphorus, %	1.43	2	DEFICIENT
	Crude Protein, %	45.0	40	
	Salt (Sodium X 2.54), %	1.46	1.7-2.2	
Sweet 12 Horse Feed		**99F-08229**		
	Crude Protein, %	13.7	12	
Land O Lakes Inc. Fort Dodge, IA				
Ranger 20N		**99F-00252**		
	Crude Fiber, %	11.6	12	
	Crude Protein, %	19.7	20	
	Salt (Sodium X 2.54), %	1.99	1.5-2	
	Vitamin A, IU/ lb	19000.	20000	
Beef Grower 38-13 R 300 Medicated		**99F-00812**		
	Calcium, %	4.56	4-5	
	Crude Fiber, %	11.7	15	
	Monensin, g/ton	272.	300	
	Crude Protein, %	38.8	38	
	Salt (Sodium X 2.54), %	3.77	3-4	
	Vitamin A, IU/ lb	38000.	40000	
Beef Grower 38-13		**99F-01878**		
	Calcium, %	4.69	4-5	
	Crude Fiber, %	8.84	15	
	Equiv Crude Protein, %	13.5	13	
	Crude Protein, %	40.3	38	
	Salt (Sodium X 2.54), %	3.79	3.5-4.5	
	Vitamin A, IU/ lb	40000.	40000	
Beef Finisher 50-25 R300		**99F-02785**		
	Calcium, %	8.13	8-9	
	Crude Fiber, %	10.8	15	
	Equiv Crude Protein, %	26.2	25	
	Monensin, g/ton	292.	300	
	Potassium, %	2.56	2.5	
	Crude Protein, %	49.7	50	
	Salt (Sodium X 2.54), %	3.65	3.5-4.5	
	Vitamin A, IU/ lb	46000.	40000	
***#* Sweet - Start - Supreme (made)**		**99F-04226**		
	Acid Detergent Fiber, %	4.61	5.5	
	Decoquinate, %	0.005	0.005	
	Crude Protein, %	16.4	18	DEFICIENT
	Vitamin A, IU/ lb	20000.	20000	
Country Choice Balancer		**99F-04752**		
	Calcium, %	3.02	2.6-3.6	
	Lysine - Total, %	2.04	2.1	
	Methionine - Total, %	0.533	0.65	
	Crude Protein, %	39.9	38	
44% Soybean Meal		**99F-04753**		
	Crude Protein, %	45.5	44	
Dairy Feedlot Grower B150 Medicated		**99F-04754**		
	Calcium, %	3.88	2.7-3.7	
	Crude Fiber, %	9.32	19	
	Lasalocid, g/ton	146.	150	
	Crude Protein, %	36.2	35	
	Vitamin A, IU/ lb	21000.	20000	
Instant Maxi Care NT Medicated		**99F-06618**		
	Fat: Roese Gottlieb, %	19.2	20	
	Oxytetracycline, g/ton	112.	125	
	Crude Protein, %	22.3	22	
	Vitamin A, IU/ lb	16000.	20000	

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Manufacturer Location	Product	Analyte	Found	Claim
	Country Choice Chick Grower A		**99F-06619**	
		Amprolium, %	0.0080	0.0095
		Lysine - Total, %	0.541	0.6
		Methionine - Total, %	0.243	0.28
		Crude Protein, %	16.3	16
	Complete Horse		**99F-06620**	
		Crude Fiber, %	19.5	24.5
		Crude Protein, %	13.3	11
	Beef Grower 38N B500		**99F-07370**	
		Calcium, %	4.48	4.1-5.1
		Crude Fiber, %	3.73	15
		Lasalocid, g/ton	457.	500
		Crude Protein, %	39.6	38
		Salt (Sodium X 2.54), %	3.88	3.5-4.5
		Vitamin A, IU/ lb	31000.	40000
	Dairy Feedlot Finisher R250T		**99F-07371**	
		Calcium, %	4.98	4.6-5.5
		Crude Fiber, %	14.1	18
		Equiv Crude Protein, %	15.9	15
		Monensin, g/ton	243.	250
		Potassium, %	2.46	2.5
		Crude Protein, %	36.5	35
		Salt (Sodium X 2.54), %	2.82	2-2.5
		Tylosin, g/ton	92.5	90
		Vitamin A, IU/ lb	22000.	20000
	Dairy Buffer Pak Dairy Cattle Mineral		**99F-07372**	
		Calcium, %	5.71	4.6-5.5
		Magnesium, %	9.09	9.4
		Sodium, %	14.2	13.2-15.8
	Calf Creep		**99F-07508**	
		Crude Fiber, %	18.2	18
		Crude Protein, %	16.8	14
	Country Choice-Balancer (Poultry)		**99F-07509**	
		Calcium, %	2.65	2.6-3.6
		Lysine - Total, %	1.85	2.1
		Methionine - Total, %	0.632	0.65
		Crude Protein, %	37.2	38
	Beef Finisher		**99F-07510**	
		Calcium, %	7.72	7.8-9.3
		Crude Fiber, %	6.29	15
		Equiv Crude Protein, %	26.6	28
		Monensin, g/ton	472.	500
		Phosphorus, %	0.680	0.5
		Potassium, %	2.43	2.5
		Crude Protein, %	40.1	40
		Salt (Sodium X 2.54), %	3.57	3.5-4.5
		Vitamin A, IU/ lb	35000.	40000
	Pig Starter Mixer		**99F-07749**	
		Calcium, %	2.06	2.1-2.6
		Crude Fat, %	8.08	7
		Lysine - Total, %	2.82	3.1
		Crude Protein, %	44.5	41
	Market Lamb 3840		**99F-07750**	
		Calcium, %	4.41	4.1-5.1
		Equiv Crude Protein, %	10.6	10
		Lasalocid , g/ton	139.	136
		Crude Protein, %	39.2	38
		Salt (Sodium X 2.54), %	3.42	3.5-4.5
		Vitamin A, IU/ lb	44300.	20000
	Future Cow Starter Bov Medicated		**99F-07751**	
		Acid Detergent Fiber, %	6.43	9.5
		Lasalocid, g/ton	81.0	90
		Crude Protein, %	18.0	18
		Vitamin A, IU/ lb	21000.	20000

Manufacturer Location	Product	Analyte	Found	Claim	
	Triple 12 Mineral		**99F-08222**		
		Calcium, %	13.4	12-14	
		Chlortetracycline, g/ton	5510.	5600	
		Iodine, ppm	122.	113	
		Magnesium, %	2.56	2.75	
		Phosphorus, %	11.4	12	
		Salt (Sodium X 2.54), %	13.0	12-14	
		Selenium, ug/g (ppm)	31.8	36	
		Vitamin A, IU/ lb	113000.	150000	
	***#* Beef Grower 38N**		**99F-08223**		
		Calcium, %	4.63	4.1-5.1	
		Crude Fiber, %	6.63	15	
		Crude Protein, %	40.0	38	
		Salt (Sodium X 2.54), %	3.55	3.5-4.5	
		Vitamin A, IU/ lb	7400.	40000	DEFICIENT
	Beef finisher 40-28 R500		**99F-08224**		
		Calcium, %	8.33	7.8-9.3	
		Crude Fiber, %	9.48	15	
		Equiv Crude Protein, %	27.5	28	
		Monensin, g/ton	469.	500	
		Potassium, %	2.51	2.5	
		Crude Protein, %	39.2	40	
		Salt (Sodium X 2.54), %	3.49	3.5-4.5	
		Vitamin A, IU/ lb	55000.	40000	
	Sheep Conc. 38 B136		**99F-08228**		
		Calcium, %	2.14	2-2.5	
		Lasalocid, g/ton	138.	136	
		Crude Protein, %	38.9	38	
		Salt (Sodium X 2.54), %	1.87	1.5-2	
		Vitamin A, IU/ lb	18000.	20000	
	Medi Flex 250 Med		**99F-08230**		
		Chlortetracycline, g/ lb	8.76	10	
		Sulfathiazole, %	1.83	2.2	
	Sweet'ner molasses		**99F-08593**		
		Crude Fiber, %	25.6	24	
Land O Lakes/Harvest States Edgeley, ND					
	Calf Creep B-60		**99F-04813**		
		Crude Fiber, %	15.0	19	
		Lasalocid, g/ton	59.2	60	
		Crude Protein, %	16.1	14	
Land O Lakes/Harvest States Ft. Dodge, IA					
	Gluten Balancer R1200		**99F-01782**		
		Calcium, %	14.7	14-16.9	
		Iodine, ppm	20.0	13	
		Monensin, g/ton	1150.	1200	
		Salt (Sodium X 2.54), %	5.73	5.5-6.5	
		Selenium, ug/g (ppm)	5.22	5	
		Vitamin A, IU/ lb	70000.	50000	
	Gluten Balancer R1200		**99F-04287**		
		Calcium, %	14.7	14-16.9	
		Monensin, g/ton	982.	1200	
		Salt (Sodium X 2.54), %	5.69	5.5-6.5	
		Vitamin A, IU/ lb	55000.	50000	
	Beef Grower 38N		**99F-06407**		
		Calcium, %	4.87	4-5	
		Crude Fiber, %	6.12	15	
		Crude Protein, %	38.7	38	
		Salt (Sodium X 2.54), %	3.19	3-4	
		Vitamin A, IU/ lb	39000.	40000	
	Country Choice Chick Grower A Medicated		**99F-10465**		
		Amprolium, %	0.0103	0.0095	
		Crude Protein, %	17.2	16	

Manufacturer Location / Product	Analyte	Found	Claim	
Land O'Lakes/Harvest States Gettysburg, SD				
Bull Challenger R30 Medicated		**99F-01791**		
	Crude Fiber, %	11.2	16	
	Equiv Crude Protein, %	0.43	1.5	
	Monensin, g/ton	27.5	30	
	Crude Protein, %	15.1	14	
***#* 20% Custom Elk Supplement (#1)**		**99F-01792**		
	Calcium, %	2.17	1.75-2.25	
	Crude Fiber, %	7.94	10	
	Crude Protein, %	19.0	20	DEFICIENT
	Salt (Sodium X 2.54), %	2.23	2-2.5	
	Vitamin A, IU/ lb	37000.	45000	
***#* Ranger 20N - Block**		**99F-04137**		
	Crude Protein, %	19.6	20	
	Salt (ChlorideX1.65), %	9.72	11-13	DEFICIENT
	Salt (Sodium X 2.54), %	9.70	11-13	DEFICIENT
	Vitamin A, IU/ lb	20000.	20000	
Land O'Lakes/Harvest States Sioux Falls, SD				
Krumble - ADE - DP		**99F-00813**		
	Chlortetracycline, g/ lb	4.39	4	
	Vitamin A, IU/ lb	216000.	200000	
44% Soybean Meal Sol. Ext.		**99F-00991**		
	Crude Protein, %	45.6	44	
Bull Challenger		**99F-00992**		
	Crude Fiber, %	11.5	16	
	Equiv Crude Protein, %	1.65	1.5	
	Crude Protein, %	15.9	14	
Krumble-ADE DP Medicated		**99F-00993**		
	Chlortetracycline, g/ lb	4.19	4	
	Vitamin A, IU/ lb	244000.	200000	
Koxy Krumbles Medicated		**99F-01723**		
	Amprolium, %	1.12	1.25	
Triple 12 Cattle Mineral		**99F-01783**		
	Calcium, %	13.9	12-14	
	Iodine, ppm	91.0	100	
	Magnesium, %	2.55	2.75	
	Phosphorus, %	11.6	12	
	Salt (Sodium X 2.54), %	12.2	12-14	
	Vitamin A, IU/ lb	123000.	150000	
Calf Creep		**99F-01784**		
	Crude Fiber, %	13.3	19	
	Crude Protein, %	15.0	14	
***#* Triple 12 Cattle Mineral**		**99F-01879**		
	Calcium, %	12.7	12-14	
	Iodine, ppm	147.	100	
	Magnesium, %	3.60	2.75	
	Phosphorus, %	11.2	12	
	Salt (Sodium X 2.54), %	13.2	12-14	
	Selenium, ug/g (ppm)	34.0	35	
	Vitamin A, IU/ lb	83000.	150000	DEFICIENT
Trace Mineral Salt		**99F-02983**		
	Salt (Sodium X 2.54), %	90.3	93-97	
***#* Beef Finisher 40-20 B550**		**99F-03323**		
	Calcium, %	8.79	8-9	
	Crude Fiber, %	6.51	15	
	Equiv Crude Protein, %	18.9	20	
	Lasalocid, g/ton	572.	550	
	Potassium, %	2.64	2.5	
	Crude Protein, %	36.9	40	DEFICIENT
	Salt (Sodium X 2.54), %	4.10	3-4	
	Vitamin A, IU/ lb	47000.	40000	

#* = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
#	**Forager 32N Blox**		**99F-03324**		
		Calcium, %	1.98	1.5-2	
		Crude Protein, %	30.1	32	DEFICIENT
		Salt (Sodium X 2.54), %	11.6	11-13	
		Vitamin A, IU/ lb	29000.	30000	
	Land O Lakes Tetra Krumbles DP		**99F-04022**		
		Oxytetracycline, g/ lb	3.38	4	
		Vitamin A, IU/ lb	152000.	100000	
	Land O Lakes Beef Mix R1200 Medicated		**99F-04023**		
		Calcium, %	8.20	8-9	
		Crude Fiber, %	10.6	11	
		Monensin, g/ton	975.	1200	
		Crude Protein, %	10.7	8	
		Salt (Sodium X 2.54), %	5.54	5-6	
		Vitamin A, IU/ lb	100000.	75000	
	Land O Lakes Pork Six in One		**99F-04024**		
		Calcium, %	4.14	3.5-4.5	
		Lysine - Total, %	2.70	2.75	
		Crude Protein, %	38.7	38	
		Salt (Sodium X 2.54), %	2.55	2-2.5	
#	**LOL Country Choice Poultry Concentrate 38**		**99F-04025**		
		Calcium, %	5.15	4.75-5.25	
		Lysine - Total, %	1.91	2.1	
		Methionine - Total, %	0.601	0.6	
		Crude Protein, %	36.8	38	DEFICIENT
		Salt (Sodium X 2.54), %	2.08	1.5-2	
	Koxy Krumbles		**99F-04288**		
		Amprolium, %	1.32	1.25	
	12-6 Cattle Mineral		**99F-04289**		
		Calcium, %	12.3	10-12	
		Phosphorus, %	5.86	6	
		Salt (Sodium X 2.54), %	18.2	18-20	
		Vitamin A, IU/ lb	114000.	150000	
	44% Soybean Meal Solvent Extracted		**99F-04290**		
		Ash, %	5.66	8	
		Crude Protein, %	46.8	44	
	Complete Layer		**99F-04291**		
		Calcium, %	3.55	3.5-4	
		Lysine - Total, %	0.661	0.7	
		Methionine - Total, %	0.240	0.27	
		Crude Protein, %	16.0	16	
	Soybean Meal SE		**99F-05593**		
		Ash, %	5.68	8	
		Crude Protein, %	43.0	44	
#	**Soybean Meal SE**		**99F-05594**		
		Crude Protein, %	42.3	44	DEFICIENT
	Triple 12 Cattle Mineral		**99F-05890**		
		Calcium, %	13.9	12-14	
		Iodine, ppm	101.	113	
		Magnesium, %	2.65	2.75	
		Phosphorus, %	11.4	12	
		Salt (Sodium X 2.54), %	12.3	12-14	
		Vitamin A, IU/ lb	160000.	150000	
	Land O Lakes Pork Supreme L.G. Premix		**99F-05891**		
		Calcium, %	21.0	19.6-23.5	
		Phosphorus, %	9.66	10	
		Salt (Sodium X 2.54), %	11.3	10.8-13	
		Selenium, ug/g (ppm)	4.94	6	
		Vitamin A, IU/ lb	210000.	120000	
	Country Swine 650 Tyl20		**99F-05898**		
		Crude Protein, %	12.9	13	
		Tylosin, g/ton	21.7	20	

#* = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Beef Grower R38A B500		**99F-05899**		
		Calcium, %	4.67	4.1-5.1	
		Crude Fiber, %	5.45	15	
		Lasalocid, g/ton	503.	500	
		Crude Protein, %	40.5	38	
		Salt (Sodium X 2.54), %	3.66	3.5-4.5	
		Vitamin A, IU/ lb	41000.	40000	
	Beef Finisher 40-28		**99F-05900**		
		Calcium, %	9.18	7.8-9.3	
		Crude Fiber, %	7.51	15	
		Equiv Crude Protein, %	27.6	28	
		Potassium, %	2.70	2.5	
		Crude Protein, %	40.6	40	
		Salt (Sodium X 2.54), %	4.14	3.5-4.5	
		Vitamin A, IU/ lb	49000.	40000	
	Six - in - one		**99F-06409**		
		Calcium, %	4.21	3.5-4.5	
		Lysine - Total, %	2.72	2.75	
		Crude Protein, %	39.1	38	
		Salt (Sodium X 2.54), %	2.41	2-2.5	
	Country Horse For All Classes		**99F-06621**		
		Crude Protein, %	13.2	12	
	Six-in One		**99F-09147**		
		Calcium, %	3.83	3.5-4.5	
		Lysine - Total, %	2.61	2.75	
		Crude Protein, %	38.9	38	
		Salt (Sodium X 2.54), %	2.24	2-2.5	
	Calf Creep B60 Medicated		**99F-09148**		
		Crude Fiber, %	17.0	18	
		Lasalocid, g/ton	59.2	60	
		Crude Protein, %	21.8	14	
	***#* Rum-Liq 33**		**99F-10464**		
		Equiv Crude Protein, %	28.0	30	
		Vacuum Moisture, %	36.6	36	
		Potassium, %	2.56	3	
		Crude Protein, %	35.0	33	
		Vitamin A, IU/ lb	226.	45000	DEFICIENT
	Custom Mix Liq		**99F-10466**		
		Vacuum Moisture, %	32.7	36	
		Crude Protein, %	11.4	9.5	
		Salt (Sodium X 2.54), %	6.55	6.5-8	
	Koxy Krumbles-Medicated		**99F-10467**		
		Amprolium, %	1.08	1.25	
	Krumble-ade DP (medicated)		**99F-10468**		
		Chlortetracycline, g/ lb	3.93	4	
		Vitamin A, IU/ lb	179000.	200000	
Lamesa Cotton Oil Mill **Lamesa, TX**					
	***#* 41% Protein Sol. Ext Cottonseed Meal**		**99F-00346**		
		Crude Fiber, %	11.4	14	
		Crude Protein, %	38.4	41	DEFICIENT
Lesterville Feed & Grain **Lesterville, SD**					
	Soybean meal 46 1/2 solvent Extracted		**99F-04550**		
		Ash, %	6.74	8	
		Crude Protein, %	46.4	46.5	
	Country Mix Concentrate		**99F-04551**		
		Calcium, %	4.03	3.8-4.8	
		Lysine - Total, %	2.66	2.9	
		Crude Protein, %	41.7	40	
		Salt (Sodium X 2.54), %	2.11	1.5-2.2	

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Manufacturer Location	Product	Analyte	Found	Claim	
Lextron Animal Health Greeley, CO					
	Cocci Med 568		**99F-07748**		
		Crude Fiber, %	11.1	15	
		Decoquinate, %	0.119	0.125	
McCook Feed & Fertilizer Canistota, SD					
	Custom mix		**99F-07373**		
		Lasalocid, g/ton	60.0	63	
McFleeg Inc Watertown, SD					
	McFleeg Supreme Gilt Developer		**99F-05379**		
		Calcium, %	12.7	11-13	
		Crude Fat, %	6.21	5	
		Phosphorus, %	4.59	5	
		Crude Protein, %	26.0	25	
	***#* XL-3 Range Mineral**		**99F-12088**		
		Calcium, %	10.1	9-10.8	
		Phosphorus, %	5.47	6	DEFICIENT
		Potassium, %	3.58	4	
		Salt (Sodium X 2.54), %	7.72	7.5	
		Vitamin A, IU/ lb	395000.	400000	
Merial Limited Iselin, NJ					
	Amprovine 25% Type A		**99F-04773**		
		Amprolium, %	26.9	25	
Metz Farms Grand Rapids, MI					
	Squirola KOB		**99F-05903**		
		Crude Fat, %	8.82	6	
		Crude Protein, %	14.4	11	
Mid-States Distributing Company St Paul, MN					
	Cat food		**99F-08231**		
		Fat: Acid Hydrolysis, %	8.38	9	
		Oven Moisture, %	6.88	12	
		Crude Protein, %	31.8	31.5	
Midwest PMS Minatore, NE					
	Molasses and water		**99F-05596**		
		Vacuum Moisture, %	36.0	39	
		Crude Protein, %	8.84	6	
Milk Specialties Company Dundee, IL					
	Advance Energy Booster 100		**99F-00222**		
		Crude Fat, %	98.2	98	
		Karl Fisher Moisture, %	0.08	1	
		Oven Moisture, %	0.80	1	
	Energy Booster		**99F-10469**		
		Crude Fat, %	100.	98	
		Oven Moisture, %	0.97	1	
Millbrook Feed Mill Mitchell, SD					
	Gold Calving and Breeding 12-12-12 Range Mineral		**99F-05791**		
		Calcium, %	12.8	11-13	
		Iodine, ppm	153.	155	
		Magnesium, %	2.04	2	
		Phosphorus, %	11.3	12	
		Potassium, %	2.04	2	
		Salt (Sodium X 2.54), %	11.7	11-13	
		Selenium, ug/g (ppm)	60.9	75	
		Vitamin A, IU/ lb	525000.	400000	

Manufacturer Location	Product	Analyte	Found	Claim	
Moorman Mfg Company **Quincy, IL**					
	Moorman's OptiCor Range Mineral A HiPhos		**99F-05157**		
		Calcium, %	12.1	11-13.2	
		Copper, ug/g(ppm)	1080.	1100	
		Magnesium, %	2.68	2.5	
		Phosphorus, %	11.9	12	
		Salt (Sodium X 2.54), %	16.6	14-16.8	
		Selenium, ug/g (ppm)	38.5	39	
		Vitamin A, IU/ lb	271000.	200000	
		Zinc, ug/g(ppm)	4050.	3800	
	***#* MoorMan's Beef-trate Heifer RV/MGA**		**99F-05158**		
		Calcium, %	8.69	7.8-9.3	
		Monensin, mg/ lb	260.	300	
		Crude Protein, %	83.3	80	
		Vitamin A, IU/ lb	40500.	60000	DEFICIENT
	Moormans Gro Strong Hi-Phos Quad Block		**99F-05909**		
		Calcium, %	12.6	11-13.2	
		Phosphorus, %	9.94	10	
		Salt (Sodium X 2.54), %	31.0	26-31	
		Selenium, ug/g (ppm)	35.2	36	
		Vitamin A, IU/ lb	341000.	300000	
		Zinc, ug/g (ppm)	12500.	11500	
Muellers Feed Mill **Martin, SD**					
	13 Hi-Energy Cube		**99F-03820**		
		Crude Fiber, %	4.67	12	
		Crude Protein, %	13.4	13	
	***#* Beef Ranger 20**		**99F-03821**		
		Crude Fiber, %	8.33	12	
		Crude Protein, %	19.2	20	DEFICIENT
		Vitamin A, IU/ lb	35000.	30000	
	***#* Beef Ranger 20**		**99F-07052**		
		Crude Fiber, %	9.81	12	
		Crude Protein, %	19.5	20	
		Vitamin A, IU/ lb	19000.	30000	DEFICIENT
Nabisco Foods **E Hanover, NJ**					
	Milk Bone - Medium		**99F-03004**		
		Fat: Acid Hydrolysis, %	5.73	5	
		Oven Moisture, %	6.78	10	
		Crude Protein, %	20.8	17	
Nash Finch **Minneapolis, MN**					
	***#* Our Family Cat Food Beef and Liver Dinner**		**99F-03563**		
		Ash, %	2.58	3	
		Crude Fat, %	8.29	6	
		Oven Moisture, %	77.0	78	
		Crude Protein, %	9.79	11	DEFICIENT
		Taurine - Free, %	0.066	0.05	
National By-Products Inc **Omaha, NE**					
	60% Fish Meal		**99F-04803**		
		Calcium, %	5.15	4.5-5.5	
		Crude Fat, %	8.02	5	
		Phosphorus, %	2.80	3	
		Crude Protein, %	65.2	60	

Manufacturer / Location / Product	Analyte	Found	Claim
Natures Gold			
Pleasant Plain, OH			
Hampster/Gerbil Food		**99F-03000**	
	Oven Moisture, %	11.6	12
	Crude Protein, %	12.2	12
Cockatiel Food		**99F-03001**	
	Crude Fiber, %	5.57	10
	Crude Fat, %	9.20	7.5
	Oven Moisture, %	11.1	10
	Crude Protein, %	12.5	12
New Generation Feeds			
Belle Fourche, SD			
Stress Lic		**99F-03387**	
	Acid Detergent Fiber, %	2.04	2
	Calcium, %	2.12	2.3-2.8
	Fat: Roese Gottlieb, %	5.22	5
	Iodine, ppm	29.0	30
	Phosphorus, %	1.86	2
	Potassium, %	2.48	2.5
	Crude Protein, %	12.7	12
	Selenium, ug/g (ppm)	8.06	8.8
	Vitamin A, IU/ lb	142000.	100000
Dry Cow Lic		**99F-10472**	
	Acid Detergent Fiber, %	0.87	2
	Equiv Crude Protein, %	6.10	8
	Phosphorus, %	1.94	2
	Potassium, %	3.73	2.5
	Crude Protein, %	18.8	16
	Selenium, ug/g (ppm)	7.24	8.8
	Vitamin A, IU/ lb	73000.	100000
North American Animal Health			
Lee's Summit, MO			
Mecadox 10		**99D-05897**	
	Carbadox, g/ lb	9.83	10
North Dakota Mill & Elevator			
Grand Forks, ND			
Wheat Middlings and Ground Grain Screenings		**99F-01716**	
	Ash, %	5.22	6.5
	Crude Protein, %	17.9	14.5
Nutra-Lix Inc			
Billings, MT			
Nutra-Lix Solid 20%		**99F-03570**	
	Fat: Roese Gottlieb, %	6.49	5
	Iodine, ppm	28.0	22
	Potassium, %	2.69	2
	Crude Protein, %	22.4	20
	Selenium, ug/g (ppm)	5.59	6.6
	Vitamin A, IU/ lb	54000.	60000
Pedigree Inc			
Vernon, CA			
Pedigree Country Stew (Dog food)		**99F-01884**	
	Oven Moisture, %	79.0	82
	Crude Protein, %	9.11	8
Pedigree Little Champions		**99F-05906**	
	Oven Moisture, %	80.5	82
	Crude Protein, %	8.71	8

Manufacturer Location	Product	Analyte	Found	Claim	
Pennfield Animal Health Omaha, NE					
	Pennchlor 50		**99F-10460**		
		Chlortetracycline, g/ lb	48.9	50	
Pet Products Plus, Inc. St Peters, MO					
	Kasco Cat Food		**99F-02734**		
		Ash, %	6.96	6.5	
		Crude Fat, %	19.6	20	
		Oven Moisture, %	6.84	11	
		Crude Protein, %	32.0	30	
		Taurine - Free, %	0.148	0.1	
Pet-Ag Inc. Hampshire, IL					
	Milk Replacer For Kittens		**99F-01340**		
		Ash, %	1.06	1.5	
		Oven Moisture, %	82.8	82	
		Crude Protein, %	7.63	7.5	
PM Ag Products Inc Homewood, IL					
	Bloat Guard Sweet Lix Block (medicated)		**99F-04142**		
		Crude Fiber, %	10.8	12.5	
		Salt (Sodium X 2.54), %	18.0	19.5-23	
	***#* Sweet Lix Bloat Guard**		**99F-05908**		
		Crude Fiber, %	11.7	12.5	
		Salt (ChlorideX1.65), %	17.0	19.5-23	DEFICIENT
		Salt (Sodium X 2.54), %	16.1	19.5-23	DEFICIENT
Prangers Feed Mill Platte, SD					
	Complete Hog Feed MDX		**99F-03620**		
		Carbadox, g/ton	47.6	50	
Purina Mills Minneapolis, MN					
	Meat Builder		**99F-05376**		
		Lysine - Total, %	0.940	0.95	
		Methionine - Total, %	0.333	0.35	
		Crude Protein, %	20.6	20	
Purina Mills St. Louis, MO					
	Cattle Mineral 12:12 - Purina		**99F-01467**		
		Calcium, %	13.3	12-14	
		Phosphorus, %	11.3	12	
		Salt (Sodium X 2.54), %	3.46	3-4	
		Vitamin A, IU/ lb	141000.	150000	
	R-P-B-7 RM 600 Beef Mineral		**99F-01468**		
		Calcium, %	13.0	11.5-12.5	
		Monensin, g/ton	548.	600	
		Phosphorus, %	5.65	5	
		Crude Protein, %	6.80	7	
		Salt (Sodium X 2.54), %	16.8	17.5-21	
		Vitamin A, IU/ lb	135000.	100000	
	Producer's Pride Scratch Grain		**99F-01881**		
		Crude Protein, %	8.59	8.5	
	Producers Pride 10% Sweet Feed		**99F-01882**		
		Crude Fiber, %	13.3	18.5	
		Crude Protein, %	9.94	10	
	Purina Dairy Conc. 38% WCS		**99F-02586**		
		Acid Detergent Fiber, %	13.8	18	
		Calcium, %	2.00	1.5-2.5	
		Crude Fiber, %	9.99	12.5	
		Equiv Crude Protein, %	8.71	8	
		Crude Protein, %	39.2	38	

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Manufacturer Location	Product	Analyte	Found	Claim
	Purina Show Chow 32		**99F-02587**	
		Calcium, %	3.52	3-4
		Crude Fiber, %	9.67	13
		Crude Protein, %	31.5	32
		Salt (Sodium X 2.54), %	3.88	3.5-4.5
		Vitamin A, IU/ lb	21000.	26000
	Purina Rabbit Chow Complete Blend		**99F-03382**	
		Crude Fiber, %	15.9	15
		Crude Protein, %	17.2	16
	Purina Duck Grower W/O		**99F-03383**	
		Lysine - Total, %	0.798	0.63
		Methionine - Total, %	0.265	0.3
		Crude Protein, %	17.1	16
	Stimupak (Medicated) CDX 2000		**99F-03622**	
		Calcium, %	2.84	3-4
		Carbadox , g/ton	1990.	2000
		Crude Fat, %	10.1	7
		Lysine - Total, %	2.53	2.3
		Crude Protein, %	42.2	33
		Salt (Sodium X 2.54), %	2.05	1.5-2.5
	3334 Lamb Balancer (med) BUT 200		**99F-03771**	
		Calcium, %	5.20	4.5-5.5
		Crude Fiber, %	12.1	12
		Equiv Crude Protein, %	10.4	10
		Lasalocid , g/ton	204.	200
		Crude Protein, %	32.4	32
		Salt (Sodium X 2.54), %	3.51	3-4
	Purina Fly Larvicide (Feed Mix)		**99F-03773**	
		Tetrachlorvinphos, %	7.82	7.76
	Purina Health Products A-S 700 ETTS		**99F-03782**	
		Crude Fiber, %	10.5	27.9
		Chlortetracycline, g/ lb	1.62	2
		Salt (Sodium X 2.54), %	3.83	3.8-4.8
		Sulfamethazine, %	0.424	0.44
	Start and Grow 6042		**99F-04388**	
		Lysine - Total, %	0.922	0.85
		Methionine - Total, %	0.262	0.3
		Crude Protein, %	18.1	17
	Creep Chow N 3104		**99F-04389**	
		Crude Protein, %	15.0	13
	Purina Strategy		**99F-04598**	
		Crude Fat, %	7.72	6
		Crude Protein, %	15.8	14
Ragland Mills Inc **Neosho, MO**				
	Ragland High Performance Horse Block		**99F-05787**	
		Calcium, %	5.23	4-5
		Crude Protein, %	16.4	16
		Salt (Sodium X 2.54), %	16.0	14-16
		Vitamin A, IU/ lb	32000.	20000
Ralco Mix Products Inc **Marshall, MN**				
	Custom All Seasons Range Mix #15270		**99F-00989**	
		Calcium, %	13.4	10.5-12.5
		Iodine, ppm	188.	70
		Phosphorus, %	4.78	5
		Salt (Sodium X 2.54), %	9.83	10-12
		Selenium, ug/g (ppm)	74.7	26
		Sulfur, %	1.97	1.3
		Vitamin A, IU/ lb	525000.	400000

Manufacturer Location / Product	Analyte	Found	Claim
Custom All Season Range Cow/Calf Protein Mineral		**99F-00990**	
	Calcium, %	4.78	4-5
	Iodine, ppm	46.0	22
	Crude Protein, %	18.1	16.6
	Salt (Sodium X 2.54), %	40.4	34-39
	Selenium, ug/g (ppm)	22.3	6.6
	Vitamin A, IU/ lb	176000.	40000
Ralston Purina Company St. Louis, MO			
Beggin Strips		**99F-03002**	
	Fat: Acid Hydrolysis, %	6.15	4-7
	Oven Moisture, %	21.9	23
	Crude Protein, %	16.1	15
Kit 'N' Kaboodle		**99F-03243**	
	Crude Fat, %	12.4	8
	Oven Moisture, %	5.88	12
	Crude Protein, %	32.8	30
Purina Dog Chow		**99F-08507**	
	Fat: Acid Hydrolysis, %	11.3	10
	Linoleic Acid 18:2, %	2.080	1.5
	Oven Moisture, %	8.54	12
	Crude Protein, %	22.2	21
Purina One Salmon and Tuna		**99F-08509**	
	Fat: Acid Hydrolysis, %	10.6	9
	Oven Moisture, %	5.54	12
	Crude Protein, %	36.8	31
	Taurine - Total, %	0.203	0.15
Purina One		**99F-08510**	
	Fat: Acid Hydrolysis, %	16.5	16
	Linoleic Acid 18:2, %	2.400	1.4
	Oven Moisture, %	6.48	12
	Crude Protein, %	29.1	26
Ramona Warehouse Ramona, SD			
Ramona Horse Feed No. 5500		**99F-04387**	
	Crude Fat, %	7.63	5
	Crude Protein, %	13.7	13
Dry Whole Extruded Soybeans No 9019		**99F-10461**	
	Crude Fat, %	19.0	18
	Crude Protein, %	37.1	36
Rancher Feed & Seed Buffalo Gap, SD			
Hen Feed		**99F-04280**	
	Crude Protein, %	10.9	10
Ranchers Choice Foods Inc. Yankton, SD			
Doc's Choice Standard		**99F-05911**	
	Fat: Acid Hydrolysis, %	13.1	13
	Oven Moisture, %	8.89	9
	Crude Protein, %	27.8	27

Manufacturer Location	Product	Analyte	Found	Claim	
Ranchers Feed & Supply Edgemont, SD					
	***#* Western Alfalfa Cubes**		**99F-00687**		
		Crude Fiber, %	26.7	30	
		Crude Protein, %	14.9	16	DEFICIENT
Roche Vitamins & Fine Chemicals Parsippany, NJ					
	Bovatec 68		**99F-10459**		
		Lasalocid, g/ lb	71.9	68	
	Aureomycin 90		**99D-05792**		
		Chlortetracycline, g/ lb	100.	90	
Schuyler Laboratories Inc. Rushville, IL					
	Sky High Energy		**99F-03240**		
		Chloride, %	2.030	3	
		Crude Fiber, %	1.20		
		Sodium, %	1.44	1.7	
Scott Pet Products Rockville, IN					
	Deluxe Wild Bird Seed		**99F-08590**		
		Crude Protein, %	10.7	10	
Scranton Equity Exchange Scranton, ND					
	Lamb Grower Complete B-25		**99F-04104**		
		Crude Fiber, %	10.6	12	
		Lasalocid, g/ton	29.9	25	
		Crude Protein, %	17.6	18	
	Creep Pasture Gest 14 B68		**99F-04105**		
		Crude Fiber, %	14.3	25	
		Lasalocid, g/ton	56.2	68	
		Crude Protein, %	16.1	14	
	47% Solvent Extract Soybean Meal		**99F-04107**		
		Crude Protein, %	47.9	47	
SD Soybean Processors Volga, SD					
	Soybean Meal 47%		**99F-01383**		
		Crude Protein, %	47.2	47	
	Soybean Meal 44%		**99F-02613**		
		Crude Protein, %	44.3	44	
	Soybean Meal 46%		**99F-12089**		
		Crude Protein, %	46.5	46	
Sioux Nation Ag Center Sioux Falls, SD					
	***#* Cattle Stress 10**		**99F-05893**		
		Oxytetracycline, g/ lb	9.22	10	
		Selenium, ug/g (ppm)	0.566	10	DEFICIENT
		Vitamin A, IU/ lb	443000.	640000	DEFICIENT

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Manufacturer Location	Product	Analyte	Found	Claim	
Sioux Nation Ag Center Spencer, IA					
	First Formula W/CTI and Denagard		**99F-05892**		
		Chlortetracycline, g/ton	321.	400	
		Crude Fat, %	7.52	6.5	
		Crude Protein, %	22.5	22	
	***#* Lean Gain Maker Plus**		**99F-05894**		
		Calcium, %	16.6	14-16	
		Lysine - Total, %	3.29	3.8	
		Phosphorus, %	6.48	6.5	
		Crude Protein, %	22.9	24	DEFICIENT
		Salt (Sodium X 2.54), %	7.97	8.5-10	
		Vitamin A, IU/ lb	86000.	80000	
Sioux Nation Ag Center Watertown, SD					
	Free Choice Cattle Mineral Medicated		**99F-05377**		
		Calcium, %	16.1	15-16	
		Lasalocid , g/ton	1300.	1440	
		Phosphorus, %	6.24	6.7	
		Potassium, %	1.88	2	
		Salt (Sodium X 2.54), %	18.6	18-19	
		Selenium, ug/g (ppm)	23.0	24	
		Vitamin A, IU/ lb	264000.	300000	
Southwest Grain Belle Fourche, SD					
	***#* C-O-B**		**99F-00223**		
		Crude Protein, %	9.98	11	DEFICIENT
Sunshine Pet Treats Inc. Red Bay, AL					
	Beef Flavored Dog Jerky		**99F-00574**		
		Crude Fat, %	14.6	10	
		Oven Moisture, %	19.8	22	
		Crude Protein, %	31.6	27	
Swift and Co. Worthington, MN					
	50% Meat and Bone Meal		**99F-12091**		
		Calcium, %	8.18	8.7-10.3	
		Crude Fat, %	12.1	8	
		Phosphorus, %	4.00	4	
		Crude Protein, %	55.6	50	
Terra International Inc Sioux City, IA					
	Cattle maker 40		**99F-06417**		
		Calcium, %	6.71	6.3-7.5	
		Crude Fiber, %	8.84	14	
		Equiv Crude Protein, %	20.6	23	
		Potassium, %	2.36	2	
		Crude Protein, %	40.2	40.5	
		Salt (Sodium X 2.54), %	4.03	3.9-4.9	
		Vitamin A, IU/ lb	24000.	25000	
	MF Balancer		**99F-06421**		
		Calcium, %	4.71	3.6-4.6	
		Lysine - Total, %	2.43	2.6	
		Crude Protein, %	38.5	38	

Manufacturer Location	Product	Analyte	Found	Claim
	Genuine Lean Base 1232		**99F-06422**	
		Calcium, %	15.2	15-17
		Lysine - Total, %	3.54	3.6
		Phosphorus, %	5.94	6.4
		Crude Protein, %	27.2	25.5
		Salt (Sodium X 2.54), %	5.63	5.5-6.5
	Farrow Max 1301		**99F-06423**	
		Calcium, %	3.75	3.4-4.4
		Crude Fat, %	9.88	9
		Lysine - Total, %	2.12	2.2
		Phosphorus, %	2.21	2.3
		Crude Protein, %	34.2	33
	Cattle Blend 32%		**99F-06424**	
		Calcium, %	4.06	3.9-4.9
		Crude Fiber, %	15.0	14
		Crude Protein, %	31.8	32
		Salt (Sodium X 2.54), %	3.23	2.8-3.8
		Vitamin A, IU/ lb	18500.	25000
	40% Cattle Maker Plain		**99F-06425**	
		Calcium, %	6.99	6.3-7.5
		Crude Fiber, %	9.06	14
		Equiv Crude Protein, %	21.7	23
		Potassium, %	2.51	2
		Crude Protein, %	40.0	40.5
		Salt (Sodium X 2.54), %	4.30	3.9-4.9
		Vitamin A, IU/ lb	28000.	25000
Tetra Sales Blacksburg, VA				
	Tetra Flake Food For All Goldfish		**99F-05488**	
		Oven Moisture, %	5.22	6.5
		Crude Protein, %	43.7	32
The Iams Company Dayton, OH				
	Lamb and Rice Formula For Dogs		**99F-01387**	
		Crude Fat, %	6.86	6
		Oven Moisture, %	76.2	78
		Crude Protein, %	9.05	9
	Chicken Formula Cat Food		**99F-01388**	
		Ash, %	1.68	1.9
		Crude Fat, %	8.77	6.5
		Oven Moisture, %	74.6	78
		Crude Protein, %	11.4	10
		Taurine - Free, %	0.128	0.07
Tizco Inc Columbus, OH				
	Tizwhiz 16% Horse Feed		**99F-04386**	
		Crude Protein, %	17.8	16
Tractor Supply Company Nashville, TN				
	Dumor 37% Range Block		**99F-05786**	
		Acid Detergent Fiber, %	5.57	6
		Calcium, %	6.66	5-6
		Equiv Crude Protein, %	16.4	18.5
		Crude Protein, %	37.2	37
		Salt (Sodium X 2.54), %	16.6	15-17
		Vitamin A, IU/ lb	33000.	30000

Manufacturer Location	Product	Analyte	Found	Claim	
Tradition Feed Products Company **Mankato, MN**					
	Decox Crumbles D1136		**99F-01019**		
		Crude Fiber, %	9.97	10	
		Decoquinate, %	0.230	0.25	
		Crude Protein, %	15.5	14	
		Vitamin A, IU/ lb	261000.	20000	
	Tradition 17% Egg Layer Granules		**99F-01022**		
		Calcium, %	3.83	2.9-3.9	
		Crude Fat, %	3.36	3-6	
		Lysine - Total, %	0.795	0.7	
		Methionine - Total, %	0.390	0.3	
		Crude Protein, %	17.1	17	
	OptiCare Cattle Coxx D1135		**99F-02788**		
		Calcium, %	6.45	5.5-6.5	
		Crude Fiber, %	17.8	24	
		Decoquinate, %	0.230	0.25	
		Crude Protein, %	11.1	6	
	Opti Care Beef Pack 1440		**99F-03254**		
		Lasalocid, g/ton	1460.	1440	
	***#* Tradition Fastart 20% Am .0125BM01**		**99F-04805**		
		Amprolium, %	0.0204	0.0125	EXCESSIVE
		Crude Protein, %	22.0	20	
	Milkflakes Calf Milk Replacer		**99F-04806**		
		Fat: Roese Gottlieb, %	21.4	20	
		Crude Protein, %	21.6	21	
		Vitamin A, IU/ lb	33000.	30000	
	8346 Tylan 4 Medicated		**99F-07516**		
		Copper, %	1.95	2	
		Lysine - Total, %	3.69	3.9	
		Tylosin, g/ lb	3.28	4	
	Happy Hound Dog Food		**99F-10190**		
		Fat: Acid Hydrolysis, %	10.3	10	
		Oven Moisture, %	7.54	12	
		Crude Protein, %	31.4	27	
	***#* Beef Pack B1440**		**99F-10478**		
		Lasalocid, g/ton	774.	1440	DEFICIENT
Truman Farmers Elevator **Truman, MN**					
	TFE SEW Nursery #1 ASP		**99F-05789**		
		Chlortetracycline, g/ton	99.0	100	
		Crude Fat, %	8.96	8	
		Crude Protein, %	23.9	23	
		Sulfamethazine, %	0.0103	0.011	
Valley Splendor **Fargo, ND**					
	Wild Bird Food Sunrise Blend		**99F-03623**		
		Crude Fat, %	6.32	7	
		Crude Protein, %	10.3	7	
	Bird Seed		**99F-08232**		
		Crude Fat, %	10.5	7	
		Crude Protein, %	10.6	7	
Vigorena Feeds **Mankato, MN**					
	Vigorena Sweet 12-12-12 Mineral		**99F-05374**		
		Calcium, %	14.9	12.3-14.7	
		Iodine, ppm	45.0	50	
		Phosphorus, %	11.2	12	
		Salt (Sodium X 2.54), %	12.2	12.1-14.5	
		Selenium, ug/g (ppm)	18.7	20	
		Vitamin A, IU/ lb	195000.	180000	

Manufacturer Location / Product	Analyte	Found	Claim	
Vigorena Pig Dynamite Supplement		**99F-05375**		
	Calcium, %	2.30	1.9-2.4	
	Crude Fat, %	9.69	7.9	
	Lysine - Total, %	2.90	3.12	
	Crude Protein, %	41.1	40.5	
Vigortone Ag Products Inc Cedar Rapids, IA				
Vigortone FC No. 32		**99F-00406**		
	Calcium, %	20.4	19.8-23.7	
	Phosphorus, %	9.59	10	
	Salt (Sodium X 2.54), %	5.68	4.8-5.8	
	Selenium, ug/g (ppm)	25.0	26.4	
	Vitamin A, IU/ lb	457000.	350000	
Vigortone NO 325CTC Plus		**99F-00407**		
	Calcium, %	14.8	13.5-16.2	
	Chlortetracycline, g/ lb	1.25	1.4	
	Phosphorus, %	6.80	7	
	Salt (Sodium X 2.54), %	19.8	18.2-21.8	
	Selenium, ug/g (ppm)	24.8	26.4	
	Vitamin A, IU/ lb	249000.	300000	
Walter Zaugg Bardonia, NY				
Star Steamed Bone Meal		**99F-04279**		
	Calcium, %	26.8	27.5-33	
	Phosphorus, %	12.3	13	
	Crude Protein, %	8.74	5	
Watertown Coop Elevator Watertown, SD				
Custom Mix Feed		**99F-05372**		
	Lasalocid, g/ton	27.9	33	
West Central Soy Ralston, IA				
Soychlor 16		**99F-07515**		
	Calcium, %	1.73	1.5-2	
	Crude Fiber, %	8.49	13	
	Crude Protein, %	19.9	16	
Western QLF Dodgeville, WI				
QLF Super 40C		**99F-02811**		
	Equiv Crude Protein, %	35.4	35	
	Vacuum Moisture, %	35.9	34	
	Crude Protein, %	41.2	40	
	Total Sugars(Invert), %	30.8	29	
	Vitamin A, IU/ lb	35000.	30000	
***#* ClearLake 50 M900 Medicated**		**99F-05094**		
	Calcium, %	7.99	7.3-8.7	
	Equiv Crude Protein, %	47.6	47	
	Vacuum Moisture, %	34.7	32	
	Monensin, g/ton	682.	900	
	Potassium, %	2.83	3.5	DEFICIENT
	Crude Protein, %	51.3	50	
	Salt (ChlorideX1.65), %	2.89	2-3	
	Salt (Sodium X 2.54), %	3.56	2-3	EXCESSIVE
	Selenium, ug/g (ppm)	2.90	4	DEFICIENT
	Total Sugars(Invert), %	10.2	9	
	Vitamin A, IU/ lb	80000.	80000	
Westway Trading New Orleans, LA				
***#* EZ Flo 6Z**		**99F-01024**		
	Vacuum Moisture, %	36.9	38	
	Potassium, %	2.71	2	
	Salt (ChlorideX1.65), %	5.28	1-2	EXCESSIVE
	Salt (Sodium X 2.54), %	2.84	1-2	EXCESSIVE
	Total Sugars(Invert), %	34.5	33	

#* = Misbranded

Manufacturer / Location	Product	Analyte	Found	Claim	
	***#* Sweet 45 Dried Molasses**		**99F-04140**		
		Crude Fiber, %	28.0	24	EXCESSIVE
		Oven Moisture, %	2.63	6	
	Wes Las 79.5 Brix Cane Molasses		**99F-04774**		
		Vacuum Moisture, %	27.3	27	
		Total Sugars(Invert), %	44.1	43	
	Glow 7/68		**99F-04775**		
		Fat: Roese Gottlieb, %	7.10	7	
		Vacuum Moisture, %	33.5	32	
		Potassium, %	2.64	2	
		Total Sugars(Invert), %	32.2	33	
	Sweet 45 Molasses		**99F-08595**		
		Crude Fiber, %	24.6		
	Wes Las 79.5 Brix Cane Molasses		**99F-10456**		
		Vacuum Moisture, %	26.7	27	
		Total Sugars(Invert), %	41.5	43	
Yaggies Inc Yankton, SD					
	Amprolium Crumbles		**99F-02812**		
		Amprolium, %	1.08	1.25	
	Chlortetracycline-8-Medicated		**99F-04249**		
		Chlortetracycline, g/ lb	7.81	8	
	S-700-Supplement-Medicated		**99F-04250**		
		Chlortetracycline, g/ lb	2.09	2	
		Sulfamethazine, g/ lb	1.87	2	
		Vitamin A, IU/ lb	231000.	250000	
	Stress Granules w/ chlortetracycline-4V Medicated		**99F-04251**		
		Chlortetracycline, g/ lb	3.88	4	
		Vitamin A, IU/ lb	259000.	250000	
Zip Feed Mills Huron, SD					
	Custom Mixed Beef Feed R1200/T360 Medicated		**99F-01718**		
		Calcium, %	9.31	8-9	
		Crude Fiber, %	7.40	10	
		Equiv Crude Protein, %	2.07	4	
		Monensin, g/ton	1320.	1200	
		Crude Protein, %	11.3	10	
		Salt (Sodium X 2.54), %	5.59	5-6	
		Tylosin, g/ton	366.	360	
		Vitamin A, IU/ lb	57000.	40000	
	Goose Egg Builder C-200 Medicated		**99F-04264**		
		Calcium, %	2.66	2.2-2.7	
		Chlortetracycline, g/ton	185.	200	
		Crude Protein, %	19.4	18	
	Zipmycin CTC 4 Granules Medicated		**99F-04266**		
		Calcium, %	7.30	5.5-6.6	
		Crude Fiber, %	18.5	29	
		Chlortetracycline, g/ lb	4.17	4	
		Crude Protein, %	8.11	5	
	Zipmycin OTC 4 Granules Medicated		**99F-04267**		
		Calcium, %	4.00	4.4-5.4	
		Crude Fiber, %	17.2	29	
		Oxytetracycline, g/ lb	4.09	4	
		Crude Protein, %	9.93	5	

Manufacturer Location Zip Feed Mills Sioux Falls, SD	Product	Analyte	Found	Claim	
	Custom Mix 7207 Northern Plains Cow & Calf 12:12 Mineral		**99F-00986**		
		Calcium, %	13.0	11.2-13.4	
		Phosphorus, %	11.4	12	
		Salt (Sodium X 2.54), %	11.2	8.5-10.2	
		Selenium, ug/g (ppm)	27.4	35	
		Vitamin A, IU/ lb	294000.	250000	
	Zip Market Lamb 40% B-166 Med		**99F-00987**		
		Calcium, %	4.16	3.5-4.5	
		Equiv Crude Protein, %	10.1	10	
		Lasalocid, g/ton	145.	166	
		Crude Protein, %	40.2	40	
		Salt (Sodium X 2.54), %	4.41	3.5-4.5	
	Zip Lamb Grower 16% B-25		**99F-00988**		
		Crude Fiber, %	18.0	18	
		Lasalocid, g/ton	28.1	25	
		Crude Protein, %	17.1	16	
	Terramycin-Oxytetracycline Hydrochloride 2g/lb		**99F-01880**		
		Oxytetracycline, g/ lb	1.54	2	
	***#* Zip 14% Textured Horse Feed**		**99F-02583**		
		Crude Protein, %	11.6	14	DEFICIENT
	Zip 46.5% Soybean Meal		**99F-02584**		
		Crude Fat, %	1.36	0.5	
		Crude Protein, %	46.8	46.5	
	Zip Pheasant Breeder - Layer		**99F-02585**		
		Calcium, %	2.58	2-3	
		Crude Protein, %	18.6	18	
	Zip 14% Sow Cubes		**99F-02588**		
		Crude Protein, %	14.9	14	
	Zip Steakmaker 42%		**99F-02589**		
		Calcium, %	9.19	7.5-9	
		Crude Fiber, %	8.98	15	
		Crude Protein, %	41.4	42	
		Vitamin A, IU/ lb	35000.	40000	
	Zip Feed Ranch Block 32%		**99F-02814**		
		Crude Fiber, %	9.00	12	
		Equiv Crude Protein, %	10.6	10	
		Crude Protein, %	32.8	32	
		Salt (Sodium X 2.54), %	10.8	9-10.8	
		Vitamin A, IU/ lb	53000.	50000	
	Zip Pork Builder 40%		**99F-02878**		
		Calcium, %	3.53	2.6-3.6	
		Lysine - Total, %	2.67	2.7	
		Crude Protein, %	42.1	40	
		Salt (Sodium X 2.54), %	2.17	1.6-2.1	
	Zipmycin - 4 Granules		**99F-02879**		
		Crude Fiber, %	20.1	29	
		Chlortetracycline, g/ lb	4.28	4	
		Crude Protein, %	7.30	5	
	Zip Liquid Supplement 30% 882		**99F-02880**		
		Equiv Crude Protein, %	21.1	22	
		Vacuum Moisture, %	42.4	45	
		Potassium, %	3.21	3.25	
		Crude Protein, %	30.1	30	
		Salt (ChlorideX1.65), %	3.07	3-4	
		Salt (Sodium X 2.54), %	6.59	3-4	EXCESSIVE
		Vitamin A, IU/ lb	58000.	40000	
	Calf Builder 14% B-60		**99F-03236**		
		Crude Fiber, %	10.8	15	
		Lasalocid, g/ton	58.5	60	
		Crude Protein, %	15.1	14	

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Manufacturer Location	Product / Analyte	Found	Claim
	Chick Started AM (Amprolium)	**99F-04227**	
	Amprolium, %	0.0087	0.008
	Lysine - Total, %	0.866	1
	Methionine - Total, %	0.312	0.3
	Crude Protein, %	20.3	20
	Mineral Pellets	**99F-04228**	
	Calcium, %	10.3	10-12
	Phosphorus, %	9.36	10
	Salt (Sodium X 2.54), %	13.5	12.5-15
	Selenium, ug/g (ppm)	38.3	35
	Vitamin A, IU/ lb	109000.	100000
	Zip Start Em Pellets 20% w/Decox	**99F-04281**	
	Decoquinate, mg/ lb	12.0	15.13
	Crude Protein, %	21.1	20
	Northern Plains Cow & Calf 12:12 Mineral	**99F-04282**	
	Calcium, %	13.3	11-13
	Phosphorus, %	11.7	12
	Salt (Sodium X 2.54), %	9.42	8.9-10.6
	Selenium, ug/g (ppm)	28.0	35
	Vitamin A, IU/ lb	162000.	140000
	Zip Calf Builder 14% B60	**99F-04384**	
	Crude Fiber, %	12.8	15
	Lasalocid, g/ton	53.6	60
	Crude Protein, %	15.6	14
	Zip All-A-Round 14%	**99F-04385**	
	Crude Fiber, %	18.5	18
	Crude Protein, %	14.5	14
	Purple Ribbon Mineral Pellets	**99F-06405**	
	Calcium, %	10.5	10-12
	Iodine, ppm	53.0	66
	Phosphorus, %	9.29	10
	Salt (Sodium X 2.54), %	13.4	13-15
	Selenium, ug/g (ppm)	37.9	35
	Vitamin A, IU/ lb	80000.	100000
	Zip Super Phos Mineral	**99F-06406**	
	Calcium, %	13.6	14.5-15.5
	Iodine, ppm	63.0	66
	Phosphorus, %	14.8	15
	Salt (Sodium X 2.54), %	11.1	9.5-11
	Selenium, ug/g (ppm)	44.1	35
	Vitamin A, IU/ lb	178000.	100000
	Zipmycin OTC 4G Pellets W/A/D	**99D-06411**	
	Crude Fiber, %	16.4	29
	Oxytetracycline, g/ lb	3.46	4
	Crude Protein, %	10.9	5
	GMN Pork Pro 42%	**99F-06584**	
	Calcium, %	3.41	2.7-3.7
	Lysine - Total, %	2.56	2.8
	Crude Protein, %	42.5	42
	Salt (Sodium X 2.54), %	2.24	1.7-2.2
	Egg Maker 16%	**99F-06585**	
	Calcium, %	3.21	2.7-3.7
	Lysine - Total, %	0.679	0.6
	Methionine - Total, %	0.278	0.3
	Crude Protein, %	16.7	16
	Soybean Meal	**99F-06586**	
	Crude Protein, %	44.6	44
	Tend-R-Lean-Finisher R208T104-SDA	**99F-07517**	
	Acid Detergent Fiber, %	15.5	16
	Calcium, %	4.63	4-5
	Crude Fiber, %	11.4	12
	Equiv Crude Protein, %	10.4	10.25
	Monensin, g/ton	200.	208
	Crude Protein, %	34.8	34
	Salt (Sodium X 2.54), %	2.81	2-2.5
	Sodium, %	1.14	0.75-1.25
	Tylosin, g/ton	87.5	104
	Vitamin A, IU/ lb	25000.	35000

Manufacturer Location / Product	Analyte	Found	Claim	
***#* Beef 34%**		**99F-07747**		
	Calcium, %	2.82	3.9-4.9	DEFICIENT
	Crude Fiber, %	10.2	14	
	Crude Protein, %	35.6	34	
	Salt (Sodium X 2.54), %	3.80	2.8-3.8	
	Vitamin A, IU/ lb	27500.	40000	DEFICIENT
16/28 Starter		**99F-08219**		
	Calcium, %	2.16	1.7-2.2	
	Crude Fat, %	5.96	6	
	Lysine - Total, %	2.53	2.7	
	Crude Protein, %	37.6	32	
***#* Mineral Pellets**		**99F-08220**		
	Calcium, %	10.6	10-12	
	Phosphorus, %	9.21	10	
	Salt (Sodium X 2.54), %	13.6	12.5-15	
	Selenium, ug/g (ppm)	39.0	35	
	Vitamin A, IU/ lb	37000.	100000	DEFICIENT
***#* 534-Tend-R-Lean**		**99F-08589**		
	Acid Detergent Fiber, %	20.7	16	EXCESSIVE
	Calcium, %	4.58	4-5	
	Crude Fiber, %	12.2	12	
	Equiv Crude Protein, %	10.4	10.25	
	Monensin, g/ton	208.	208	
	Crude Protein, %	37.1	34	
	Salt (Sodium X 2.54), %	2.67	2-2.5	
	Sodium, %	1.05	0.75-1.25	
	Tylosin, g/ton	81.8	104	
	Vitamin A, IU/ lb	38000.	35000	
Zip Calf Builder 14%		**99F-08592**		
	Calcium, %	1.22	0.7-1.2	
	Crude Fiber, %	12.8	15	
	Crude Fat, %	3.84	2	
	Lasalocid, g/ton	45.7	60	
	Phosphorus, %	0.881	0.6	
	Crude Protein, %	16.1	14	
	Salt (Sodium X 2.54), %	0.46	0.2-0.7	
Lamb Grower 16%		**99F-08594**		
	Crude Fiber, %	16.8	18	
	Equiv Crude Protein, %	1.03	1.5	
	Lasalocid, g/ton	19.2	25	
	Crude Protein, %	17.9	16	
***#* Zip Big 3**		**99F-11101**		
	Calcium, %	20.8	6.9-8.2	EXCESSIVE
	Crude Fiber, %	6.35	10	
	Crude Protein, %	8.40	5	
	Vitamin A, IU/ lb	4500000.	4000000	
***#* 534 Tend-R-Lean Finisher R208T104-SDA Medicated**		**99F-12086**		
	Acid Detergent Fiber, %	17.0	16	
	Calcium, %	4.53	4-5	
	Crude Fiber, %	11.9	12	
	Equiv Crude Protein, %	10.4	10.25	
	Monensin, g/ton	209.	208	
	Crude Protein, %	34.4	34	
	Salt (Sodium X 2.54), %	2.65	2-2.5	
	Sodium, %	1.04	0.75-1.25	
	Tylosin, g/ton	100.	104	
	Vitamin A, IU/ lb	23500.	35000	DEFICIENT

COMMERCIAL REMEDIES SAMPLED -- 1999
LIST OF ANALYTES

DRUG ANALYTES	NUMBER OF SAMPLES
Oxytetracycline	8
Piperazine	5
Penicillin	4
Tetracycline Hydrochloride	3
Sulfamethazine	2
Chlortetracycline	2
Amprolium	2
Dichlorvos	1
Tylosin	1
Nitrofurazone	1

OTHER ANALYTES	
Vitamin A	9
Iron	4
Dextrose	3
Sodium	3
Calcium	2
Vitamin D	2
Magnesium	1
Potassium	1
Glycine	1
Crude Protein	1
Ash	1

Remedy Sample Count Report

Remedies Sampled From 01/01/1999 To 12/31/1999

Manufacturer and Location			Sample	Passed	Not
Anthony Products Company	Arcadia	CA	2	2	0
Aspen Veterinary Resources	Kansas City	MO	1	1	0
Boehringer Ingelheim Animal Health	St Joseph	MO	3	3	0
Dealer Distribution of America	Porterville	CA	1	1	0
Durvet Inc	Blue Springs	MO	4	3	1
Elanco Animal Health	Indianapolis	IN	1	1	0
Fermenta Animal Health Company	Kansas City	MO	1	1	0
Fort Dodge Animal Health	Fort Dodge	IA	12	11	1
Hartz Mountain Corp	Secaucus	NJ	3	3	0
Hess & Clark Inc	Ashland	OH	1	1	0
International Nutrition	Omaha	NE	1	1	0
Merck & Company Inc	Rahway	NJ	2	1	1
Nutrizyme Inc	Fresno	CA	1	0	1
Pfizer Animal Health	Lee's Summit	MO	7	7	0
Phoenix Pharmaceutical	St. Joseph	MO	1	1	0
Premier Farmtech	Kansas City	MO	1	1	0
Rhone Merieux, Inc.	Athens	GA	1	1	0
RX Veterinary Products	Porterville	CA	1	0	1
Sparhawk Laboratories	Lenexa	KS	1	1	0
Stamina Plus	Cody	WY	1	1	0
Vedco Inc	St Joseph	MO	2	2	0
Wade Jones Co.	Lowell	AR	1	1	0
Totals:			49	44	5

Percent Passed: 89.8%

Percent Not Passed: 10.2%

Remedy Summary Report

Remedies Sampled
01-01-1999 to 12-31-1999

Manufacturer / Location / Product	Analyte	Found	Claim	
Anthony Products Company				
Arcadia, CA				
Microcillin		**99D-03237**		
	Penicillin, units/ml	317000.	300000	
Microcillin (steril penicillin G)		**99D-09060**		
	Penicillin, units/ml	314000.	300000	
Aspen Veterinary Resources				
Kansas City, MO				
Iron Hydrogenated Dextran Injection Hematinic		**99D-00345**		
	Iron, mg/ml	104.	100	
Boehringer Ingelheim Animal Health				
St Joseph, MO				
Bio-Mycin 200		**99D-00343**		
	Oxytetracycline, mg/ml	194.	200	
Atgard Swine Wormer		**99D-05766**		
	Dichlorvos, gm/packet	2.20	2.35	
Oxytetracycline HCl Injection		**99D-08233**		
	Oxytetracycline, mg/ml	96.3	100	
Dealer Distribution of America				
Porterville, CA				
CMPK		**99D-01025**		
	Calcium, % w/v	1.96	1.8-2.2	
	Dextrose, % w/v	13.4	15	
Durvet Inc				
Blue Springs, MO				
Sustain III		**99D-00612**		
	Sulfamethazine, g/bolus	30.8	32.1	
Durvet Iron Hydrogenated Dextran Injection		**99D-05090**		
	Iron, mg/ml	102.	100	
***#* Piperazine-17 Medicated**		**99D-05364**		
	Piperazine, g/100cc	8.57	17	DEFICIENT
Vitamin A Injections		**99D-09061**		
	Vitamin A, I.U./ mL	481000.	500000	
Elanco Animal Health				
Indianapolis, IN				
Tylan 50		**99D-05765**		
	Tylosin, mg/ml	51.9	50	
Fermenta Animal Health Company				
Kansas City, MO				
Iron-Gard 200 Injection		**99D-00609**		
	Iron, mg/ml	188.	200	

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Manufacturer Location / Product / Analyte	Found	Claim	
Fort Dodge Animal Health **Fort Dodge, IA**			
Polyotic Soluble Powder	**99D-00342**		
Tetracycline HCl, g/lb	26.3	25	
Polyotic Tetracycline Hydrochloride	**99D-01341**		
Tetracycline HCl, g/pkg	10.8	10	
***#* Vitamins and Electrolytes**	**99D-02729**		
Vitamin A, I.U./ lb	2980000.	5000000	DEFICIENT
Hog and Cattle Vitamins and Electrolytes	**99D-02732**		
Vitamin A, IU/ lb	5380000.	5000000	
D-Lyte H20-k	**99D-02813**		
Dextrose, %	83.7	72.38	
Sodium, %	3.39	3.36-4.11	
Hog and Cattle Vitamins and Electrolytes	**99D-04240**		
Vitamin A, I.U./ lb	5340000.	5000000	
Vitamins and Electrolytes Soluble for Poultry	**99D-04241**		
Vitamin A, I.U./ lb	4790000.	5000000	
Aureomycin chlortetracycline	**99D-04242**		
Chlortetracycline, g/ pkg	10.2	10	
Vitamins and Electrolytes Soluble for Poultry	**99D-05091**		
Vitamin A, I.U./ lb	5710000.	5000000	
Cal-Dextro #2 Sterile Solution	**99D-05590**		
Dextrose, mg/ml	175.	165	
Hog and Cattle Vit. and Electrolyte	**99D-05591**		
Vitamin A, I.U./ lb	4400000.	5000000	
Aureomycin Chlortetracycline Soluble Powder Antibiotic	**99D-12781**		
Chlortetracycline, g/ lb	27.6	25	
Hartz Mountain Corp **Secaucus, NJ**			
Hartz Wormer - Dogs	**99D-00572**		
Piperazine, mg/capsule	80.5	80	
Wormer For Dogs	**99D-04138**		
Piperazine, mg/capsule	76.0	80	
Wormer - Cats and Kittens	**99D-04139**		
Piperazine, mg/capsule	76.3	80	
Hess & Clark Inc **Ashland, OH**			
NFZ Puffer	**99D-05365**		
Nitrofurazone, %	0.187	0.2	
International Nutrition **Omaha, NE**			
Procaine Penicillin-100	**99D-04549**		
Calcium, %	16.6	15-17	
Merck & Company Inc **Rahway, NJ**			
***#* Corid (amprolium) 20% Soluble Powder**	**99D-00610**		
Amprolium, %	22.4	20	EXCESSIVE
Corid 20% Soluble Powder	**99D-02614**		
Amprolium, %	21.5	20	
Nutrizyme Inc **Fresno, CA**			
***#* Enterosorb (Electrolytes)**	**99D-00254**		
Magnesium, %	0.06	0.06	
Potassium, %	1.41	1.23	
Sodium, %	1.71	3.43	DEFICIENT

Manufacturer Location	Product	Analyte	Found	Claim	
Pfizer Animal Health Lee's Summit, MO					
	Terramycin Soluble Powder		**99D-00064**		
		Oxytetracycline, g/ pkg	9.66	10	
	Terramycin Soluble Powder		**99D-00692**		
		Oxytetracycline, g/ pkg	10.4	10	
	Liquamycin LA-200		**99D-01026**		
		Oxytetracycline, mg/ml	201.	200	
	Liquamycin LA-200		**99D-01385**		
		Oxytetracycline, mg/ml	204.	200	
	Pfi-Pen G		**99D-01386**		
		Penicillin, units/ml	312000.	300000	
	Terramycin (OxytetracyclineHCl) Soluble Powder Antibiotic		**99D-02733**		
		Oxytetracycline, g/ pkg	10.5	10	
	Terramycin (oxytetracycline HCL) Soluble Powder		**99D-04243**		
		Oxytetracycline, g/ pkg	10.4	10	
Phoenix Pharmaceutical St. Joseph, MO					
	Vitamin A D Injection		**99D-00344**		
		Vitamin A, I.U./ mL	484000.	500000	
		Vitamin D, I.U./ mL	78000.	75000	
Premier Farmtech Kansas City, MO					
	Injectionable Iron		**99D-02730**		
		Iron, mg/ml	101.	100	
Rhone Merieux, Inc. Athens, GA					
	Sustain III		**99D-05592**		
		Sulfamethazine, g/bolus	34.7	32.1	
RX Veterinary Products Porterville, CA					
	***#* Piperazine 17**		**99D-04601**		
		Piperazine, g/100cc	8.71	17	DEFICIENT
Sparhawk Laboratories Lenexa, KS					
	Injection Vitamin A and D		**99D-02731**		
		Vitamin A, I.U./ mL	609000.	500000	
		Vitamin D, I.U./ mL	90000.	75000	
Stamina Plus Cody, WY					
	Stamina Plus - Calf Electrolyte		**99D-04136**		
		Glycine, %	3.72	3.8	
		Sodium, %	3.86	3.5-3.8	
Vedco Inc St Joseph, MO					
	Aquacillin		**99D-00255**		
		Penicillin, units/ml	288000.	300000	
	NRG-Plus		**99D-00611**		
		Ash, %	3.57	4	
		Crude Protein, %	9.29	9	
Wade Jones Co. Lowell, AR					
	Tet-sol 324		**99D-05589**		
		Tetracycline HCl, g/pkg	53.8	51.2	

ANIMAL FEED & DRUG CONTAMINANTS MONITORING PROGRAM

Sulfonamide (Sulfa) Drugs

Sulfamethazine and sulfathiazole are the two most common sulfonamide drugs used in animal production, although many other sulfonamide drugs are available. Because they are effective and relatively inexpensive, they have been widely used. They are most effective when used early in the course of a disease when bacterial organisms are rapidly multiplying because they act by blocking enzymes necessary for protein synthesis during bacterial reproduction. They are not very effective in cases where the infection is firmly established because the animal must be able to mount an immune response for the sulfonamide therapy to be successful.

The sulfa drugs are available in a wide variety of dosage forms, as well as Type A Medicated Articles and Type B and C medicated feeds. In feeds, sulfamethazine and sulfathiazole are used primarily to prevent or treat bacterial infections. The sulfa drugs are distributed throughout the entire body, including muscle, bone, blood and milk. Bacterial resistance may gradually develop and in some cases is widespread. Misuse of any of the sulfa products has the potential to cause tissue residues.

Several years ago the National Center for Toxicological Research tentatively concluded that sulfamethazine is a carcinogen. Since that time much of its use has been curtailed. Due to the carcinogenicity issue, sulfa residues in animal tissues intended for human consumption became a concern, especially in swine. In 1975, the United States Department of Agriculture began a national monitoring program. In 1977, they found sulfa residue in 12.6% of swine sampled. In 1990, sulfa residue was detected in less than 1.0% of swine sampled.

The Food & Drug Administration (FDA) in 1990 removed a portion of the Food, Drug and Cosmetic Act, 21 CFR 510.450 which had allowed the interim sale of sulfa drugs not covered by an approved new animal drug application (NADA). This served to curtail the availability of some of these products, principally water-soluble forms of sulfa.

The South Dakota Department of Agriculture has also operated a program designed to monitor feeds and feed ingredients for contamination by sulfonamides. This program has been successful in that few samples containing significant levels of sulfa contamination have been found. In the six years between January 1, 1991 and December 31, 1996, we analyzed 319 samples for sulfa drug residues, and detected residues in 19 samples, or 6.0% of the samples. None of these samples contained more than 2.0 ppm sulfa residue, and most contained 1.0 ppm or less. Nine positives were detected in 1991, and the rate has gone down since then. No residues were found in 1995 or 1996, although sample numbers were reduced during this time, as well.

FDA's action level for residues in feed is 2 ppm in the complete feed. Feed ingredients may contain residues greater than 2 ppm, but the total ration must have a residue concentration below 2 ppm. None of the residues found by our monitoring program during this time period were violative. Of the 19 samples positive for sulfa residue, two were samples of cattle concentrates, seven were samples of meat and bone meal, and ten were hog feeds and concentrates.

AS-FS-101

SAMPLING PROGRAM

Although the incidence of sulfa residues in animal tissues has been reduced, the problem has not been eliminated entirely. However, our results indicate that we can maintain an effective animal feed monitoring program while monitoring fewer samples. To achieve this we will concentrate our sulfa residue monitoring program on those feeds and feed ingredients believed to have a higher probability of contamination and/or potential to cause meat or milk residues. Of primary concern are feeds that were mixed immediately following a batch of feed containing sulfonamide drugs, meat and bone meal, and other finished feeds not labeled to contain sulfa.

We do not intend to collect additional samples, but plan on getting more use out of the samples that are taken. Although we have not done many sulfa residue analyses in the last several years we would like to maintain that analytic capability, as well as continue to be able to monitor samples for sulfa residues.

Specific instructions for our continued sulfa-residue monitoring program are as follows:

1. The lab will only analyze for sulfa residues when requested by the inspector or the Office of Agronomy Services.
2. Determine if the feed sampled fits into one of the priority categories. These categories are:
    - commercial and/or custom-mixed feeds at feed mills which may show cross-contamination from a previously mixed batch of feed. Check production records prior to sampling for this purpose
    - meat and bone meal,
3. Other products which may be sampled are:
    - feeds and supplements for finishing hogs and cattle,
    - feeds and supplements for lactating dairy cows, an d
    - other products which the inspector suspects may contain sulfa residues.

4. Make a note in the “Remarks” section of the Report on Sample requesting sulfa residue analysis.

Care should be taken when handling sulfonamide products. Some people are allergic and may experience adverse reactions when exposed to these drugs. In general, the more concentrated the product being handled, the more care that should be taken during handling. Avoid skin contact as well as ingestion. In case of eye contact, flush with water. In case of ingestion, obtain medical attention. Induce vomiting if the person is conscious. Always wash with soap and water after direct skin exposure to these drugs or feeds containing these drugs.

Issuing Office: South Dakota Department of Agriculture
Office of Agronomy Services
Issue Date: October 21, 1991 Review Date: October 26, 1999

ANIMAL FEED & DRUG CONTAMINANTS MONITORING PROGRAM

Adulteration by Noxious Weed Seeds

Noxious weeds are a problem in South Dakota. One method being used to try to control the distribution of noxious weeds in the state is to reduce or eliminate noxious weed seeds from animal feeds. Several sections of the South Dakota Commercial Feed Law and Regulations address the issue of commercial feeds containing noxious weed seeds.

Section 39-14-53 of the South Dakota Commercial Feed Law states "a commercial feed shall be deemed to be adulterated if it contains viable weed seeds in amounts exceeding the limits which the Secretary of Agriculture shall establish by rule pursuant to the provisions of Chapter 1-26."

These rules are further addressed in the Administrative Rules of South Dakota (ARSD), Chapter 12:53:01:10, which states:

> All screenings or by-products of grains and seeds containing prohibited or restricted weed seeds, as defined in chapter 12:36:03, when used in commercial feed or sold as such to the ultimate consumer, must be ground fine enough or otherwise treated to destroy the viability of the weed seeds. The finished product may contain no viable prohibited weed seeds per pound and not more than 4.5 viable restricted weeds seeds per pound.

Regulation 9(b) of the commercial feed regulations (and the Uniform Feed Bill and Regulations) essentially repeats this.

Chapter 12:36:03 of the South Dakota Seed Law, SDCL 38-12A, defines those noxious weed seeds that are prohibited and restricted. They are listed as follows:

12:36:03:01 Prohibited noxious weed seeds.

(1) Field bindweed
(2) Leafy spurge
(3) Hoary cress
(4) Russian knapweed
(5) Perennial sowthistle
(6) Canada thistle
(7) Quackgrass
(8) Horse nettle

12:36:03:02 Restricted noxious weed seeds.

(1) Wild oats
(2) Dodder
(3) Wild mustard
(4) Hedge bindweed
(5) Wild carrot
(6) Field pennycress
(7) Annual bluegrass
(8) Spotted knapweed
(9) Giant foxtail
(10) Musk thistle
(11) Plumeless thistle

Based on our test results, we find feed samples containing noxious weed seeds. We are not analyzing a representative cross-section of the commercial feed supply, however, we are only analyzing those products which appear to contain noxious weed seeds. Additionally, the weed seeds need to be **viable** in order for the product to be violative. From 1989 through 1998 the South Dakota Department of Agriculture analyzed 423 feed samples for noxious weed seeds. 85 of those samples (20%) were reported NOT PASSED, because they contained viable noxious weed seeds in excess of the standards specified above.

AS-FS-102

SAMPLING PROGRAM

While many feeds and feed ingredients have little or no contamination by weed seeds, other feeds and ingredients have a higher probability of containing noxious weed seeds. By concentrating our sampling and analysis on those feeds and feed ingredients that have a higher chance of containing noxious weed seeds, we may get better compliance with the regulations and decrease the amount of contaminated feed distributed. Grain screenings, custom formula feeds, texturized feeds, and wild bird food are products of primary concern at this time.

Rather than collect extra samples for weed seed analysis, we will analyze a number of our routine samples for weed seeds, in addition to the routine analytes. We will continue monitoring commercial feeds for contamination by viable noxious weed seeds.

Specific instructions to field staff for our weed seed monitoring program are as follows:

1. The lab will only analyze for weed seeds when requested by the Inspector or the Office of Agronomy Services.
2. Visually inspect each sample collected.
3. Determine if the product sampled fits into one of the priority categories. These categories are:
   - Grain screenings,
   - Custom formula feeds, especially those containing whole grains or screenings,
   - Texturized and other feeds containing whole grains, and
   - Wild bird food.
4. Other products may be submitted for analysis if there appears to be a high probability of weed seed contamination.
5. When collecting a sample for weed seed analysis and label analysis, please collect an additional pound of feed for the weed seed analysis.
6. Make a note in the “Remarks” section of the Report of Sample form requesting analysis for weed seed.

If the sample is reported NOT PASSED after analysis, it will be handled like any other violative sample. Any product remaining of the lot sampled will be placed under Stop Sale Order as an adulterated product. The product can be released from Stop Sale Order only for remanufacturing to render the weed seeds non-viable or disposal.

SUMMARY OF WEED SEED OCCURRENCE IN COMMERCIAL FEEDS

Commercial Feeds Sampled January 1, 1999 - December 31, 1999

Total samples analyzed for weed seed contamination: 28

Number of samples analyzed reported as PASSED: 26
Number of samples analyzed reported NOT PASSED: 2

Percent of samples reported NOT PASSED: 7%

Number of samples actually containing weed seeds: 8
Number of samples containing no weed seeds: 20

Sampling was confined to products that looked like they may contain noxious weed seeds. Many samples that passed did contain some weed seeds. However, the factor that determines if a sample passes or not is seed viability. The weed seeds need to be viable to be violative. Samples containing noxious weed seeds but reported as PASSED contained less than 4.5 viable ***restricted*** weed seeds per pound or no viable ***prohibited*** weed seeds. In many cases, there were no viable weed seeds in the sample.

Type of feed analyzed for weed seeds	Number analyzed	Number NOT PASSED	Percent NOT PASSED
Texturized feed, scratch feeds	2	1	50%
Screenings	1	1	100%
Customer formula feeds	12	0	--
Wild bird & squirrel, hamster, etc., feeds	11	0	--
Other (hog premix, medication premix)	2	0	--

In 1998 we analyzed 23 samples for weed seed contamination and reported 5 samples as NOT PASSED, a 22% non-compliance rate. Since 1989 we have analyzed approximately 451 samples for weed seeds, reporting about 87 of them as NOT PASSED, for a non-compliance rate of about 19% during that time period.

WEED SEED ANALYSIS OF COMMERCIAL FEEDS

Commercial Feeds Sampled Jan. 1, 1999 - Dec. 31, 1999

* Results marked by an asterisk indicate that the number of restricted noxious weed seeds found in that sample was below the tolerance of 4.5 restricted noxious weed seeds per pound. In these instances, viability was not determined.

All Natural Animal Products
Corvallis, OR
Chuckanut Squirrel Feed — Passed
None found

Burke Feed Mill
Burke, SD
Custom Horse Feed — Passed
None found

C & S Products Co.
Fort Dodge, IA
Finch Snack — Passed
Found: Wild mustard 55/lb, Wild oat 32/lb
Only 1 Wild mustard seed germinated

Cenex Harvest States
Claire City, SD
Grain Screenings — Passed
Found: Canada thistle 299/lb, Quackgrass 1288/lb, Wild oat 136/lb, Wild mustard 5/lb
No seeds germinated

Central Dakota Grain
Timber Lake, SD
Custom Feed — Passed
None found

Dakota Mill & Grain
Belle Fourche, SD
Custom Mixed Feed — Passed
None Found

Dakota Mill & Grain
Fort Pierre, SD
Custom Mixed Feed — Passed
None found

Dakota Mill & Grain
Sturgis, SD
Sweet Chop Feed — Passed
None found

Dakota Mill & Grain
Wall, SD
Custom Mixed Feed — Not Passed
Found: Field bindweed 4/lb
2 Field bindweed germinated

Ducoa
Highland, IL

Tylan 10 Type B Medicated Premix — Passed
None found

Farmers Union Coop Elevator
Kennebec, SD
Custom Mixed Feed — Passed
None found

Gutwein & Co.
Francesville, IN
Morning Song Country Pride Wild Bird Food — Passed
Found: Giant foxtail 4/lb, no seeds germinated

Hartz Mountain Company
Secaucus, NJ
Hamster & Gerbil Food — Passed
None Found

Kaytee Products Inc.
Chilton, WI
Wild Finch Bird Seed — Passed
Found: Dodder 5/lb, no Dodder seeds germinated

Land O'Lakes/Harvest States Feeds
Sioux Falls, SD
Six In One — Passed
None found

Metz Farms
Grand Rapids, MI
Squirola KOB — Passed
None found

Nature's Gold
Pleasant Plain, OH
Hamster & Gerbil Food — Passed
None found

Cockatiel Food — Passed
None found

New Underwood Grain
New Underwood, SD
Custom Mixed Feed — Passed
None found

Pranger's Feed Mill
Platte, SD
Custom Hog Feed — Passed
None found

Custom Hog Feed — Passed
None found

Rancher Feed & Seed
Buffalo Gap, SD
Hen Feed — Not Passed

Found: Wild oat 38/lb, 9 Wild oat seeds germinated

Scott Pet Products
Rockville, IN
Deluxe Wild Bird Seed — Passed
None found

Southwest Grain
Belle Fourche, SD
Custom Dairy Feed — Passed
None found

Tabor Feed & Grain
Tabor, SD
Custom Hog Feed — Passed
None found

Valley Splendor
Fargo, ND
Sunrise Blend Wild Bird Food — Passed
Found: Wild mustard 3/lb, no seeds germinated

Bird Seed — Passed
Found: Wild oat 9/lb, only 2 Wild oat seeds germinated

Volga Ag Service
Volga, SD
Custom Dairy Feed — Passed
None found

ANIMAL FEED AND DRUG CONTAMINANTS MONITORING PROGRAM
Vomitoxin

Vomitoxin is the common name for the mycotoxin *deoxynivalenol* (DON). DON is one of a closely related group of mycotoxins known as the trichothecene mycotoxins. The name Vomitoxin was chosen because if enough contaminated grain or feed is eaten by an animal that animal may begin to vomit.

If vomitoxin is present in sufficient quantity, it will usually result in feed refusal by the animals. Swine seem to be the most sensitive animals, chickens seems to be the least sensitive. Cattle are in the middle of that scale. Consumption of enough contaminated feed could be toxic to the animal consuming it. Because this toxin stimulates vomiting, though, death is rare. Most animals will quit eating before they consume enough feed to cause death. The toxin may also suppress the animal's immune system, allowing a secondary infection to mask the actual problem.

These mycotoxins are produced by fungi, and the *Fusarium* family is primarily responsible for the production of vomitoxin. Cool, wet weather seems to stimulate the production of the trichothecene mycotoxins (compared to aflatoxin, which is usually found during drought conditions). Because the trichothecene mycotoxins are closely related, the presence of one toxin (such as vomitoxin) indicates that other mycotoxins may also be present. Because it is difficult to analyze mycotoxins, a toxin that can be identified and quantitated such as vomitoxin may be blamed for problems caused by other toxins that are harder to identify.

Fusarium growth requires a minimum of 22-25% moisture, so the toxin should not continue to be produced in properly stored grain or feed. Toxin already present, however, will not decrease even thought he fungus may have quit growing. This points out the importance of maintaining clean bins, trucks and feed bunks. Although there is no direct correlation between mold or scab on grain or feed and the amount of vomitoxin, the presence of mold indicates that vomitoxin may be present.

Because vomitoxin occurs sporadically and in localized areas, it has not been extensively researched and there are no federal regulations concerning the use of contaminated grain. The Food and Drug Administration (FDA) has published some guidelines pertaining to the use of contaminated grain, however. They are:

1. 1 ppm DON (vomitoxin) on finished wheat products, e.g. flour, bran and germ, that may potentially be consumed by humans. FDA is not stating an advisory level for wheat intended for milling because normal manufacturing practices and additional technology available to millers can substantially reduce DON levels in the finished wheat product from those found in the original raw wheat. Because there is significant variability in manufacturing processes, an advisory level for raw wheat is not practical.

2. 10 ppm DON on grains and grain by-products destined for ruminating beef and feedlot cattle older than 4 months and for chickens with the added recommendation that these ingredients not exceed 50% of the diet of cattle or chickens.

3. 5 ppm DON on grains and grain by-products destined for swine with the added recommendation that these ingredients not exceed 20% of their diet.

4. 5 ppm DON on grains and grain by-products destined for all other animals with the added recommendation that these ingredients not exceed 40% of their diet.

The first guideline applies only to finished *wheat* products intended for human food. It does not apply to other grains such as corn, oats or barley, for example. Guidelines 2-4 apply to any type of grain or grain by-product intended for use as animal feed.

Limited data suggests that as little as 1 ppm vomitoxin may result in reduced feed intake of swine. Poultry and ruminants tolerate levels significantly higher than this.

During August 1993, the Department of agriculture collected 29 samples of small grains from the northern and central parts of the state. Individual sample results ranged from 0.7 to 20 ppm, with vomitoxin detected in every sample. The average of these samples was 7.6 ppm. This contrasts greatly with data collected in 1991 and 1992, when parts of South Dakota were affected by vomitoxin in small grain and corn. Analysis of those crops found vomitoxin to be widespread, but at low levels. Of 53 samples analyzed during that time, only two samples contained more than 2 ppm DON and the highest level detected was 2.6 ppm. Since 1993, vomitoxin has not been much of a problem in the state. However, occasionally ingredients are transported here from areas where vomitoxin has occurred. In these cases, it is important to be aware that vomitoxin sometimes concentrates in grain by-products routinely used as feed ingredients.

SAMPLING PROGRAM

While the Department of Agriculture has not established a schedule for routine sampling of commodities to monitor vomitoxin occurrence, the inspection staff is instructed to obtain samples for analysis whenever contamination I suspected. Individual producers and businesses may also follow these same guidelines. Sampling procedures are:

1. Collect a representative sample of the material. Two pounds is the minimum sample size needed.
2. Collect and submit samples in heavy paper bags. DO NOT USE PLASTIC BAGS!
3. Make sure each sample is carefully wrapped and identified.
4. Include your name, complete address, and telephone number with the samples.
5. Mail samples with high moisture early in the week so they don't get left in the post office over a weekend. This may cause sample degradation.

Most labs will phone or FAX results if that service is requested. If you have any questions concerning lab procedure or practice, please contact the lab prior to sending your sample. Analysis can be done in-state by Olson Biochemistry Labs, SDSU, P.O. Box 2170, Brookings, SD 57007 (phone 605-688-5466). The Department of Agriculture also maintains a list of commercial labs in the upper Midwest that provide mycotoxin analysis.

ANIMAL FEED AND DRUG CONTAMINANTS MONITORING PROGRAM

Selenium

Selenium is a necessary trace mineral in animal diets. Too little selenium in the diet may cause a deficiency-related response, but too much selenium may be toxic. Nutritional muscular dystrophy is the most common deficiency-related problem. The most common problem related to toxicity is alkali disease, also known as blind staggers.

The primary source of dietary selenium is the soil where the crop or grass grows. Much of the United States contains soils low in selenium and the forage and grain grown in these locations do not contain enough selenium to meet the dietary requirements of livestock. Animals raised in selenium-deficient areas often require some sort of supplementation to prevent deficiencies and related problems. Most South Dakota soils, on the other hand, contain adequate to excessive amounts of selenium and toxicity related problems are more common here than deficiency related problems.

Selenium supplementation of animal diets was first approved by the Food and Drug Administration (FDA) in 1974, allowing for limited, low level supplementation in only a couple animal species. Since that time, FDA has approved supplementation at higher levels and in more species. Specifics are discussed in the Code of Federal Regulations, Chapter 21, Section 573.920 (21 CFR 573.920).

Since 1987, when the current regulation was adopted, selenium supplementation has been allowed in the complete feed of swine, chickens, turkeys, sheep, cattle, and ducks at a level not exceeding 0.3 parts per million (ppm). It is allowed for limit feeding at a maximum intake of 3 milligrams per head per day (mg/hd/day) in cattle and 0.7 mg/hd/day in sheep. It may also be fed free-choice in salt-mineral mixtures to cattle and sheep at the same amounts described for limit feeding.

21 CFR 573.920 goes further to specify some premix, manufacturing and labeling requirements, the most important of which is the mandatory label warning statement, which is: *Caution: Follow label directions. The addition of this premix containing selenium is not permitted.*

Usually this statement means that the maximum amount of selenium allowed has been added to a product. In complete feeds containing added selenium at a rate of 0.3 ppm, this means that a ton of feed contains 272.4 mg of selenium. Sometimes the label of mineral/trace mineral premixes will contain a statement explaining this. For example, “adding 50 pounds of this product to one ton of feed will provide 272.4 mg (0.3 ppm) of selenium.”

Several years ago, selenium supplementation of animal feeds came under scrutiny due to environmental concerns. Our concern is environmental selenium. Considering the amount of selenium that livestock in South Dakota may consume from their drinking water and locally grown forages and grain, we do not feel that excess selenium (beyond the amount guaranteed) should be encouraged. This is one of the reasons we have been monitoring selenium in feeds, and we are prepared to take regulatory action on samples that exceed the guarantee by more than the analytical variation. However, our analytical data seem to indicate that feed manufacturers are doing a pretty good job in getting the right amount of selenium into their feed products. For 262 samples analyzed between 1993 and 1997 we found a 90% compliance rate. Of the samples reported NOT PASSED during that time, most were deficient.

SAMPLING PROGRAM

The purpose of this monitoring program is to look at the accuracy of feed labels regarding selenium content of the product. This includes evaluating claims that the product contains the maximum amount of selenium when it may contain more than is allowed or less than is expected. The results may also reflect mixer ability and efficiency in those cases where the correct amount of selenium was added to a feed but the analytical results were not as expected.

Specific instructions to field staff for our selenium monitoring program are as follows:

1. Products targeted for monitoring are those products containing a guarantee for selenium, the mandatory selenium warning statement, or claims relating to selenium and its benefits. Additionally, some products without claims or guarantees, but with a source of selenium listed as an ingredient, may be analyzed.

2. Collect a representative sample of the material in question, as well as a product label, if possible.

3. Request a selenium analysis in the “Remarks” section of the Inspectors Report on Sample Form.

Sodium selenite is the form of selenium most often used in the production of animal feeds. Care should be taken when handling selenium premixes. Most feed mills will use a premix containing 0.06% selenium to manufacture complete feeds. Feed mills manufacturing premixes may also use a 1.0% selenium premix. Avoid Skin and eye contact, as well as ingestion and inhalation. Wash with soap and water after exposure to concentrated premixes and prior to eating, drinking or using tobacco. “Pure” sodium selenite contains 45% selenium and should be avoided; it is toxic and should not be handled without protective clothing and a respirator.

SELENIUM ANALYSIS OF COMMERCIAL FEEDS
SUMMARY

Commercial Feeds Sampled January 1, 1999 - December 31, 1999

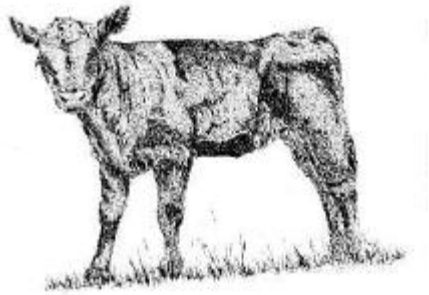
Lab number	Manufacturer	Claim (ppm)	Found (ppm)	Not passed (NP)
99F-00167	Hubbard Feeds	20.0	13.8	Deficient
99F-00406	Vigortone Ag Products	26.4	25.0	
99F-00407	Vigortone Ag Products	26.4	24.8	
99F-00907	Land O'Lakes/Harvest States	35.2	36.0	
99F-00912	Kent Feeds	28.0	33.1	
99F-00986	Zip Feed Mills	35.0	27.4	
99F-00989	Ralco Mix Products	26.0	74.7	
99F-00990	Ralco Mix Products	6.60	22.3	
99F-01653	Land O'Lakes/Harvest States	35.0	25.0	Deficient
99F-01655	Purina Mills	4.40	4.52	
99F-01722	Golden Sun Feeds	22.0	20.8	
99F-01782	Land O'Lakes/Harvest States	5.00	5.22	
99F-01879	Land O'Lakes/Harvest States	35.0	34.0	
99F-03225	Farmland Industries	22.0	20.4	
99F-03255	Hubbard Feeds	12.5	11.4	
99F-03387	New Generation Feeds	8.80	8.06	
99F-03570	Nutra-Lix	6.60	5.59	
99F-03778	Golden Sun Feeds	22.2	22.0	
99F-04002	Kent Feeds	28.0	30.0	
99F-04228	Zip Feed Mills	35.0	38.4	
99F-04282	Zip Feed Mills	35.0	28.0	
99F-04814	Kent Feeds	7.00	7.35	
99F-04815	Kent Feeds	33.0	28.7	
99F-05094	Quality Liquid Feeds	4.00	2.90	Deficient
99F-05157	Moorman Manufacturing	39.0	38.5	
99F-05370	Hubbard Feeds	12.5	11.1	
99F-05374	Vigorena Feeds	20.0	18.7	
99F-05377	Sioux Nation Ag Center	24.0	23.0	
99F-05791	Millbrook Feed Mill	75.0	60.9	
99F-05891	Land O'Lakes/Harvest States	6.00	4.94	
99F-05893	Sioux Nation Ag Center	10.0	0.566	Deficient
99F-05909	Moorman Manufacturing	36.0	35.2	
99F-06035	Consolidated Nutrition	20.0	17.9	
99F-06036	Consolidated Nutrition	20.0	24.8	
99F-06038	Consolidated Nutrition	8.00	9.22	
99F-06039	Consolidated Nutrition	4.50	4.93	
99F-06405	Zip Feed Mills	35.0	37.9	
99F-06406	Zip Feed Mills	35.0	44.1	
99F-07512	Golden Sun Feeds	30.0	28.6	
99F-07514	Hubbard Feeds	9.20	13.8	
99F-08220	Zip Feed Mills	35.0	39.0	
99F-08222	Land O'Lakes	36.0	31.8	
99F-08226	Consolidated Nutrition	19.5	20.0	
99F-10472	New Generation Feeds	8.80	7.24	
99F-10473	Hubbard Feeds	4.40	3.81	
99F-12092	Hubbard Feeds	6.70	6.23	

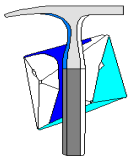
During 1999, 46 samples were analyzed for selenium, with 4 samples reported NOT PASSED, a 91% compliance rate. In the six years prior to 1999 we analyzed 293 samples for selenium, reporting 266 PASSED and 27 NOT PASSED, a 90% compliance rate.

The analytical variation (AV) established by AAFCO for selenium is 25%. Although selenium is required to be guaranteed as a minimum, we may also report a sample as containing excessive selenium if it is more than 25% higher than the guarantee and, when fed according to directions on the product label, it provides more selenium to the animal than is allowed by the selenium feed additive regulation, 21 CFR 573.920. The basis for this policy is the high naturally-occurring selenium levels that can be found in central and western South Dakota. Considering the amount of selenium that livestock may receive from water and locally grown forages and grain, we do not feel that excess selenium in a commercial feed should be encouraged.

We will continue to monitor selenium levels in animal feeds.

SELENIUM EFFECTS ON SOUTH DAKOTA LIVESTOCK PRODUCTION



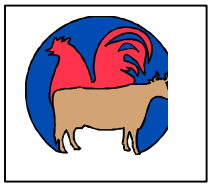


What is Selenium?

Selenium occurs naturally in various mineral forms in nearly all parts of the world and is a necessary part of a healthy diet for humans and animals. Some areas of the world supplement selenium in human and animal diets, as locally produced food and feed does not contain sufficient quantities to meet nutritional needs. However, an over abundance of selenium in human and animal diets can cause severe toxic effects.

Most of western South Dakota is composed of sedimentary marine shales that were developed when an inland sea covered South Dakota. Selenium is often associated with marine shales and therefore South Dakota has areas of high selenium concentration in soil and water. Soils that are high in concentration of selenium are referred to as " seleniferous" soils. Plants growing in those soils will absorb selenium from the soil in the form of selenite (SeO_3) and selenate (SeO_4). Selenate is said to be the most common form of selenium in the state due to the chemical properties of soils in the western portion of the state.

Selenium toxicity is commonly referred to as selenosis. Selenosis was first documented in 1856 near Ft. Randall in South Dakota. A physician with the U.S. Cavalry reported horses experiencing hair, mane, and tail loss and sloughing of hooves. Over the next 75 years similar reports from livestock owners led to a cooperative investigation by the South Dakota and Wyoming Experiment Stations and US Department of Agriculture. It was found that the symptoms experienced by livestock were the result of consuming forage containing high concentrations of selenium .



How do I Know if Selenium is a Problem on my Farm or Ranch?

Visually there are several things to look for that will indicate that forage or water may contain toxic concentrations of selenium. Several plant species have been found to thrive in seleniferous soils and are referred to as selenium indicator plants. Three species of these plants are found in South Dakota, Twogrooved poisonvetch (*Atragalus bisulcatus*), Racemed poisonvetch (*Astragalus racemosus*), and Prince's plume (*Stanleya pinnata*). These plants are reasonably reliable indicators of areas of high selenium concentration in soils.

Areas that are saline or have saline seeps have the potential to have high levels of selenium in forage and water. Not all saline areas will be seleniferous nor will all saline water contain high levels of selenium. Areas where saline seeps discharge water high in selenium have been documented in western South Dakota by the Department of Agriculture.

Another indicator is to observe livestock that may or may not be exposed to toxic levels of selenium. Research has shown that horses will begin to lose the long hairs in the mane and tail from high doses of selenium. Cattle may have a rough hair coat and exhibit symptoms such as reduced reproductive performance, poor weight gain, or hoof or horn changes or loss. Lameness can result from advanced cases of selenosis. Cattle that have been exposed to high levels of selenium have been observed to graze on their knees, as the front feet become sore.

Observations of indicator plants and saline areas provide a producer with an indication of a problem with selenium but the only way to determine if a threat to livestock exists is to sample the water and forage and have it tested by a reputable laboratory. The O.E. Olsen Biochemistry Laboratory on the campus of South Dakota State University provides analysis of forage and water for a fee, as do many other public and private laboratories. A laboratory analysis of water and forage provide a livestock producer with detailed information to make management decisions regarding a livestock operation.

Forage or feed suspected to be high in selenium can be analyzed to determine total selenium. Research has shown that forage or feed that contain 2-5 ppm selenium poses a marginal threat to livestock. Livestock that are continually fed forages containing marginal levels of selenium may experience chronic selenium toxicity. Forage above 5 ppm selenium is said to cause acute toxic conditions in livestock and should be avoided.

Water supplies in seleniferous areas are also a source where toxic levels of selenium can be found. Livestock that use stock dams, streams, or seep discharges in a seleniferous area for a water supply are at risk of chronic or acute selenium toxicity. Livestock should be excluded from water supplies that have a selenium concentration of 0.5 ppm or greater.

What should I Do If I have a Potential for Selenium Toxicity?

Excluding the livestock from water or feed that contains toxic levels of selenium is a priority. Adverse effects of selenium will usually reverse if the source of selenium is reduced and the toxicity has not progressed to a point where it is irreversible.

Seleniferous forages usually occur in a localized area. If these areas can be identified and livestock can be excluded, loss of livestock productivity can be avoided. If feed such as hay or other feed crops have been determined to be high in selenium the feed can still be used if it is blended with feed known to be low in selenium.

Managing selenium in livestock production means that a consideration of the total selenium intake is considered. Selenium can be consumed by livestock in water and feed supplies. Controlling selenium intake will reduce the risk of selenosis and avoid undue economic loss.

ANIMAL FEED & DRUGS CONTAMINANTS MONITORING PROGRAM

Copper

Copper is an essential trace mineral in animal diets. Too little copper in the diet may result in a deficiency, but too much copper may be toxic. Sheep are susceptible to copper toxicity problems, while cattle tend to be more susceptible to deficiency related problems. Monogastric animals, such as swine, tolerate much higher levels of copper than do ruminants.

The amount of copper required in the diet varies from species to species and even from animal to animal. High levels of other minerals, particularly molybdenum, sulfur and zinc, may reduce the availability of copper in the diet. Five to eight parts per million (ppm) of copper may be adequate if interference from other minerals is at a minimum, but may not be adequate if significant amounts of these other minerals are present. The amount of copper present in the soil where the crop or grass is grown largely determines the amount of copper the animal consumes. Problems with absorption in the gut of the animal are a common source of deficiency-related problems.

Copper is necessary for the formation of red blood cells, bone, elastin in the cardiovascular system, and hair and wool pigmentation. Quite a bit of research has been done to determine the effects of feeding high levels of copper to growing swine. Studies have shown that copper levels of 250 ppm may result in an improved growth rate. As a result, copper levels similar to this may be found in many feeds intended for growing swine.

Unlike selenium, there are no specific regulations regarding the use of copper in animal feeds. The following copper compounds are approved for feed use: copper carbonate, copper chloride, copper gluconate, copper hydroxide, copper orthophospate, copper oxide, copper pyrophosphate, and copper sulfate. These compounds are all considered GRAS (generally recognized as safe) and, according to the Code of Federal Regulations 21 CFR 582.80, are allowed for use in animal feeds “when added at levels consistent with good feeding practice”. In the case of copper, the term “good feeding practice” would usually be considered a level necessary to meet nutritional requirements.

Copper sulfate is probably the most common source of copper used in feed manufacturing. Copper sulfate is blue in color and water-soluble. If copper sulfate is subjected to prolonged storage under humid conditions it may cake, which could make it difficult to get a homogeneous mixture in the feed mixer.

In South Dakota, copper deficiency in cattle is more common than copper toxicity in sheep, primarily because much of the forage is relatively low in copper. Typical causes of copper toxicity in sheep are mixer carry-over caused by mixing a sheep feed following a swine or cattle feed or simply by feeding the sheep a product formulated for another species of livestock.

There are some copper sulfate products on the market intended for adding to watering systems, instead of feeds. Copper sulfate also has some applications as a pesticide, for algae control.

AS-FS-105

SAMPLING PROGRAM

Because it is important to provide a sufficient amount of copper to swine and cattle and a safe level of copper to sheep, it is important that copper be used carefully in feed manufacturing. Therefore, the purpose of this sampling plan is to monitor the amount of copper contained in cattle and sheep feeds. In swine feeds, where high levels of copper are desired, an additional concern is monitoring copper levels in feeds when the label of advertising makes a claim regarding copper. In addition to letting us determine "typical" levels of copper in feeds, "atypical" results may point out deficiencies in mixing or cleanout procedures by the manufacturer.

Specific instructions to field staff for our copper monitoring program are as follows:

1. Products targeted for monitoring are all sheep feeds and those cattle and swine feeds containing copper guarantees and/or claims specific to the copper content of the feed. All sheep feeds collected under our routine sampling program should be submitted for a copper analysis.
2. Collect a representative sample of the feed in question, as well as a product label, if possible.
3. Request a copper analysis in the "Remarks" section of the Inspectors Report on Sample form.

Copper sulfate and copper oxide, in concentrated form, are found as fine dust. Eye and skin contact should be avoided. Wear long sleeves, gloves and goggles when handling. A respirator should also be worn for respiratory protection. No special precautions are necessary for handling trace mineral premixes that contain copper.

Issuing Office: South Dakota Department of Agriculture
Office of Agronomy Services
Issue Date: October 1, 1993 Review Date: November 3, 1999

BSE COMPLIANCE ASSISTANCE

This material has been prepared by the South Dakota Department of Agriculture, Office of Agronomy Services, for use by the feed industry and livestock producers in South Dakota. The intent of this document is to help affected parties understand, and comply with, the federal rule prohibiting mammalian-to-ruminant feeding.

On June 5, 1997, the Food & Drug Administration (FDA) published a final rule prohibiting the use of mammalian protein (i.e. animal protein products such as meat and bone meal) in feeds for ruminant animals. The intent of the rule is to help ensure that bovine spongiform encephalopathy (BSE) or "mad cow disease" does not become established in the United States and spread through the feed supply to other animals.

Ruminant animals include cattle, sheep, goats, bison, deer, elk, and other related animals having a four-compartment stomach. Mammalian protein is defined as protein from all mammals, and we refer to these mammalian protein ingredients as "prohibited material".

There are some exemptions from this rule. Porcine (pork) and equine (horse) protein that originate from single-species slaughter plants have been exempted from this ban and may be used in ruminant feeds. Also exempt are blood and milk products, gelatin and processed meat products which have been cooked and offered for human consumption (such as plate waste, for example). Fat, tallow, amino acids and dicalcium phosphate produced as a by-product of gelatin manufacturing are not considered animal proteins and are not covered by this rule. Poultry and fish are not mammals so proteins originating from these species may continue to be used in ruminant feeds. We refer to these ingredients, including porcine and equine protein from single-species slaughter facilities, as "non-prohibited material".

This rule applies to rendering facilities, protein blenders and ingredient brokers, feed manufacturers, trucking companies transporting feeds and feed ingredients, and any person or business that feeds ruminant animals.

For a feed mill, or a livestock producer mixing their own feed, the category of prohibited materials would also include any concentrate feeds which contain a prohibited mammalian protein. For example, a producer or small feed mill may not use meat and bone meal to manufacture feed, but instead will take a product such as a 40% hog concentrate and further mix that to the finished feed. If this concentrate contains a prohibited material, the concentrate, as well as the complete feed, must be treated as prohibited material.

This rule went into effect August 4, 1997, and FDA allowed an additional 60 days to exhaust labeling and products from the marketplace for feeds and ingredients produced before June 5,

1997. All products and labels are supposed to have complied with this rule by October 3, 1997. There are three principal areas in which compliance is needed -- labeling, equipment cleanout and recordkeeping. Each area has different requirements and will be discussed separately.

A firm using only animal protein products from exempt sources, such as pork or horse, or not using animal protein at all, is not required to use any special labeling or equipment cleanout procedures. Even these companies, however, need to be aware of the rule, particularly as it applies to trucks transporting ingredients.

Labeling

Any feed or ingredient (except pet foods) that contains prohibited material will need to have the statement "Do not feed to cattle or other ruminants" placed prominently on the front of the label. This statement may be applied to existing label stock by the use of a rubber stamp or a sticker, and should be printed in a different color, or in some other way offset, from the other label information.

The collective term "animal protein products" may still be used in the ingredient statement, but ruminant feeds may not contain any of the prohibited materials. Any feed for non-ruminants (except pet foods) that contains prohibited materials will need to carry the mandatory warning statement on the label.
Labels for feeds containing no prohibited materials will not need the mandatory warning statement.

Every shipment of feed, whether bagged or bulk, medicated or non-medicated, delivered to the customer or picked up at the feed mill, must be labeled. This new rule adds the requirement that anyone feeding ruminant animals must save copies of invoices and labeling of every feed they receive containing animal protein. Feed that does not have an invoice or label from the manufacturer or distributor does not comply with the law, and keeps the feed user from complying with this rule, as well.

Equipment cleanout

Firms manufacturing feeds for multiple species, and using both prohibited and non-prohibited materials are required to have written cleanout procedures that will be used between batches of feed containing the prohibited and non-prohibited materials. These cleanout procedures are similar in concept to those used in the manufacture of medicated feeds. Cleanout is necessary for all mill systems, including ingredient unloading and conveying, mixing, pellet mills, bulk loadout, bagging equipment, and bulk delivery trucks. The three basic types of cleanout procedure are physical cleanout, flushing and sequencing.

Physical cleanout consists of using any physical means (vacuuming, sweeping, washing, or other suitable method) that is appropriate for the given situation and does not cross-contaminate other parts of the feed mill. For example, use of compressed air would probably not be appropriate in many situations. Material recovered during the cleanout needs to be discarded or saved for use in non-ruminant feed, depending on the circumstances.

Flushing consists of following a feed or ingredient containing prohibited material with a sufficient volume of wheat midds, soybean meal, or other high use ingredient through the entire

system, or at least that portion of the system that has been used. For example, if a truckload of prohibited material was received and unloaded in the truck dump, it would need to be followed by a sufficient quantity of some other non-prohibited material to completely flush the unloading and conveying systems. Once the prohibited material is in storage and feed containing the prohibited material is being made, the flush would need to involve all equipment from the mixer downstream, including delivery trucks if the product is loaded-out bulk. FDA recommends that the volume of material used to flush the equipment should equal the operating volume of the shared equipment. Flush material will need to be properly identified, stored and used in a manner that will prevent cross-contamination of other feeds. When used to make feed, the flush material is considered "prohibited", and must be handled accordingly.

Sequencing is similar to planned flushing. For example, following the manufacture of a swine feed containing prohibited material, another swine, horse or poultry feed containing non-prohibited material would be made and run through all of the same equipment, flushing the system. After a sequence like this, a ruminant feed could be made.

Firms that do not use prohibited materials will not need to worry about equipment cleanout for the purposes of this rule. Cleanout following the manufacture of medicated feeds will still be necessary, however.

Ingredients from single species slaughter facilities

Firms purchasing and using non-prohibited ingredients (horse and/or pork) only from single species slaughter facilities are not required to utilize the mandatory warning statement or special cleanout procedures. These firms will need records sufficient to document that they are obtaining all of their animal protein from single species slaughter facilities. They should also make sure that ingredient haulers are complying with cleanout requirements for trucks.

Recordkeeping

For firms using prohibited materials, the rule requires records sufficient to track ingredients and finished products from receipt, through processing and distribution. Firms not using prohibited materials will need to document that they are using only non-prohibited materials, but will not necessarily need to meet the other recordkeeping requirements of this rule. Feed customers feeding ruminant animals must keep records of the feed they purchase and use. In particular, these records must include invoices and labeling of all feeds containing animal protein.

Records must be available for inspection and copying by state and federal investigators, and must be maintained for one year after distribution of the product for feed manufacturers and distributors. Feed users must maintain the records for at least a year after the feed is received. In some cases, existing business records may be sufficient to comply with this rule. For example, most livestock producers already save invoices to document feed costs for tax purposes.

Livestock producers

Livestock producers feeding ruminant animals, in feeding operations of all sizes, will need to comply with all aspects of this rule. Specifically, if producers mix their own feed, and feed both

ruminants and non-ruminants, they will need to comply with the cleanout and recordkeeping requirements specified by the rule. Although the labeling requirements may not apply if the producer does not sell feed, sufficient records must be kept to document compliance with the regulation. For example, producers mixing their own feed may wish to establish a mixer log book, in which they record the dates they mixed feed containing animal protein, the ingredients in that feed, and the animals to which it was fed.

Ruminant feeders purchasing feed must keep copies of invoices for all feeds received that contain animal protein sources. A copy of the product label for each feed containing animal protein must also be kept. In many cases, particularly for bulk feeds/ingredients, the invoice may contain the required "label" information. If the invoice contains all of the necessary labeling information, such as the list of ingredients, withdrawal statement, etc., it is not necessary to keep a copy of the product label on file.

To determine if the feed contains animal proteins, look at the ingredient list for the terms *animal protein products, meat and bone meal, meat meal, bone meal, feather meal, blood meal, fish meal*, etc. Mention of any type of animal (fish, poultry) or animal product (milk or dairy product, meat) would identify the product as containing an animal protein.

These records must be maintained for at least a year after the date the feed is received, and must be made available for inspection and copying by federal or state investigators. We would recommend that the labels be attached to the corresponding invoice and filed that way. Feeds and feed ingredients not containing animal proteins are not subject to the regulation.

Questions

Questions may be directed to the South Dakota Dept. of Agriculture at 605-773-4432 or the Food and Drug Administration at 301-594-1724.