

1998 ANNUAL REPORT ON COMMERCIAL FEEDS & ANIMAL REMEDIES

January 1, 1998 to December 31, 1998

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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/doa/doa.html>

1998 COMMERCIAL FEED & ANIMAL REMEDY ANNUAL REPORT

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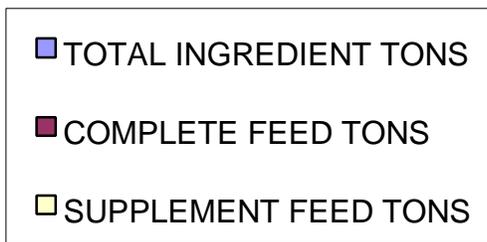
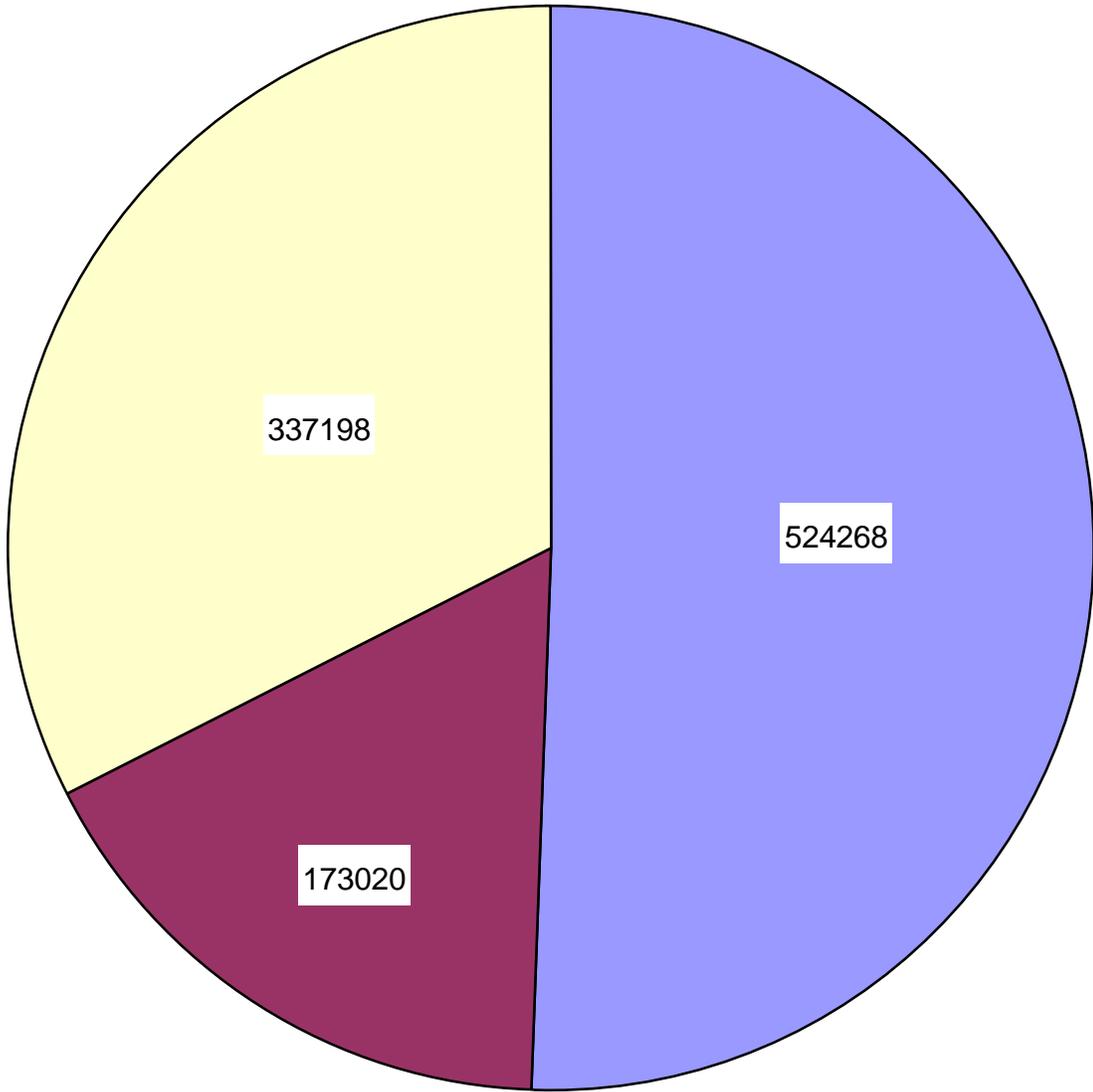
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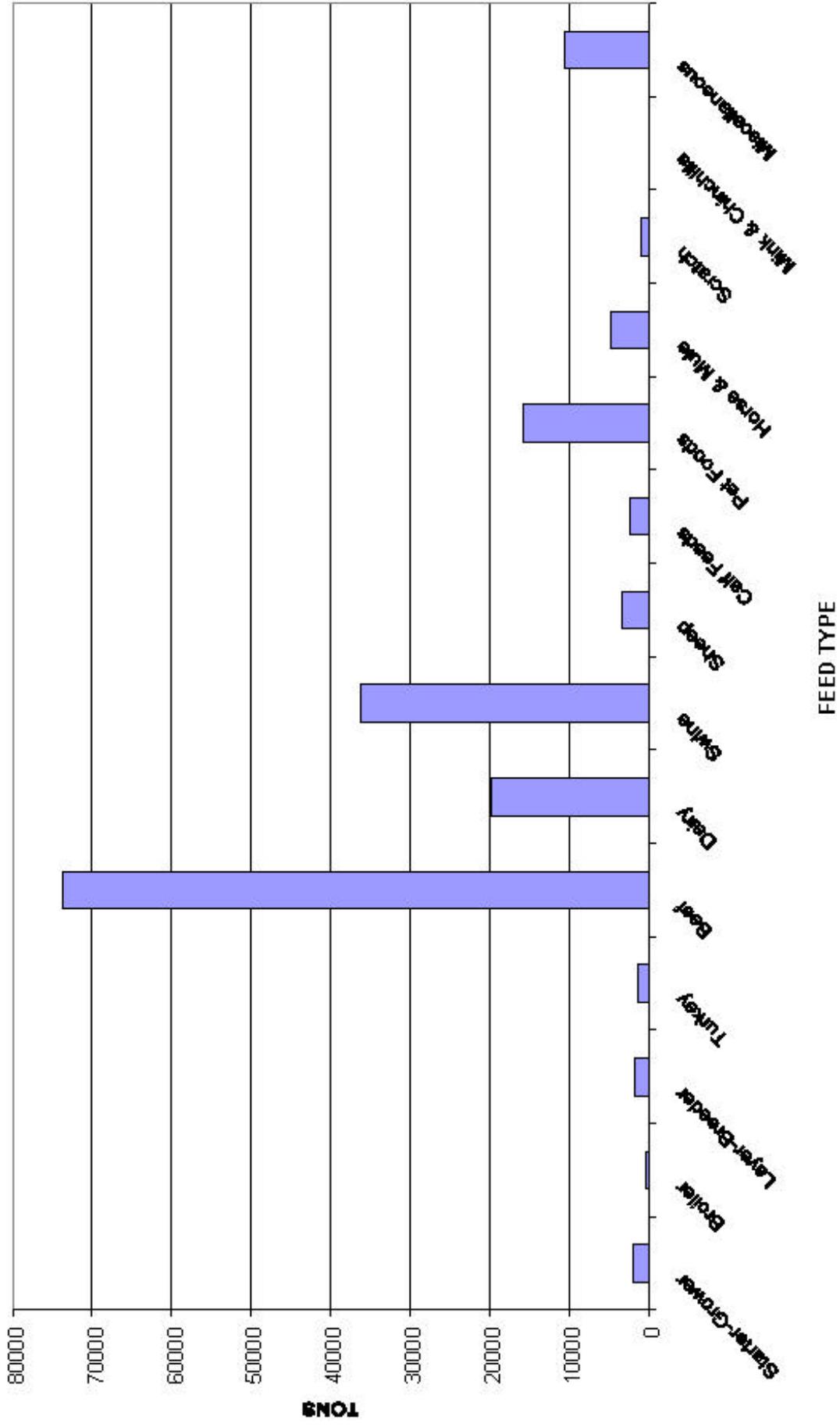
**SOUTH DAKOTA DEPARTMENT OF AGRICULTURE
COMMERCIAL FEED TONNAGE REPORT
1998 TOTAL - 1,034,486 TONS**

FORMULA FEED	TONS COMPLETE	TONS SUPPLEMENT	FEED INGREDIENTS (CONTINUED)	TONS
Starter-Grower	1888.1	529.9	Beet Products	83.0
Broiler	395.1	711.0	Brewery Products	
Layer-Breeder	1683.4	998.0	Citrus Products	
Turkey	1438.1	8254.6	Corn Products	146937.9
Beef	73757.0	125259.6	Cottonseed Products	4234.1
Dairy	19772.3	37471.8	Distillers Products	10153.1
Swine	36267.6	88695.0	Drugs	2721.1
Sheep	3357.4	2147.8	Fats & Oils Products	15483.0
Mineral		21544.0	Grain Sorghum Products	3.0
Vitamins		200.0	Lespedeza Products	
Vitamins & Minerals		1464.6	Linseed & Flax Products	31.7
Calf Feeds	2298.8		Marine Products	1016.0
Pet Foods	15777.0		Milk Products	804.6
Horse & Mule	4832.4		Minerals	31590.9
Scratch	918.9		Molasses	3293.7
Liquid Feeds		47619.0	Oat Products	262.2
Mink & Chinchilla	38.7		Peanut Products	
Silage Additive		27.4	Rice Products	
Miscellaneous	10595.4	2275.1	Rye Products	
			Soybean Products	219475.6
			Urea	1138.8
			Vitamins	1359.2
			Wheat Products	27872.0
			Yeast Products	277.5
			Miscellaneous	25342.0
TOTAL FORMULA FEED	173020.2	337197.8		
FEED INGREDIENTS	TONS		TOTAL INGREDIENTS	524267.7
Alfalfa Products	6363.7			
Animal Products	25727.6			
Bakery Products				
Barley Products	97.0			

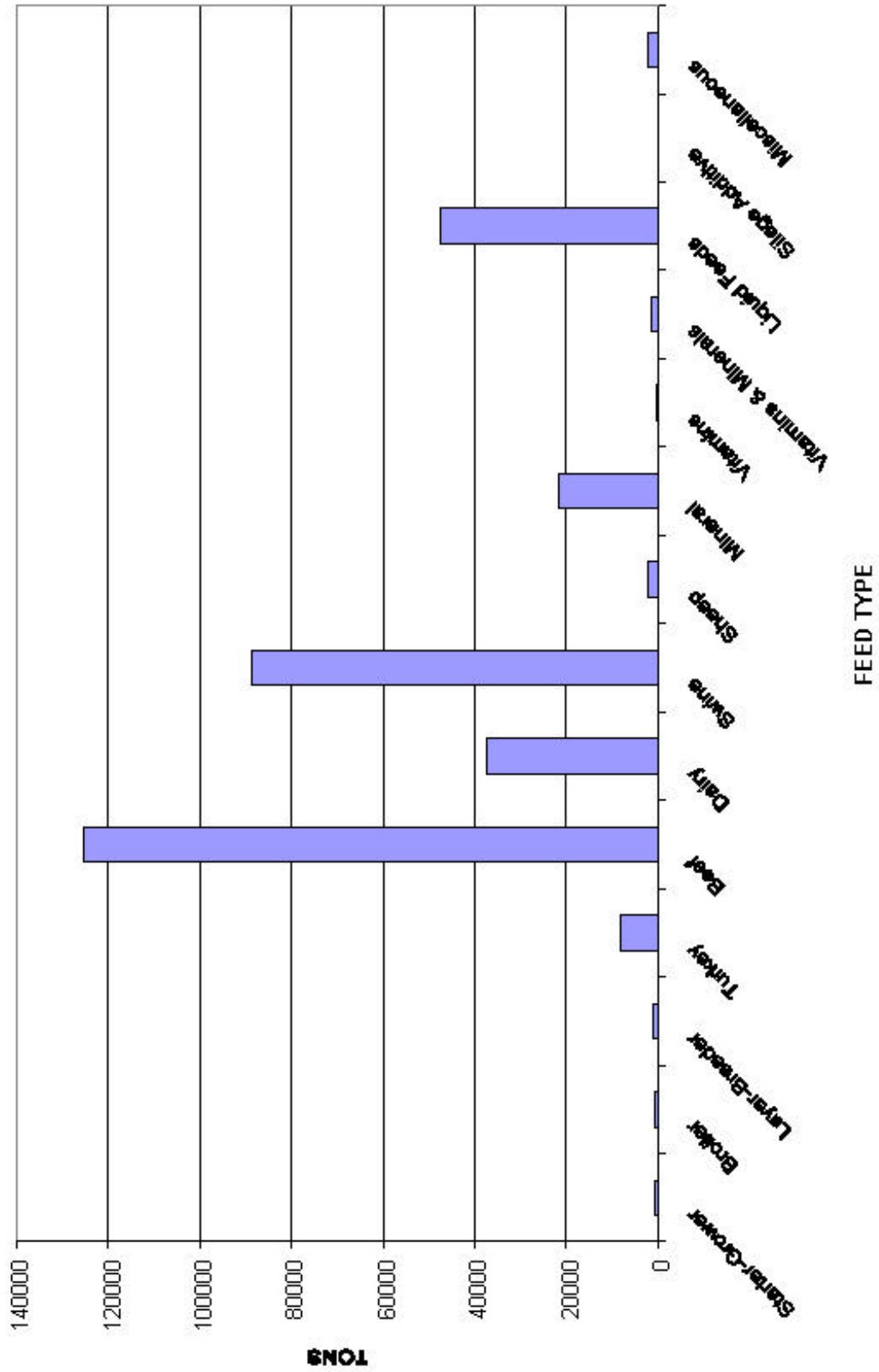
1998 FEED TONNAGE
1,034,486 TONS



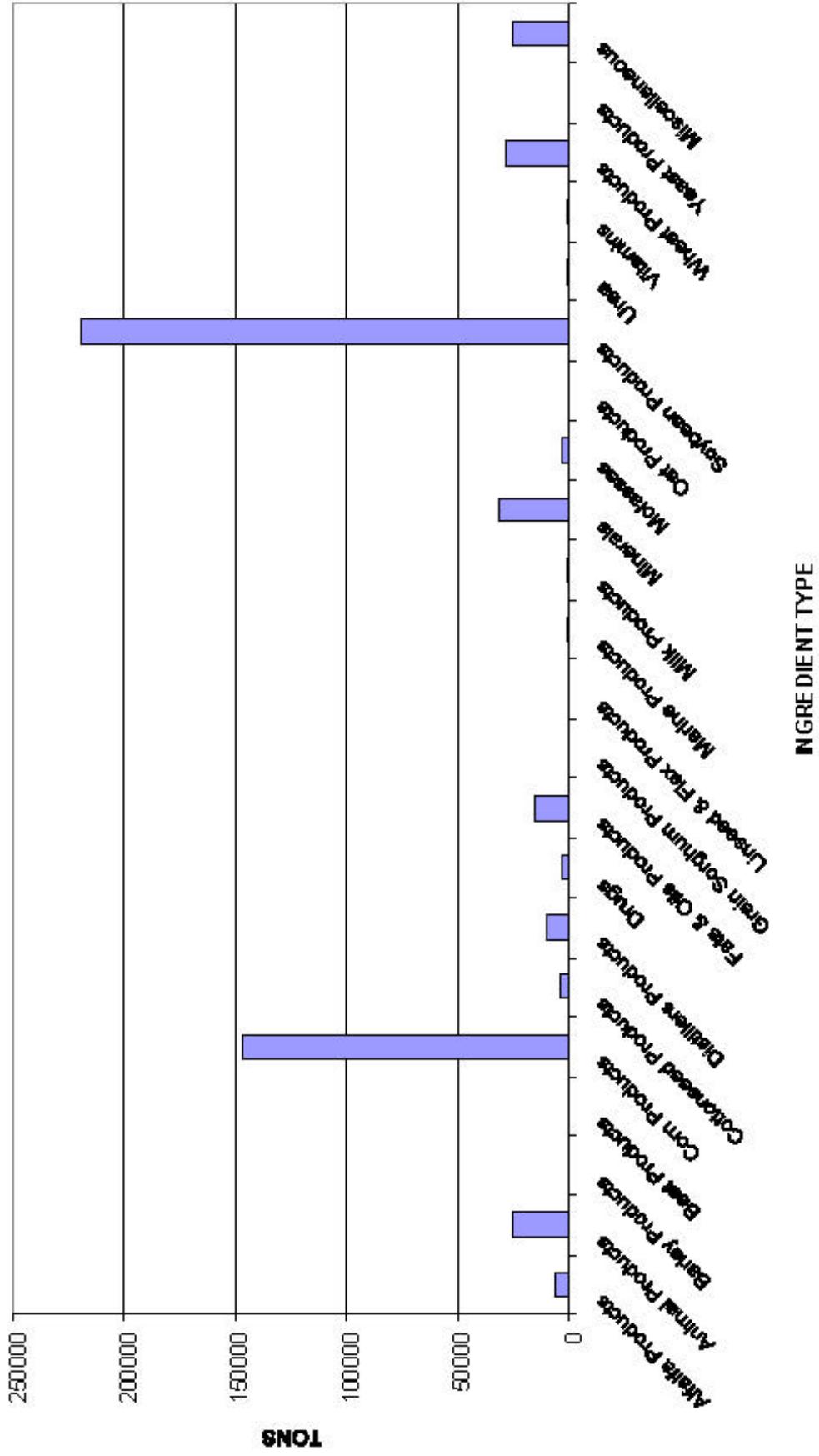
1998 COMPLETE FEED
173,020 TONS



1998 SUPPLEMENT FEED
337,198 TONS



1998 TOTAL INGREDIENTS
524,268 TONS



Commercial Feeds Sample Count Report

Feeds Sampled From 1/1/98 To 12/31/98

Manufacturer and Location			Sample Count	Passed	Not Passed
Abys Feed & Seed	Rapid City	SD	1	1	0
ADM Animal Health & Nutrition Div	Des Moines	IA	1	0	1
Ag Pro Coop	Gordon	NE	3	2	1
Ag Processing Inc	Dawson	MN	2	2	0
Ag Processing Inc	Omaha	NE	2	2	0
Ag Processing Inc	Sergeant Bluff	IA	1	1	0
Agra Partners LTD	West Des Moines	IA	1	1	0
Allied Foods Inc.	Atlanta	GA	1	1	0
American Agco	St Paul	MN	1	1	0
American Protein Corp.	Lytton	IA	4	3	1
Arco Dehydrating Company	Lake Park	IA	2	1	1
Bow Wow Brands Inc	Omaha	NE	1	1	0
Broin Enterprises Inc	Scotland	SD	1	1	0
Campbell Supply	Sioux Falls	SD	1	0	1
Cargill - Nutrena Feed Division	Minneapolis	MN	6	2	4
Cargill Inc	Sioux City	IA	2	2	0
Cenex Land O Lakes	Dell Rapids	SD	1	1	0
Central Bi-Products	Redwood Falls	MN	4	3	1
Cesar Inc.	Vernon	CA	1	1	0
CK Processing Company	Muscatine	IA	1	1	0
Clark County Farmers Elevator	Clark	SD	1	0	1
Commodity Specialists	Minneapolis	MN	1	1	0
Consolidated Nutrition L.C.	Omaha	NE	6	5	1
Consumers Supply Dist Company	Sioux City	IA	5	5	0
Corona Grain and Feed	Corona	SD	1	1	0
Corsica Grain & Feed	Corsica	SD	1	1	0
Country General	Grand Island	NE	6	6	0
Dakota Mill & Grain	Belle Fourche	SD	1	1	0
Dakota Mill & Grain	Philip	SD	1	1	0
Darby Creek Ag/Shur-Tone Feeds	Milford Center	OH	1	1	0
Darling's Nutrition Company	Lincoln	NE	1	0	1
Diamond Pet Foods	Meta	MO	3	3	0
DuCoa	Wilmar	MN	1	1	0
Essential Vitality Inc	Rapid City	SD	1	1	0
Estelline Coop Grain	Estelline	SD	1	0	1
Evsco Pharmaceuticals	Buena	NJ	1	1	0
Farmers Coop Company	Brookings	SD	2	2	0
Farmland Industries Inc	Brandon	SD	2	1	1
Farmland Industries Inc	Huron	SD	2	1	1
Farmland Industries Inc	Kansas City	MO	8	7	1
Federal Beef Processors	Rapid City	SD	1	0	1
Friskies Pet Care Products	Glendale	CA	1	1	0
Golden Acres	Esterville	IA	1	1	0
Golden Sun Feeds Inc	Esterville	IA	15	9	6
Golden Sun Feeds Inc	Sioux Falls	SD	9	6	3
Grand Laboratories Inc.	Freeman	SD	1	0	1
Gutwein and Co	Francesville	IN	1	0	1
Hartz Mountain Corp	Secaucus	NJ	3	2	1

Manufacturer and Location			Sample Count	Passed	Not Passed
Harvest States Coop	Milbank	SD	1	1	0
Harvest States / GTA Feeds	Dickinson	ND	2	2	0
Harvest States / GTA Feeds	Edgeley	ND	3	1	2
Harvest States / GTA Feeds	Gettysburg	SD	6	5	1
Harvest States / GTA Feeds	Sioux Falls	SD	58	46	12
Harvest States / GTA Feeds	Willmar	MN	3	3	0
Hayti Farmers Elevator	Hayti	SD	1	1	0
Heartland Inc	Bismarck	ND	3	2	1
Heinz Pet Products	Newport	KY	3	3	0
Hi-Plains Nutrition Service	Whitewood	SD	3	1	2
Hikari Sales USA, Inc.	Hayward	CA	1	1	0
Hill's Pet Nutrition	Topeka	KS	8	8	0
Hollis Cotton Oil Mill, Inc.	Hollis	OK	1	1	0
Howard Farmers Coop Assn	Howard	SD	1	1	0
Hub City Feed & Seed	Aberdeen	SD	10	7	3
Hubbard Feeds, Inc.	Mankato	MN	12	10	2
Hubbard Feeds, Inc.	Rapid City	SD	8	8	0
Hubbard Feeds, Inc.	Watertown	SD	9	8	1
Hubbard Feeds, Inc.	Whitewood	SD	1	0	1
HyVee Inc.	DesMoines	IA	1	1	0
IBP Inc	Dakota City	NE	2	2	0
J&R Distributing	Lake Norden	SD	1	0	1
John Morrell & Company	Sioux City	IA	3	3	0
Johnsons Ranchers Supply Inc	Wall	SD	1	0	1
Kal Kan Foods Inc	Vernon	CA	1	1	0
Kay Dee Feed Company	Sioux City	IA	3	3	0
Kaytee Products Inc	Chilton	WI	1	1	0
L/M Animal Farms	Pleasant Plain	OH	2	1	1
Labolt Farmers Grain	Labolt	SD	1	1	0
Land O Lakes Ag Services	Dawson	MN	3	3	0
Land O Lakes Ag Services	Volga	SD	1	1	0
Land O Lakes Inc.	Fort Dodge	IA	8	6	2
Land O Lakes, Inc.	Sheldon	IA	4	4	0
Madison Farmers Elevator	Madison	SD	1	1	0
Manna Pro Corporation	St. Louis	MO	1	0	1
McFleeg Inc	Watertown	SD	2	2	0
Mid-States Distributing Company	St Paul	MN	1	1	0
Midwest Cooperatives	Onida	SD	1	1	0
Midwest PMS	Gering	NE	2	1	1
Midwest PMS	Minatore	NE	4	3	1
Millbrook Feed Mill	Mitchell	SD	1	1	0
Minkota Farmers Coop	Baltic	SD	1	1	0
Moorman Mfg Company	Quincy	IL	3	3	0
Muellers Feed Mill	Martin	SD	2	0	2
National By-Products Inc	Omaha	NE	1	1	0
National Pet Products, Inc.	New Holstein	WI	1	1	0
Natura Pet Products	Santa Clara	CA	1	1	0
Natures Gold	Pleasant Plain	OH	1	0	1
Nelson & Sons Inc	Murray	UT	3	3	0
New Generation Feeds	Belle Fourche	SD	1	0	1
New Underwood Grain	New Underwood	SD	1	1	0
Northern Sun/Div.of ADM	Enderlin	ND	3	2	1
OSI Marine Lab	Hayward	CA	1	1	0
PCS Phosphate Company Inc	Raleigh	NC	1	1	0
Pennfield Animal Health	Omaha	NE	1	1	0
Pet Life Foods, Inc.	Willowbrook	IL	1	1	0

Manufacturer and Location			Sample Count	Passed	Not Passed
Plains Milling Inc.	Magnolia	MN	2	2	0
Premier Farmtech	Kansas City	MO	1	0	1
Pro Visions Pet Specialties	St. Louis	MO	1	1	0
Purina Mills	Minneapolis	MN	1	1	0
Purina Mills	Sioux City	IA	5	5	0
Purina Mills	St. Louis	MO	4	4	0
Purina Mills	Aberdeen	SD	2	0	2
Quality Liquid Feeds	Dunlap	IA	1	0	1
Quality Liquid Feeds	Dodgeville	WI	1	0	1
Ragland Mills Inc	Neosho	MO	1	1	0
Ralston Purina Company	St. Louis	MO	1	1	0
Rancher Feed & Seed	Buffalo Gap	SD	1	1	0
Roche Vitamins & Fine Chemicals	Parsippany	NJ	2	1	1
Rudebusch Bros	Castlewood	SD	1	1	0
Safeway Inc	Oakland	CA	2	2	0
Scranton Equity Exchange	Scranton	ND	2	2	0
SD Soybean Processors	Volga	SD	4	4	0
SD Wheatgrowers Assn	Bristol	SD	1	0	1
Sheba Inc.	Vernon	CA	1	1	0
Shur-Tone Feeds	Milford Center	OH	1	0	1
Shurfine International	Northlake	IL	1	1	0
Simmons Foods	Southwest City	MO	1	1	0
Sioux Nation Ag Center	Sioux Falls	SD	4	4	0
South Shore Elevator Co.	Waubay	SD	1	1	0
Southern Cotton Oil Co.	Levelland	TX	1	1	0
Squire Products Company	Owatonna	MN	1	1	0
St. Jon Pet Care Products	Harbor City	CA	1	0	1
Sterling Technology	Toronto	SD	1	0	1
Terra International	Canton	SD	1	0	1
Terra International	Tea	SD	1	1	0
The Iams Company	Dayton	OH	4	4	0
Tizco Inc	Columbus	OH	1	1	0
Tradition Feed Products Company	Mankato	MN	6	5	1
Triple F Products	Des Moines	IA	1	1	0
Vigortone Ag Products Inc	Cedar Rapids	IA	2	1	1
Wagner Bros Feed Corp	Farmingdale	NY	1	1	0
Watertown Coop Elevator	Watertown	SD	2	2	0
West Plains Grain	Oelrichs	SD	1	1	0
Western Feed Co.	Scranton	ND	1	1	0
Westway Trading	New Orleans	LA	3	3	0
Westway Trading	St. Paul	MN	2	1	1
Whiskas	Vernon	CA	2	2	0
Windy Hill Pet Food Company	Brentwood	TN	1	1	0
Zapata Protein (USA) Inc	Maneville	LA	1	1	0
Zip Feed Mills	Huron	SD	4	4	0
Zip Feed Mills	Sioux Falls	SD	29	24	5
Totals:			430	342	88

Percent Passed:

79.5% **Percent Not Passed:** 20.5%

Commercial Feeds Summary Report

Feeds Sampled 1-1-1998 to 12-31-1998

Manufacturer Location	Product	Analyte	Found	Claim	
Abys Feed & Seed Rapid City, SD					
	Wild Bird Mixture		98F-00559		
		Crude Protein, %	9.68	10	
ADM Animal Health & Nutrition Division Des Moines, IA					
	** Tylan-10Tylosin Phosphate		98F-02681		
		Calcium, %	10.28	9.5-11.4	
		Crude Fiber, %	27.05	35.5	
		Tylosin, g/lb	6.607	10	DEFICIENT
Ag Pro Coop Gordon, NE					
	All American Show Flake Horse		98F-03207		
		Crude Protein, %	11.68	12	
	Hen Scratch		98F-03457		
		Crude Protein, %	9.68	8.5	
	** Dehydrated Alfalfa		98F-03459		
		Crude Fiber, %	28.04	27	
		Crude Protein, %	16.08	17	DEFICIENT
Ag Processing Inc Dawson, MN					
	Soybean Meal 44% Pro		98F-05074		
		Ash, %	5.42	8	
		Crude Protein, %	45.69	44	
	Soybean Meal 44% Protein		98F-05536		
		Ash, %	5.48	8	
		Crude Protein, %	44.32	44	
Ag Processing Inc Omaha, NE					
	Soybean Meal		98F-01438		
		Ash, %	6.23	8	
		Crude Protein, %	46.59	44	
	Soybean Meal 46.5% Protein (Solvent Extracted)		98F-01441		
		Ash, %	6.40	8	
		Crude Protein, %	46.64	46.5	
Ag Processing Inc Sergeant Bluff, IA					
	47% Soybean Meal		98F-02620		
		Ash, %	6.13	8	
		Crude Protein, %	46.40	46.5	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim		
Agra Partners LTD West Des Moines, IA	Dical 18.5%		98F-02267			
		Calcium, %	20.57	20-24		
		Phosphorus, %	18.440	18.5		
Allied Foods Inc. Atlanta, GA	Strongheart-Preferred Meat Cuts in Gravy- Dog Food		98F-01435			
		Oven Moisture, %	75.46	82		
		Crude Protein, %	10.90	8		
American Agco St Paul, MN	Natures Seasons Premium Wild Bird Food		98F-01446			
		Crude Fiber, %	8.64	10		
		Crude Protein, %	11.90	10		
American Protein Corp. Lytton, IA	Steamed Bone Meal		98F-00276			
		Calcium, %	22.34	22-26		
		Crude Fat, %	16.98	12		
		Phosphorus, %	10.480	11		
		Crude Protein, %	15.55	12		
	Steamed Bone Meal		98F-00942			
		Ash, %	58.62	88		
		Calcium, %	22.42	22-26		
		Crude Fat, %	18.20	12		
		Phosphorus, %	10.450	11		
	*** Bone Meal-Steamed		98F-01539			
		Calcium, %	24.13	22-26		
		Crude Fat, %	14.19	12		
		Phosphorus, %	11.420	11		
		Crude Protein, %	13.36	15	DEFICIENT	
Steamed Bone Meal		98F-03447				
	Ash, %	62.34	68			
	Calcium, %	23.42	22-26			
	Crude Fat, %	14.55	12			
	Phosphorus, %	10.490	11			
Crude Protein, %		16.76	12			
	Alfalfa Pellets		98F-02685			
		Crude Fiber, %	25.65	30		
Crude Protein, %		17.65	17			
*** Arco Alfalfa Meal 17% Alfalfa pellets		98F-06355				
	Crude Fiber, %	28.56	30			
	Crude Protein, %	15.59	17	DEFICIENT		
Bow Wow Brands Inc Omaha, NE	Bow Wow Bite Size Dog Food		98F-08688			
		Fat: Acid Hydrolysis, %	9.36	10		
		Oven Moisture, %	7.71	12		
		Crude Protein, %	22.04	22		

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Broin Enterprises Inc					
Scotland, SD					
	Dakota Gold Corn Distillers Dry Grain		98F-05029		
		Crude Fiber, %	6.30	12	
		Crude Fat, %	9.58	8	
		Oven Moisture, %	9.61	12.5	
		Crude Protein, %	28.70	26	
Campbell Supply					
Sioux Falls, SD					
	*** 37% Block (Campbell Supply)		98F-06260		
		Calcium, %	4.74	6-7	DEFICIENT
		Equiv Crude Protein, %	16.42	18.5	
		Crude Protein, %	37.70	37	
		Salt (ChlorideX1.65), %	10.39	16-19	DEFICIENT
		Salt (Sodium X 2.54), %	11.35	16-19	DEFICIENT
		Vitamin A, IU/lb	33000	30000	
Cargill - Nutrena Feed Division					
Minneapolis, MN					
	14% High Energy (STL) Cube		98F-00277		
		Crude Protein, %	14.62	14	
	*** Feed Lot-41w (B250)(NS) Supplement Medicated		98F-02119		
		Calcium, %	8.34	7-8	
		Crude Fiber, %	8.64	18	
		Equiv Crude Protein, %	26.46		
		Lasalocid, g/ton	381.000	500	
		Crude Protein, %	40.73	41	
		Salt (Sodium X 2.54), %	4.95	5.5-6.5	
		Sodium, %	1.95	2.2-2.9	
		Vitamin A, IU/lb	9250	40000	DEFICIENT
	*** Right Track Gold Starter Feed (CSP)(NS) Medicated		98F-02120		
		Chlortetracycline, g/ton	63.767	100	DEFICIENT
		Crude Protein, %	19.98	19	
		Sulfathiazole, %	0.005	0.011	DEFICIENT
	Nutrena Early Weaning Pig Pellets (MCX)(GF) Medicated		98F-02121		
		Carbadox, g/ton	44.75000	50	
		Crude Fat, %	6.96	6.5	
		Crude Protein, %	21.68	22	
	*** Nutrena Right Now Bronze Plains Mineral (ATL)		98F-02679		
		Calcium, %	11.24	11-13	
		Magnesium, %	2.28	3	DEFICIENT
		Phosphorus, %	11.360	10	
		Potassium, %	1.235	2	DEFICIENT
		Salt (Sodium X 2.54), %	11.80	11.5-12.5	
		Selenium, ug/g (ppm)	27.850	30	
		Sodium, %	4.64	4.5-5.5	
		Vitamin A, IU/lb	165000	100000	
	*** Nutrena Feed Lot-41W (B250)(NS) Supplement-Medicated		98F-02680		
		Calcium, %	7.41	7-8	
		Crude Fiber, %	7.65	18	
		Equiv Crude Protein, %	24.85	29	
		Lasalocid, g/ton	438.000	500	
		Crude Protein, %	39.19	41	DEFICIENT
		Salt (Sodium X 2.54), %	4.68	5-6	
		Sodium, %	1.84	2.2-2.9	
		Vitamin A, IU/lb	36000	40000	
Cargill Inc					
Sioux City, IA					
	Soybean Meal		98F-00996		
		Crude Protein, %	45.87	46.5	

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Soybean Meal		98F-07888		
		Crude Protein, %	47.55	44	
Cenex Land O Lakes Dell Rapids, SD					
	Custom Mix		98F-06357		
		Lasalocid, g/ton	34.200	41	
Central Bi-Products Redwood Falls, MN					
	** Gro-Mor Hydrolyzed Poultry Feathers		98F-01439		
		Ash, %	19.35	6	EXCESSIVE DEFICIENT
		Crude Protein, %	64.93	80	
	Feather Meal		98F-02622		
		Crude Protein, %	78.61	80	
	Gro-Mor Hydrolyzed Poultry Feathers		98F-03853		
		Ash, %	1.57	6	
		Crude Protein, %	87.29	80	
	Gro-Mor Hydrolyzed Poultry Feathers		98F-08045		
		Ash, %	2.73	6	
		Crude Protein, %	84.84	80	
Cesar Inc. Vernon, CA					
	Cesar Select Dinners For Small Dogs		98F-08687		
		Oven Moisture, %	81.30	82	
		Crude Protein, %	11.67	8	
CK Processing Company Muscatine, IA					
	Econolass		98F-02195		
		Crude Fiber, %	19.16	20	
		Crude Protein, %	8.13	6	
Clark County Farmers Elevator Clark, SD					
	** Custom Mix-Medicated		98F-01720		
		Monensin, g/ton	43.80	32	EXCESSIVE
		Oxytetracycline, g/ton	364.500	500	
Commodity Specialists Minneapolis, MN					
	Distillers Dried Grains with Solubles		98F-01581		
		Ash, %	4.80	8	
		Crude Fiber, %	6.99	15	
		Crude Fat, %	9.99	8	
		Crude Protein, %	29.09	28	
Consolidated Nutrition L.C. Omaha, NE					
	Pen Pals Professional Rabbit 46 ,M-121/S-5335		98F-02200		
		Crude Fiber, %	17.79	18-21.6	
		Crude Protein, %	17.54	16	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Beef Mineral Prospector 12-12 M-7791/S-5891		98F-02259		
		Calcium, %	14.16	12-14.4	
		Iodine, ppm	82.000	100	
		Phosphorus, %	11.380	12	
		Salt (Sodium X 2.54), %	12.53	12-14.4	
		Selenium, ug/g (ppm)	19.800	20	
		Vitamin A, IU/lb	168000	150000	
	*** Feedlot Supplement 40/30 S-2272-13C/M-7672-13C		98F-02261		
		Calcium, %	9.89	9-10.8	
		Crude Fiber, %	17.62	18	
		Equiv Crude Protein, %	25.06	30	
		Monensin, g/ton	335.00	400	
		Crude Protein, %	34.68	40	DEFICIENT
		Salt (Sodium X 2.54), %	5.08	5-6	
		Vitamin A, IU/lb	56000	25000	
	Pen Pals Professional Rabbit 16 M-121-5-5335		98F-03425		
		Crude Fiber, %	17.74	8-21.6	
		Crude Protein, %	16.91	16	
	Master Mix Feed Power 40 867M		98F-03906		
		Calcium, %	4.19	3-4	
		Crude Protein, %	39.81	40	
		Salt (Sodium X 2.54), %	3.14	2.5-3.5	
	Rough-N-Ready 14M-7038-72A/S-2338-72A Medicated		98F-06261		
		Crude Fiber, %	21.46	22	
		Lasalocid, g/ton	29.400	30	
		Crude Protein, %	13.98	14	
Consumers Supply Dist Company					
Sioux City, IA					
	85% Blood Meal		98F-00053		
		Crude Protein, %	90.73	85	
	Fish Meal 60%		98F-01613		
		Crude Fat, %	9.91	6.5	
		Crude Protein, %	65.10	60	
	Meat & Bone Meal		98F-01978		
		Calcium, %	8.04	8.4-10	
		Crude Fat, %	14.25	6	
		Phosphorus, %	3.880	4	
		Crude Protein, %	50.38	50	
	50% Meat & Bone Meal		98F-02198		
		Calcium, %	9.93	8.4-10	
		Crude Fat, %	10.51	6	
		Phosphorus, %	4.680	4	
		Crude Protein, %	50.07	50	
	50% Meat and Bone Meal		98F-03913		
		Calcium, %	7.92	8.4-10	
		Crude Fat, %	12.48	6	
		Phosphorus, %	3.880	4	
		Crude Protein, %	49.69	50	
Corsica Grain & Feed					
Corsica, SD					
	Custom Mix		98F-02262		
		Chlortetracycline, g/ton	242.000	200	
		Decoquinatate, g/ton	24.3000	31	

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
Country General				
Grand Island, NE				
	Dyna Gro Savory Salmon Cat Food		98F-00510	
		Crude Fat, %	11.49	5
		Oven Moisture, %	73.79	78
		Crude Protein, %	11.86	9
	37% Range Block		98F-01583	
		Calcium, %	5.41	4-5
		Equiv Crude Protein, %	19.69	18.5
		Crude Protein, %	37.68	37
		Salt (Sodium X 2.54), %	11.45	12-13
		Sodium, %	4.51	4.8-6.3
		Vitamin A, IU/lb	41000	30000
	20% Range Block		98F-01584	
		Calcium, %	3.83	2.5-3.5
		Crude Protein, %	20.83	20
		Salt (Sodium X 2.54), %	8.77	8-9
		Sodium, %	3.45	3.2-4.5
		Vitamin A, IU/lb	25000	20000
	12% Calf Creep Pellets		98F-08348	
		Crude Fiber, %	10.46	15
		Crude Protein, %	12.47	12
	37% Range Block		98F-09564	
		Calcium, %	4.08	4-5
		Equiv Crude Protein, %	19.12	18.5
		Crude Protein, %	38.09	37
		Salt (Sodium X 2.54), %	12.80	12-13
		Sodium, %	5.04	4.8-6.3
		Vitamin A, IU/lb	33000	30000
	Dyna Gro Chunky Style With Beef for Dogs		98F-09566	
		Crude Fat, %	7.39	5
		Oven Moisture, %	76.10	78
		Crude Protein, %	11.10	9
Dakota Mill & Grain				
Belle Fourche, SD				
	Sweet Chop Feed		98F-00830	
		Crude Protein, %	9.84	9
Dakota Mill & Grain				
Philip, SD				
	Custom Mix		98F-01547	
		Lasalocid, g/ton	91.400	87
Darby Creek Ag/Shur-Tone Feeds				
Milford Center, OH				
	16% Poultry Layer Crumbles		98F-02122	
		Calcium, %	4.58	3.5-4.5
		Lysine - Total, %	0.728	0.8
		Methionine - Total, %	0.314	0.35
		Crude Protein, %	15.51	16

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Darling's Nutrition Company					
Lincoln, NE					
	** ByPass Roughage Darling's Plus		98F-01884		
		Calcium, %	4.83	6-7	DEFICIENT
		Equiv Crude Protein, %	10.91	11	
		Iodine, %	0.003	0.003	
		Phosphorus, %	4.020	4	
		Crude Protein, %	28.27	25	
		Salt (ChlorideX1.65), %	21.48	24-26	DEFICIENT
		Salt (Sodium X 2.54), %	21.40	24-26	DEFICIENT
		Vitamin A, IU/lb	102000	110000	
Diamond Pet Foods					
Meta, MO					
	Diamond Beef Formula for Dogs		98F-01422		
		Crude Fat, %	9.33	5	
		Oven Moisture, %	75.74	78	
		Crude Protein, %	9.97	10	
	Diamont Dog Food		98F-01979		
		Fat: Acid Hydrolysis, %	16.68	18	
		Crude Protein, %	27.94	26	
	Diamond Dog Food Maintenance		98F-06262		
		Fat: Acid Hydrolysis, %	11.04	12	
		Oven Moisture, %	7.54	10	
		Crude Protein, %	20.79	21	
DuCoa					
Wilmar, MN					
	Aureomycin 50		98F-03445		
		Chlortetracycline, g/lb	54.800	50	
Essential Vitality Inc					
Rapid City, SD					
	Equiphase for All Horses		98F-08669		
		Crude Fiber, %	15.88	25	
		Crude Protein, %	14.11	14	
Estelline Coop Grain					
Estelline, SD					
	** Custom Mix		98F-06269		
		Chlortetracycline, g/ton	35.267	60	DEFICIENT
Evsco Pharmaceuticals					
Buena, NJ					
	Nutri-Cal		98F-07877		
		Fat: Roese Gottlieb, %	35.06	34.5	
		Linoleic Acid 18.2, mg/6 grams	938.0000	990	
		Linolenic 20.2, mg/6 grams	158.0000	138	
		Oven Moisture, %	13.66	14	
		Vitamin A, IU/6 grams	1080	1045	
Farmers Coop Company					
Brookings, SD					
	Custom Mix Pork System Finisher II C-40 Medicated		98F-00511		
		Crude Protein, %	16.61	16.5	
		Tylosin, g/ton	45.800	40	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Farmland Industries Inc Brandon, SD					
	** Lamb Grower-Finisher Complete B-25-Medicated		98F-01562		
		Crude Fiber, %	11.15	12	
		Lasalocid, g/ton	15.200	25	DEFICIENT
		Crude Protein, %	15.59	15	
	Ring Dried Blood Meal		98F-06270		
		Crude Protein, %	91.96	85	
Farmland Industries Inc Huron, SD					
	Stock Block 37		98F-01557		
		Calcium, %	2.95	2.25-2.75	
		Equiv Crude Protein, %	14.64	16	
		Crude Protein, %	36.45	37	
		Salt (Sodium X 2.54), %	15.03	13-15	
		Vitamin A, IU/lb	34000	40000	
	** Coop Pro-Phos 12 Mineral		98F-01848		
		Calcium, %	12.85	11-13.5	
		Phosphorus, %	11.120	12	
		Salt (Sodium X 2.54), %	12.71	11-13	
		Selenium, ug/g (ppm)	21.850	22	
		Vitamin A, IU/lb	117000	190000	DEFICIENT
Farmland Industries Inc Kansas City, MO					
	Coop 44% Solvent Extracted Soybean Meal		98F-00946		
		Crude Protein, %	44.24	44	
	44% Soybean Meal/Solvent ext.		98F-01544		
		Crude Protein, %	44.71	44	
	** Envirolean Swine Concentrate		98F-01916		
		Calcium, %	3.52	2.5-3.5	
		Crude Protein, %	38.63	40	DEFICIENT
		Salt (Sodium X 2.54), %	1.93	1.6-2.1	
	Right Brand Cat Food		98F-02682		
		Fat: Acid Hydrolysis, %	11.11	12	
		Oven Moisture, %	10.54	12	
		Crude Protein, %	34.83	32	
		Taurine - Free, %	0.158	0.1	
	Coop Rabbit Grower Feed		98F-02684		
		Crude Fiber, %	13.01	14-18	
		Crude Protein, %	16.50	16	
	Farmland Triangle Mineral ProPhos 16		98F-08828		
		Calcium, %	14.16	13.5-16	
		Iodine, ppm	86.0	88	
		Phosphorus, %	14.900	16	
		Salt (Sodium X 2.54), %	7.51	7.5-9	
		Selenium, ug/g (ppm)	25.400	22	
		Vitamin A, IU/lb	173000	190000	
	Beef Crumbles AS-700 2+2		98F-08829		
		Calcium, %	4.84	4-5	
		Crude Fiber, %	19.24	29	
		Chlortetracycline, g/lb	1.88	2	
		Crude Protein, %	14.04	10	
		Sulfamethazine, g/lb	1.97	2	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Feedlot Suspension - 40		98F-08830		
		Crude Protein, %	40.64	40	
		Salt (ChlorideX1.65), %	4.86	4.5-5.5	
		Salt (Sodium X 2.54), %	6.88	4.5-5.5	EXCESSIVE
		Vitamin A, IU/lb	38000	36000	
Federal Beef Processors					
Rapid City, SD					
	** Meat and Bone Meal		98F-03706		
		Calcium, %	10.28	12-14.4	DEFICIENT
		Crude Fat, %	7.89	6	
		Phosphorus, %	4.750	5	
		Crude Protein, %	51.47	46	
Friskies Pet Care Products					
Glendale, CA					
	Friskies Fancy Feast		98F-03427		
		Ash, %	2.88	3.5	
		Oven Moisture, %	73.02	78	
		Crude Protein, %	14.62	12	
		Taurine - Free, %	0.106	0.05	
Golden Acres					
Esterville, IA					
	Golden Acres Premium Game Bird Formula Start'N Gro Medi		98F-03912		
		Amprolium, %	0.0165	0.0175	
		Crude Fat, %	6.65	6	
		Lysine - Total, %	1.820	1.65	
		Methionine - Total, %	0.507	0.55	
		Crude Protein, %	31.18	30	
Golden Sun Feeds Inc					
Esterville, IA					
	Golden Lean Concentrate HL		98F-03914		
		Calcium, %	3.35	3.3-4	
		Lysine - Total, %	3.120	3	
		Crude Protein, %	40.07	40	
		Salt (Sodium X 2.54), %	2.42	2.5-3.3	
	Golden Dairy - Supplement for Lactating & Non - Lactating		98F-04150		
		Acid Detergent Fiber, %	6.49	9	
		Calcium, %	2.10	2-2.5	
		Phosphorus, %	2.060	2	
		Crude Protein, %	39.87	40	
		Salt (Sodium X 2.54), %	1.49	1.5-2	
		Vitamin A, IU/lb	50000	30000	
	Golden Pig Concentrate		98F-04151		
		Calcium, %	2.22	2-2.5	
		Crude Fat, %	6.35	6	
		Lysine - Total, %	3.130	3	
		Crude Protein, %	35.59	34	
	Golden Sun Feeds Hi-Plains Mineral		98F-04152		
		Calcium, %	13.77	11-13	
		Iodine, ppm	65.0	60	
		Phosphorus, %	8.930	9	
		Selenium, ug/g (ppm)	22.800	22.2	
		Vitamin A, IU/lb	404000	400000	
	Texturized Horse Feed		98F-04859		
		Crude Protein, %	11.74	12	

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Manufacturer Location	Product	Analyte	Found	Claim	
	** Ruminant Free Choice Mineral Medicated		98F-04861		
		Calcium, %	14.15	13.5-15.5	
		Lasalocid, g/ton	1270.000	1440	
		Phosphorus, %	6.604	6.5	
		Crude Protein, %	6.06	6	
		Salt (Sodium X 2.54), %	19.48	19-21	
		Vitamin A, IU/lb	51000	130000	DEFICIENT
	** Golden Lean Concentrate HL		98F-07889		
		Calcium, %	3.79	3.3-4	
		Lysine - Total, %	3.150	3	
		Crude Protein, %	42.27	40	
		Salt (ChlorideX1.65), %	2.00	2.5-3.3	DEFICIENT
		Salt (Sodium X 2.54), %	1.99	2.5-3.3	DEFICIENT
	Golden Dairy		98F-07890		
		Acid Detergent Fiber, %	6.23	9	
		Calcium, %	1.99	2-2.5	
		Phosphorus, %	1.860	2	
		Crude Protein, %	41.29	40	
		Salt (Sodium X 2.54), %	1.75	1.5-2	
		Vitamin A, IU/lb	27000	30000	
	** Lean Choice 40/15 450 Bov		98F-08831		
		Calcium, %	5.94	7-8	DEFICIENT
		Equiv Crude Protein, %	14.56	15	
		Lasalocid, g/ton	446.000	450	
		Potassium, %	3.400	3.5	
		Crude Protein, %	42.51	40	
		Salt (Sodium X 2.54), %	2.32	2.5-3	
		Vitamin A, IU/lb	40000	40000	
	Calf Max 13 90 Bov		98F-08832		
		Crude Fiber, %	20.85	22	
		Lasalocid, g/ton	85.500	90	
		Crude Protein, %	12.89	13	
		Salt (Sodium X 2.54), %	2.01	1.5-2	
	** Golden Lass		98F-08901		
		Crude Fiber, %	28.45	24	EXCESSIVE
		Total Sugars, %	35.45	38	
	** Hi Plains Breeder Mineral Block		98F-08902		
		Calcium, %	14.16	11-13	
		Phosphorus, %	8.640	9	
		Salt (Sodium X 2.54), %	19.30	20-22	
		Selenium, ug/g (ppm)	30.750	30	
		Vitamin A, IU/lb	126000	400000	DEFICIENT
	** 32 Golden Beef PR		98F-08903		
		Crude Protein, %	31.98	32	
		Salt (ChlorideX1.65), %	7.08	4.5-5.5	EXCESSIVE
		Salt (Sodium X 2.54), %	8.81	4.5-5.5	EXCESSIVE
		Vitamin A, IU/lb	45000	36000	
	Beef N Bulk 30 250R		98F-09558		
		Calcium, %	5.32	4-5	
		Crude Fiber, %	11.82	12	
		Monensin, g/ton	229.50	250	
		Crude Protein, %	29.47	30	
		Salt (ChlorideX1.65), %	2.04	1.5-2	
		Salt (Sodium X 2.54), %	2.35	1.5-2	EXCESSIVE
		Vitamin A, IU/lb	25000	20000	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	28% Range Block 250 Bov		98F-09561		
		Calcium, %	1.92	2-2.5	
		Crude Fiber, %	3.89	10	
		Lasalocid, g/ton	199.000	250	
		Crude Protein, %	31.45	28	
		Salt (Sodium X 2.54), %	20.20	18.5-20.5	
		Vitamin A, IU/lb	126000	100000	
Golden Sun Feeds Inc					
Sioux Falls, SD					
	Golden Aide "CTC" 10G-Medicated		98F-00509		
		Chlortetracycline, g/lb	11.000	10	
	Beef'N Bulk 30 250R Medicated		98F-00887		
		Calcium, %	5.21	4-5	
		Crude Fiber, %	12.71	12	
		Monensin, g/ton	278.00	250	
		Crude Protein, %	31.21	30	
		Salt (Sodium X 2.54), %	2.12	1.5-2	
		Vitamin A, IU/lb	20000	20000	
	Beef Builder-40 500 BOV Medicated		98F-01443		
		Calcium, %	6.49	6.5-7.5	
		Crude Fiber, %	10.75	10	
		Equiv Crude Protein, %	15.80	15	
		Lasalocid, g/ton	525.500	500	
		Crude Protein, %	41.10	40	
		Vitamin A, IU/lb	55000	45000	
	Beef Builder-40 400R Medicated		98F-01444		
		Calcium, %	6.99	6.5-7.5	
		Equiv Crude Protein, %	15.81	15	
		Monensin, g/ton	380.00	400	
		Crude Protein, %	41.40	40	
		Vitamin A, IU/lb	60000	45000	
	** Med-A-Mix CTC-4G		98F-02568		
		Calcium, %	3.99	3-4	
		Chlortetracycline, g/lb	4.250	4	
		Lysine - Total, %	2.440	2.5	
		Crude Protein, %	41.24	40	
		Salt (ChlorideX1.65), %	1.68	2.5-3	DEFICIENT
		Salt (Sodium X 2.54), %	1.97	2.5-3	DEFICIENT
	** Dairy Fresh - DCAB		98F-05538		
		Acid Detergent Fiber, %	6.95	7	
		Crude Fiber, %	4.75	10	
		Equiv Crude Protein, %	17.08	15	EXCESSIVE
		Crude Protein, %	31.17	28	
	41% Beef Finisher 600 Bov Medicated		98F-06268		
		Calcium, %	7.31	7-8	
		Crude Fiber, %	8.47	10	
		Equiv Crude Protein, %	29.78	29	
		Lasalocid, g/ton	595.000	600	
		Crude Protein, %	42.36	41	
		Salt (Sodium X 2.54), %	1.81	1.5-2	
		Vitamin A, IU/lb	34000	40000	
	Lamb N Bulk 100 Bov Medicated		98F-06950		
		Equiv Crude Protein, %	2.69	2.5	
		Lasalocid, g/ton	97.100	100	
		Crude Protein, %	28.06	28	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	** Golden Sun Feeds Hi-Plains Mineral		98F-06951		
		Calcium, %	13.43	11-13	
		Iodine, ppm	62.0	60	
		Phosphorus, %	8.770	9	
		Selenium, ug/g (ppm)	20.500	22.2	
		Vitamin A, IU/lb	178500	400000	DEFICIENT
Grand Laboratories Inc. Freeman, SD					
	** Porcine Maximizer, Energy and Nutritional Supplement		98F-00266		
		Crude Fat, %	98.85	99.5	
		Vitamin A, IU/lb	140000	350000	DEFICIENT
Gutwein and Co Francesville, IN					
	** Morning Song Goldfinch Treat Wild Bird Food		98F-06734		
		Crude Fiber, %	7.36	12	
		Fat: Acid Hydrolysis, %	11.64	18	DEFICIENT
		Crude Protein, %	13.95	14	
Hartz Mountain Corp Secaucus, NJ					
	** Hartz Guinea Pig Pellets		98F-00655		
		Crude Fiber, %	10.82	12	
		Oven Moisture, %	11.24	12	
		Crude Protein, %	19.59	24	DEFICIENT
	Hartz Guinea Pig Pellets		98F-01560		
		Crude Fiber, %	10.70	15	
		Oven Moisture, %	8.60	12	
		Crude Protein, %	20.80	18	
	Hartz Guinea Pig Diet		98F-01999		
		Crude Fiber, %	10.03	15	
		Oven Moisture, %	12.74	12	
		Crude Protein, %	19.66	18	
Harvest States Coop Milbank, SD					
	Blood Meal		98F-05537		
		Crude Protein, %	85.68	85	
Harvest States / GTA Feeds Dickinson, ND					
	Calf Creep B60 Medicated		98F-01881		
		Crude Fiber, %	13.36	19	
		Lasalocid, g/ton	60.000	60	
		Crude Protein, %	13.98	14	
	Ranger 20 Cake		98F-01882		
		Crude Fiber, %	7.33	12	
		Non-Protein Nitrogen, %	5.15	6	
		Crude Protein, %	20.31	20	
		Salt (Sodium X 2.54), %	2.04	1.5-2	
		Vitamin A, IU/lb	19000	20000	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Harvest States / GTA Feeds					
Edgeley, ND					
	** Britton 15-15 Mineral Plus		98F-05898		
		Calcium, %	12.35	14-16	DEFICIENT
		Magnesium, %	2.24	2.5	
		Phosphorus, %	14.390	15	
		Salt (ChlorideX1.65), %	5.18	3-4	EXCESSIVE
		Salt (Sodium X 2.54), %	5.47	3-4	EXCESSIVE
		Selenium, ug/g (ppm)	27.200	35	
		Vitamin A, IU/lb	190000	150000	
	** 38N/BP Dairy Supplement		98F-06500		
		Acid Detergent Fiber, %	9.92	8	EXCESSIVE
		Calcium, %	2.65	2.5-3	
		Crude Protein, %	37.15	38	
		Salt (Sodium X 2.54), %	2.27	2-2.5	
		Vitamin A, IU/lb	25000	30000	
	Triple 12 Cattle Mineral Plus		98F-06501		
		Calcium, %	13.42	12-14	
		Magnesium, %	2.93	2.75	
		Phosphorus, %	11.370	12	
		Salt (Sodium X 2.54), %	14.06	12-14	
		Selenium, ug/g (ppm)	39.000	35	
		Vitamin A, IU/lb	183000	150000	
Harvest States / GTA Feeds					
Gettysburg, SD					
	** Ranger 20N Block Hi-Mag Blox		98F-00437		
		Crude Protein, %	20.78	20	DEFICIENT
		Salt (ChlorideX1.65), %	5.99	11-13	DEFICIENT
		Salt (Sodium X 2.54), %	8.16	11-13	DEFICIENT
		Vitamin A, IU/lb	18000	20000	
	Lamb Creep B 90 Medicated		98F-04162		
		Crude Fiber, %	14.97	18	
		Lasalocid, g/ton	85.100	90	
		Crude Protein, %	18.79	18	
	Calf Creep B60 Medicated		98F-04163		
		Crude Fiber, %	17.07	19	
		Lasalocid, g/ton	55.700	60	
		Crude Protein, %	14.32	14	
	Ranger 20N		98F-04164		
		Crude Fiber, %	11.32	12	
		Crude Protein, %	20.05	20	
		Salt (Sodium X 2.54), %	1.47	1.5-2	
		Vitamin A, IU/lb	34000	20000	
	Custom Stocker Gainer		98F-08825		
		Crude Fiber, %	9.17	14	
		Monensin, g/ton	49.45	50	
		Crude Protein, %	13.16	12	
		Salt (Sodium X 2.54), %	15.19	15-17	
	Ranger 20N Blox		98F-08827		
		Crude Protein, %	23.03	20	
		Salt (Sodium X 2.54), %	10.49	11-13	
		Vitamin A, IU/lb	33000	20000	
Harvest States / GTA Feeds					
Sioux Falls, SD					
	Head Start OTC 200 Medicated		98F-00052		
		Crude Fiber, %	18.72	22	
		Oxytetracycline, g/ton	172.000	200	
		Crude Protein, %	12.93	12	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
	Krumbles ADE S-700 Medicated		98F-00891	
		Chlortetracycline, g/lb	1.790	2
		Sulfamethazine, %	0.49200	0.44
		Vitamin A, IU/lb	292000	250000
	Koxy Crumbles Medicated		98F-00892	
		Amprolium, %	1.1200	1.25
	Swine Supplement		98F-00893	
		Calcium, %	4.41	3.5-4.5
		Phosphorus, %	2.160	2
		Crude Protein, %	40.10	40
		Salt (Sodium X 2.54), %	2.31	2-2.5
	Beef Grow		98F-00894	
		Calcium, %	4.42	4-5
		Crude Protein, %	40.49	38
		Salt (Sodium X 2.54), %	2.42	2.5-3.5
		Vitamin A, IU/lb	46000	30000
	5-15 Mineral GTA		98F-00903	
		Calcium, %	5.31	5-6
		Iodine, %	43.900	40
		Magnesium, %	2.30	2.5
		Phosphorus, %	13.790	15
		Salt (Sodium X 2.54), %	3.80	3-4
	Six in One (GTA)		98F-00904	
		Calcium, %	4.41	3.5-4.5
		Lysine - Total, %	2.500	2.75
		Crude Protein, %	39.18	38
		Salt (Sodium X 2.54), %	2.18	2-2.5
	Beef Booster		98F-00969	
		Calcium, %	4.25	4-5
		Crude Protein, %	38.13	38
		Salt (Sodium X 2.54), %	1.79	1.5-2.5
		Vitamin A, IU/lb	39000	30000
	Feedlot SLP33 R600 Medicated		98F-01432	
		Calcium, %	6.03	5-6
		Equiv Crude Protein, %	29.04	32
		Oven Moisture, %	42.58	39
		Monensin, g/ton	575.00	600
		Potassium, %	1.880	2
		Crude Protein, %	34.18	33
		Salt (ChlorideX1.65), %	4.06	4.5-5.5
		Vitamin A, IU/lb	42000	30000
	Rum-Liq 22		98F-01538	
		Equiv Crude Protein, %	18.94	18
		Vacuum Moisture, %	39.16	36
		Crude Protein, %	25.35	22
		Vitamin A, IU/lb	46000	30000
	Kumble Ade S-700		98F-01540	
		Chlortetracycline, g/lb	1.80	2
		Sulfamethazine, %	0.46100	0.44
		Vitamin A, IU/lb	234000	250000
	44 % Soybean Meal-Solvent Extr.		98F-01541	
		Crude Protein, %	44.65	44
	Triple 12 Cattle Mineral		98F-01768	
		Calcium, %	12.59	12-14
		Phosphorus, %	12.110	12
		Salt (Sodium X 2.54), %	12.21	12-14
		Vitamin A, IU/lb	361000	150000

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Calf Creep		98F-01773		
		Crude Fiber, %	13.51	19	
		Crude Protein, %	14.88	14	
	Beef Grow B1000 Med		98F-01883		
		Calcium, %	3.86	4-5	
		Lasalocid, g/ton	995.000	1000	
		Non-Protein Nitrogen, %	12.17	12.9	
		Crude Protein, %	39.17	38	
		Salt (Sodium X 2.54), %	2.45	2.5-3.5	
		Vitamin A, IU/lb	71000	60000	
	** Rum-Liq 26-14		98F-01949		
		Equiv Crude Protein, %	16.78	14	EXCESSIVE
		Fat: Roese Gottlieb, %	3.83	3	
		Vacuum Moisture, %	40.46	38	
		Potassium, %	2.470	3	DEFICIENT
		Crude Protein, %	27.92	26	
		Salt (ChlorideX1.65), %	3.04	1.75-2.25	EXCESSIVE
		Salt (Sodium X 2.54), %	5.26	1.75-2.25	EXCESSIVE
		Vitamin A, IU/lb	23000	30000	
	** GTA Rum-Liq 33		98F-01950		
		Equiv Crude Protein, %	27.04	30	
		Vacuum Moisture, %	39.89	36	
		Potassium, %	2.255	3	DEFICIENT
		Crude Protein, %	32.89	33	
		Vitamin A, IU/lb	42000	45000	
	** Triple 12 Cattle Mineral Plus		98F-01951		
		Calcium, %	12.49	12-14	
		Iodine, ppm	75.000	100	
		Magnesium, %	3.06	2.75	
		Phosphorus, %	11.590	12	
		Salt (Sodium X 2.54), %	13.20	12-14	
		Selenium, ug/g (ppm)	42.200	35	
		Vitamin A, IU/lb	62000	150000	DEFICIENT
	** Rum-Liq 22		98F-02188		
		Equiv Crude Protein, %	16.40	18	
		Oven Moisture, %	37.59	36	
		Potassium, %	2.675	4	DEFICIENT
		Crude Protein, %	22.64	22	
		Vitamin A, IU/lb	48000	30000	
	** Start 1200 ASP Pig Starter Feed		98F-02189		
		Chlortetracycline, g/ton	53.133	100	DEFICIENT
		Crude Protein, %	19.21	18	
		Sulfamethazine, %	0.00609	0.011	DEFICIENT
	Triple 12 Cattle Mineral		98F-02190		
		Calcium, %	13.07	12-14	
		Phosphorus, %	11.230	12	
		Salt (Sodium X 2.54), %	13.89	12-14	
		Vitamin A, IU/lb	149000	150000	
	44% Soybean Meal Extracted		98F-02191		
		Ash, %	5.70	8	
		Crude Protein, %	44.82	44	
	ChickGro-A Medicated		98F-02192		
		Amprolium, %	0.0037	0.004	
		Crude Protein, %	16.33	16	
	Equis Sweet Grains		98F-02193		
		Crude Protein, %	9.34	9.5	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Rum-Liq 16N		98F-02330		
		Vacuum Moisture, %	37.56	38	
		Potassium, %	3.040	3	
		Crude Protein, %	16.17	16	
		Vitamin A, IU/lb	21000	20000	
	Beef Marketer R400 Medicated		98F-02623		
		Calcium, %	7.31	7-8	
		Equiv Crude Protein, %	17.48	18.9	
		Monensin, g/ton	375.50	400	
		Potassium, %	3.030	3	
		Crude Protein, %	37.78	38	
		Salt (Sodium X 2.54), %	3.14	3-4	
		Vitamin A, IU/lb	31000	30000	
	Krumble-ADE DP Medicated		98F-02802		
		Chlortetracycline, g/lb	3.975	4	
		Vitamin A, IU/lb	207000	200000	
	Mix - Liq.		98F-02971		
		Fat: Roese Gottlieb, %	6.05	5	
		Vacuum Moisture, %	38.66	38	
		Salt (ChlorideX1.65), %	1.82	2-2.5	
		Salt (Sodium X 2.54), %	4.24	2-2.5	EXCESSIVE
	** Beef Grow		98F-02972		
		Calcium, %	4.61	4-5	
		Equiv Crude Protein, %	9.89	12.9	
		Crude Protein, %	35.88	38	DEFICIENT
		Salt (Sodium X 2.54), %	2.94	2.5-3.5	
		Vitamin A, IU/lb	29000	30000	
	Calf Creep		98F-02973		
		Crude Fiber, %	15.81	19	
		Crude Protein, %	14.13	14	
	Tender Lamb Finisher B300 Medicated		98F-03692		
		Calcium, %	6.37	6-7	
		Lasalocid, g/ton	267.000	300	
		Crude Protein, %	34.54	34	
		Salt (Sodium X 2.54), %	2.02	2-2.5	
		Vitamin A, IU/lb	54000	40000	
	Beef Booster		98F-03694		
		Calcium, %	4.40	4-5	
		Crude Protein, %	39.42	38	
		Salt (Sodium X 2.54), %	1.92	1.75-2.25	
		Vitamin A, IU/lb	30000	30000	
	Head Start OTC 200 Medicated		98F-03695		
		Crude Fiber, %	20.84	22	
		Oxytetracycline, g/ton	162.000	200	
		Crude Protein, %	12.13	12	
	15-10 Cattle Mineral		98F-03696		
		Calcium, %	15.00	14-16	
		Magnesium, %	2.54	2.5	
		Phosphorus, %	9.480	10	
		Salt (Sodium X 2.54), %	4.28	3-4	
	Howard Fat Mix		98F-03909		
		Acid Detergent Fiber, %	26.78	30	
		Crude Fiber, %	20.54	22	
		Crude Fat, %	34.07	34.9	
		Crude Protein, %	9.65	6.9	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
*** Feedlot Finisher R350T MGA 0.4 Medicated			98F-03910		
		Acid Detergent Fiber, %	9.88	8	EXCESSIVE
		Calcium, %	7.28	6-7	
		Crude Fiber, %	7.26	12	
		Equiv Crude Protein, %	15.93	16	
		Monensin, g/ton	328.00	350	
		Potassium, %	1.975	3.25	DEFICIENT
		Crude Protein, %	39.61	38	
		Salt (Sodium X 2.54), %	3.41	3-4	
		Tylosin, g/ton	164.000	180	
		Vitamin A, IU/lb	34000	30000	
HSC Rum - Liq 33			98F-04137		
		Equiv Crude Protein, %	24.11	30	
		Karl Fisher Moisture, %	39.20	36	
		Potassium, %	2.230	2.25	
		Crude Protein, %	32.60	33	
Vitamin A, IU/lb	33000	45000			
Krumble - Ade DP			98F-04161		
		Chlortetracycline, g/lb	3.80	4	
Vitamin A, IU/lb	253000	200000			
Calf Creep			98F-05031		
		Crude Fiber, %	12.26	19	
Crude Protein, %	14.66	14			
*** Hi-Lean Vital - Ad			98F-05146		
		Calcium, %	20.69	21-24	
		Iodine, ppm	15.0	14	
		Lysine - Total, %	3.590	4	
		Phosphorus, %	7.470	7.5	
		Salt (Sodium X 2.54), %	11.79	12-13.5	
		Selenium, ug/g (ppm)	5.843	8	DEFICIENT
Vitamin A, IU/lb	76000	60000			
Krumble ADE-DP Medicated			98F-05534		
		Chlortetracycline, g/lb	3.29	4	
Vitamin A, IU/lb	179000	200000			
*** Western Dakota Custom Mineral			98F-06111		
		Calcium, %	18.18	14-16	EXCESSIVE
		Iodine, ppm	67.0	100	
		Magnesium, %	2.22	2	
		Phosphorus, %	9.360	10	
		Salt (Sodium X 2.54), %	4.21	3-4	
		Vitamin A, IU/lb	135000	125000	
*** Rum - Liq 33			98F-06112		
		Equiv Crude Protein, %	26.28	30	
		Vacuum Moisture, %	34.92	36	
		Potassium, %	2.290	3	DEFICIENT
		Crude Protein, %	34.75	33	
Vitamin A, IU/lb	50000	45000			
Hi Mag Mineral			98F-06266		
		Calcium, %	10.71	10-11	
		Magnesium, %	13.08	13	
		Phosphorus, %	6.300	6	
		Salt (Sodium X 2.54), %	13.35	12-14	
		Selenium, ug/g (ppm)	15.600	17	
Vitamin A, IU/lb	120000	75000			
Krumble - ADE DP Medicated			98F-06267		
		Chlortetracycline, g/lb	3.09	4	
Vitamin A, IU/lb	166000	200000			

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Beef Booster		98F-06340		
		Calcium, %	4.31	4-5	
		Crude Protein, %	40.14	38	
		Salt (Sodium X 2.54), %	1.64	1.75-2.25	
		Vitamin A, IU/lb	24000	30000	
	Rabbit Crunchies		98F-06341		
		Crude Fiber, %	16.72	19-22	
		Crude Protein, %	16.02	15	
	Calf Creep B-60 Med Lasalocid		98F-06342		
		Crude Fiber, %	15.29	19	
		Lasalocid, g/ton	46.400	60	
		Crude Protein, %	15.65	14	
	*** Start 1400 ASP Medicated		98F-06343		
		Chlortetracycline, g/ton	79.400	100	
		Fat: Acid Hydrolysis, %	4.54	5	
		Crude Protein, %	17.36	20	DEFICIENT
		Sulfamethazine, g/ton	80.50000	100	
	Nursery 2600 Supplement		98F-06344		
		Calcium, %	1.96	1.5-2	
		Crude Fat, %	6.98	5	
		Lysine - Total, %	2.480	2.6	
		Crude Protein, %	33.51	32	
	Liquid molasses		98F-06347		
		Fat: Roese Gottlieb, %	4.93	5	
		Vacuum Moisture, %	37.39	38	
		Salt (ChlorideX1.65), %	2.41	2-2.5	
		Salt (Sodium X 2.54), %	4.38	2-2.5	EXCESSIVE
	Beef Booster		98F-08200		
		Calcium, %	4.13	4	
		Crude Protein, %	39.90	38	
		Salt (Sodium X 2.54), %	1.71	1.75-2.25	
		Vitamin A, IU/lb	32000	30000	
	Poultry concentrate - 38		98F-08201		
		Calcium, %	5.00	4.75-5.25	
		Crude Protein, %	39.94	38	
		Salt (Sodium X 2.54), %	1.83	1.5-2	
	Calf Creep		98F-08824		
		Crude Fiber, %	8.57	19	
		Lasalocid, g/ton	68.250	60	
		Crude Protein, %	17.25	14	
	Krumble ADE DP		98F-08826		
		Chlortetracycline, g/lb	4.34	4	
		Vitamin A, IU/lb	189000	200000	
	Hi Mag Mineral		98F-08898		
		Calcium, %	11.03	10-11	
		Magnesium, %	13.22	13	
		Phosphorus, %	5.690	6	
		Salt (Sodium X 2.54), %	14.65	12-14	
		Selenium, ug/g (ppm)	19.750	17	
		Vitamin A, IU/lb	58000	75000	
	*** Ruf-N-Pro R150 Medicated		98F-08899		
		Calcium, %	4.42	3-4	
		Crude Fiber, %	20.22	25	
		Equiv Crude Protein, %	3.84	10	
		Monensin, g/ton	135.00	150	
		Crude Protein, %	21.07	22	DEFICIENT
		Salt (Sodium X 2.54), %	1.76	1.5-2	

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Krumble Ade S700 Medicated		98F-08960		
		Chlortetracycline, g/lb	2.20	2	
		Sulfamethazine, %	0.42000	0.44	
		Vitamin A, IU/lb	303000	250000	
Harvest States / GTA Feeds					
Willmar, MN					
	Krumble Ade DP-Medicated		98F-01946		
		Chlortetracycline, g/lb	3.695	4	
		Vitamin A, IU/lb	201000	200000	
	Nursery 2600 Supplement		98F-06948		
		Lysine - Total, %	2.350	2.6	
		Crude Protein, %	32.08	32	
	Dairy 38 Dairy Lactation Supplement		98F-06949		
		Acid Detergent Fiber, %	9.79	10	
		Crude Protein, %	37.57	38	
		Salt (Sodium X 2.54), %	2.19	2-2.5	
		Vitamin A, IU/lb	23000	25000	
Hayti Farmers Elevator					
Hayti, SD					
	Custom Buffalo Feed		98F-01579		
		Lasalocid, g/ton	33.000	27	
Heartland Inc					
Bismarck, ND					
	37% Sheep Supplement B 175 Custom Mix		98F-04444		
		Calcium, %	3.29	2.3-3.3	
		Equiv Crude Protein, %	3.06	3.4	
		Lasalocid, g/ton	150.000	175	
		Crude Protein, %	36.72	37	
	** Custom Mix Commercial Feedlot 40-16 R800		98F-04445		
		Calcium, %	5.59	5.5-6.5	
		Crude Fiber, %	13.92	14	
		Equiv Crude Protein, %	14.21	10	EXCESSIVE
		Monensin, g/ton	667.00	800	
		Crude Protein, %	38.21	40	DEFICIENT
		Salt (Sodium X 2.54), %	3.00	2.8-3.8	
		Vitamin A, IU/lb	32000	40000	
	Commercial Feedlot 40-16 B1000		98F-06119		
		Calcium, %	4.94	5.5-6.5	
		Crude Fiber, %	14.26	14	
		Equiv Crude Protein, %	15.79	16	
		Lasalocid, g/ton	930.500	1000	
		Crude Protein, %	40.42	40	
		Salt (Sodium X 2.54), %	2.85	2.8-3.8	
		Vitamin A, IU/lb	28000	40000	
Heinz Pet Products					
Newport, KY					
	Kozy Kitten Cat Food Fish Dinner		98F-01433		
		Oven Moisture, %	74.46	78	
		Crude Protein, %	12.61	10	
	9 Lives Plus with Rice (Chicken, Lamb, and Rice Dinner)		98F-06255		
		Ash, %	3.26	4	
		Crude Fat, %	7.87	5.5	
		Oven Moisture, %	76.04	78	
		Crude Protein, %	8.72	9	
		Taurine - Free, %	0.062	0.05	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	9-Lives Salmon Nips		98F-09614		
		Crude Fat, %	8.52	7	
		Oven Moisture, %	33.34	35	
		Crude Protein, %	21.20	20	
Hi-Plains Nutrition Service					
Whitewood, SD					
	# 2230 Hi-Plains Pasture Mineral Ex		98F-09609		
		Calcium, %	7.39	7-8	
		Iodine, %	0.005	0.0064	
		Phosphorus, %	16.400	18	DEFICIENT
		Vitamin A, IU/lb	790000	640000	
	# 2550 Hi-Plains 1X1 Dairy Mineral		98F-09610		
		Calcium, %	15.02	17-18	DEFICIENT
		Iodine, %	0.005	0.0068	
		Phosphorus, %	15.860	17	
	1200 Hi-Plains C-H-S Pellets		98F-09611		
		Calcium, %	3.40	3-4	
		Crude Protein, %	27.94	28	
		Salt (Sodium X 2.54), %	1.90	2-2.5	
		Vitamin A, IU/lb	86000	80000	
Hikari Sales USA, Inc.					
Hayward, CA					
	Hikari Cichlid Gold Mini Pellets		98F-08671		
		Ash, %	10.60	12	
		Oven Moisture, %	7.77	9	
		Crude Protein, %	44.90	40	
Hill's Pet Nutrition					
Topeka, KS					
	Science Diet Canine Maintenance-Chicken Formula		98F-01582		
		Oven Moisture, %	75.78	78	
		Crude Protein, %	5.92	5.5	
	Feline C/D		98F-05022		
		Ash, %	1.31	1.9	
		Crude Fat, %	8.93	7	
		Oven Moisture, %	71.62	72.5	
		Crude Protein, %	12.01	11.5	
		Taurine - Free, %	0.093	0.06	
	Canine H/D		98F-05023		
		Crude Fat, %	7.51	5.5	
		Oven Moisture, %	72.15	74	
		Taurine - Free, %	0.056	0.05	
	Hill's Science Diet Canine Maintenance		98F-06263		
		Fat: Acid Hydrolysis, %	13.38	13	
		Oven Moisture, %	8.32	10	
		Crude Protein, %	22.55	21.5	
	Science Diet Feline Maintenance Cat Food		98F-06735		
		Ash, %	4.25	5	
		Fat: Acid Hydrolysis, %	19.77	20	
		Oven Moisture, %	8.38	10	
		Crude Protein, %	31.66	30	
		Taurine - Free, %	0.149	0.1	

= Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Science Diet Feline Growth Cat Food		98F-06736		
		Ash, %	5.82	6.5	
		Fat: Acid Hydrolysis, %	23.45	23	
		Oven Moisture, %	7.10	10	
		Crude Protein, %	35.64	33	
		Taurine - Free, %	0.225	0.1	
	Hill's Science Diet Canine Growth		98F-06996		
		Fat: Acid Hydrolysis, %	9.52	9	
		Oven Moisture, %	7.48	10	
		Crude Protein, %	23.52	22	
	Feline d/d		98F-07878		
		Ash, %	1.16	1.7	
		Crude Fat, %	8.64	6	
		Oven Moisture, %	68.93	74	
		Crude Protein, %	11.88	10	
Hollis Cotton Oil Mill, Inc. Hollis, OK	38% Protein Supplement prime Quality Meal		98F-00278		
		Crude Fiber, %	13.59	17	
		Crude Protein, %	39.12	38	
Howard Farmers Coop Assn Howard, SD	Custom Blend		98F-03908		
		Tylosin, g/ton	71.650	100	
Hub City Feed & Seed Aberdeen, SD	** Hub City's Pheasant Brand Calf Creep-B-68 Medicated		98F-00970		
		Crude Fiber, %	15.14	18	
		Lasalocid, g/ton	67.400	68	
		Crude Protein, %	13.24	14	DEFICIENT
	Soybean Meal		98F-01555		
		Ash, %	5.30	8	
		Crude Protein, %	43.30	44	
	50% Swine Meat + Bone Meal		98F-01847		
		Calcium, %	8.02	8.5-10.2	
		Crude Fat, %	12.02	6	
		Phosphorus, %	4.000	4	
		Crude Protein, %	49.76	50	
	Chick Starter Feed		98F-01891		
		Amprolium, %	0.0115	0.0125	
		Crude Protein, %	20.34	20	
	** Beef Mineral B1200 Medicated		98F-01914		
		Calcium, %	25.38	14-17	EXCESSIVE
		Lasalocid, g/ton	1140.000	1200	
		Phosphorus, %	3.660	2.5	
		Salt (ChlorideX1.65), %	13.20	12-15	
		Salt (Sodium X 2.54), %	10.45	12-15	DEFICIENT
		Vitamin A, IU/lb	89000	80000	
	Hub City Cocci - Crumbles Medicated		98F-05901		
		Crude Fiber, %	6.15	18	
		Decoquinatate, %	0.132	0.125	
	Aureomycin 4G Crumbles Medicated		98F-05902		
		Crude Fiber, %	7.30	25	
		Chlortetracycline, g/lb	3.09	4	
		Crude Protein, %	14.13	9	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim		
Hubbard Feeds, Inc. Mankato, MN	** TM Crumbles Terramycin 4 Gram Medicated	Oxytetracycline, g/lb	2.635	4	DEFICIENT	
		Vitamin A, IU/lb	262000	500000	DEFICIENT	
	Soybean Meal	Crude Protein, %	98F-06114	45.62	44	
			98F-06578			
	Aureo S700 2g Crumbles	Chlortetracycline, g/lb	98F-08900	1.67	2	
				2.27	2	
	Hubbard Amprol Crumbles	Amprolium, %	98F-00941	1.0800	1.25	
	Hubbard Super 13 Mineral	Calcium, %	98F-01545	18.19	16.6-19.9	
				12.810	13	
				9.83	9.9-11.8	
				4.460	5	
	Hubbard 14% Stress Relief	Crude Fiber, %	98F-02180	9.16	10	
				14.15	14	
	Hubbard 14% Stress Relief	Crude Protein, %	98F-02180	14.15	14	
	** Hiweigh 45 swine concentrate	Calcium, %	98F-02968	7.53	6-7	
				4.240	4.5	
			2.910	2.7		
			45.14	45		
			4.20	2.5-3.5	EXCESSIVE	
			4.14	2.5-3.5	EXCESSIVE	
			28000	30000		
Lean Start Pack	Crude Fat, %	98F-02969	6.00	5.7		
			3.160	2.9		
			37.46	35		
Hubbard Super Gain 14	Crude Fiber, %	98F-03454	7.65	15		
			15.08	14		
Hubbard Min-Tech Sweet Mag 14	Calcium, %	98F-03455	7.62	7.5-8.9		
			4.150	4		
			21.75	21.3-25.6		
			52000	50000		
Range - N - Grow AS 35	Crude Fiber, %	98F-06120	15.20	19.5		
			26.100	35		
			14.27	12		
			35.00	35		
** Hubbard Commercial Feedlot 40-16 B800 Custom Mix	Calcium, %	98F-08958	6.16	5.5-6.5		
			8.01	14		
			727.000	800		
			37.18	40	DEFICIENT	
			2.74	2.8-3.8		
			45000	40000		

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
Hubbard 30% Cottonseed Cake			98F-08959	
		Crude Fiber, %	10.15	12
		Crude Protein, %	31.52	30
		Vitamin A, IU/lb	27000	30000
Commercial Feedlot 40-16 B400			98F-09559	
		Calcium, %	6.54	5.5-6.5
		Crude Fiber, %	7.30	14
		Lasalocid, g/ton	402.000	400
		Crude Protein, %	40.61	40
		Salt (Sodium X 2.54), %	3.51	2.8-3.8
		Vitamin A, IU/lb	51000	40000
Hubbard 30% Cottonseed Cake			98F-09560	
		Crude Fiber, %	10.92	12
		Crude Protein, %	29.66	30
		Vitamin A, IU/lb	29000	30000
Hubbard Feeds, Inc.				
Rapid City, SD				
Soybean Meal 47% Protein			98F-00560	
		Crude Protein, %	46.53	47
Range-N-Grow AS 35			98F-00828	
		Crude Fiber, %	13.06	19.5
		Chlortetracycline, mg/lb	28.900	35
		Crude Protein, %	13.22	12
		Sulfamethazine, mg/lb	32.85000	35
20% Western Cake			98F-01542	
		Calcium, %	2.51	2-3
		Crude Fiber, %	7.79	10
		Equiv Crude Protein, %	6.39	6
		Crude Protein, %	21.74	20
		Salt (Sodium X 2.54), %	1.09	1-2
		Vitamin A, IU/lb	38320	30000
14% Stress Relief			98F-01543	
		Crude Fiber, %	6.88	10
		Crude Protein, %	14.90	14
Soybean Meal 47% Protein			98F-01885	
		Crude Protein, %	46.66	47
Custom Special R1600 #1061			98F-01886	
		Monensin, g/ton	1430.00	1600
		Non-Protein Nitrogen, %	39.26	40
Super Gain 14 B47.6			98F-01887	
		Crude Fiber, %	9.11	15
		Lasalocid, g/ton	44.700	47.6
		Crude Protein, %	15.11	14
Super Gain 14			98F-02967	
		Crude Fiber, %	9.02	15
		Crude Protein, %	14.45	14
Hubbard Feeds Inc.				
Watertown, SD				
Hubbard Lean Era			98F-00653	
		Calcium, %	3.41	3-4
		Crude Fat, %	5.29	5
		Lysine - Total, %	2.690	2.6
		Crude Protein, %	36.04	35
		Salt (Sodium X 2.54), %	2.17	1.8-2.3

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Hubbard Min-Tech Sweet Phos 12 Mineral		98F-00973		
		Calcium, %	14.02	12.3-14.7	
		Iodine, %	57.700	50	
		Phosphorus, %	11.460	12	
		Salt (Sodium X 2.54), %	12.54	12.1-14.5	
		Selenium, ug/g (ppm)	28.600	20	
		Vitamin A, IU/lb	191000	180000	
	Recharger II AS 35 Stress Control Formula-Medicated		98F-01559		
		Crude Fiber, %	17.15	22	
		Chlortetracycline, mg/lb	39.800	35	
		Equiv Crude Protein, %	2.60	2	
		Crude Protein, %	14.33	12	
		Sulfamethazine, mg/lb	36.40	35	
	Custom Mix-One Step Calf Grower C175 Medicated		98F-01718		
		Chlortetracycline, g/ton	187.500	175	
	Custom Lamb Mix - Medicated		98F-06273		
		Calcium, %	4.78	4.2-5.2	
		Crude Fiber, %	13.13	18.5	
		Equiv Crude Protein, %	6.71	7.5	
		Lasalocid, g/ton	145.000	150	
		Crude Protein, %	29.47	30	
	34% Prime Lamb Supplement B150 7313-5		98F-06737		
		Calcium, %	5.54	5-6	
		Lasalocid, g/ton	154.000	150	
		Crude Protein, %	33.58	34	
		Salt (Sodium X 2.54), %	2.12	2.1-2.6	
	Hubbard 14% Calf Creep B 60 10% Fiber Max		98F-06944		
		Crude Fiber, %	9.45	10	
		Lasalocid, g/ton	55.500	60	
		Crude Protein, %	15.37	14	
	** Hubbard Min-Tech Sweet Phos 12 Mineral		98F-06945		
		Calcium, %	13.84	12.3-14.7	
		Iodine, ppm	68.0	50	
		Phosphorus, %	10.860	12	DEFICIENT
		Salt (Sodium X 2.54), %	12.10	12.1-14.5	
		Selenium, ug/g (ppm)	16.950	20	
		Vitamin A, IU/lb	157000	180000	
	Hubbard Custom Nursery Complete T135		98F-08046		
		Crude Fat, %	5.91	6	
		Crude Protein, %	22.70	19	
Hubbard Feeds					
Whitewood, SD					
	** Sweet 14%		98F-09612		
		Acid Detergent Fiber, %	2.52	2	EXCESSIVE
		Potassium, %	3.230	4	DEFICIENT
		Crude Protein, %	15.07	14	
		Selenium, ug/g (ppm)	4.660	4.4	
		Vitamin A, IU/lb	46000	50000	
HyVee Inc.					
Des Moines, IA					
	HyVee Dog Food with Chicken Chunks		98F-01434		
		Crude Fat, %	12.69	6	
		Oven Moisture, %	71.54	78	
		Crude Protein, %	9.74	8	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
IBP Inc					
Dakota City, NE					
	50% Meat and Bone Meal		98F-01437		
	Calcium, %		9.69	9.36-10.3	
	Crude Fat, %		9.89	6	
	Phosphorus, %		4.680	4	
	Crude Protein, %		52.63	50	
	Meat & Bone Meal		98F-02621		
	Calcium, %		9.57	8.4-10	
	Crude Fat, %		9.36	6	
	Phosphorus, %		4.630	4	
	Crude Protein, %		51.73	50	
J&R Distributing					
Lake Norden, SD					
	*** J&R 18% Pig Starter 50G MCDX-Medicated		98F-01580		
	Carbadox, g/ton		35.55000	50	DEFICIENT
	Crude Protein, %		18.71	18.1	
John Morrell & Company					
Sioux City, IA					
	50% Meat & Bone Meal		98F-00888		
	Calcium, %		9.73	8.4-10	
	Crude Fat, %		9.90	6	
	Phosphorus, %		4.770	4	
	Crude Protein, %		50.30	50	
	50% Meat and Bone Meal Certified Pork		98F-01440		
	Calcium, %		8.72	8.4-10	
	Crude Fat, %		12.98	6	
	Phosphorus, %		4.230	4	
	Crude Protein, %		50.37	50	
	50% Meat and Bone Meal		98F-03732		
	Calcium, %		9.30	8.4-10	
	Crude Fat, %		14.04	6	
	Phosphorus, %		4.420	4	
	Crude Protein, %		49.71	50	
Johnsons Ranchers Supply Inc					
Wall, SD					
	*** Hard Grass 38 Block w/MAG		98F-02202		
	Ash, %		33.63		
	Calcium, %		2.94	1.5-2.5	EXCESSIVE
	Crude Fiber, %		1.99	4	
	Equiv Crude Protein, %		12.64	13	
	Crude Fat, %		1.52	1	
	Iodine, %		0.002	0.0018	
	Magnesium, %		3.39	3	
	Oven Moisture, %		9.88		
	NE/Maintenance, Mcal/lb		0.47	0.7	
	Nitrogen Free Extrct, %		15.29		
	Phosphorus, %		2.470	2	
	Potassium, %		2.410	2.5	
	Crude Protein, %		37.69	38	
	Salt (Sodium X 2.54), %		12.17	12-14	
	Sulfur, %		1.700	1.6	
	TDN, %		49.7	49	
	Vitamin A, IU/lb		48000	60000	

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
Kal Kan Foods Inc Vernon, CA				
	Kal Kan Cat Food		98F-08957	
		Ash, %	2.38	3
		Crude Fat, %	8.44	5
		Oven Moisture, %	78.54	78
		Crude Protein, %	7.84	8
		Taurine - Free, %	0.065	0.05
Kay Dee Feed Company Sioux City, IA				
	Kay Dee Ranger 8.2 Mineral		98F-00944	
		Calcium, %	20.66	18-21
		Iodine, ppm	95.300	100
		Phosphorus, %	7.930	8.2
		Potassium, %	1.940	2
		Salt (Sodium X 2.54), %	9.75	8-9.6
		Selenium, ug/g (ppm)	30.200	28
		Vitamin A, IU/lb	159000	125000
	Ranger 8.2 Kaydets		98F-01915	
		Calcium, %	21.23	19-22.55
		Phosphorus, %	8.040	8.2
		Salt (Sodium X 2.54), %	11.88	9-10.8
		Vitamin A, IU/lb	225000	125000
	Ranger 20 Grazer		98F-02970	
		Crude Protein, %	20.68	20
		Salt (Sodium X 2.54), %	15.05	14.25-17
		Vitamin A, IU/lb	31000	20000
Kaytee Products Inc Chilton, WI				
	Kaytee Hi Calcium Grit		98F-02001	
		Calcium, %	19.41	18-21
		Salt (Sodium X 2.54), %	3.18	2-3
L/M Animal Farms Pleasant Plain, OH				
	Chinchilla Food		98F-02003	
		Crude Fiber, %	12.95	18
		Oven Moisture, %	9.21	12
		Crude Protein, %	17.87	17
	** Classic Blend Hamster Food		98F-07880	
		Karl Fisher Moisture, %	10.80	10
		Oven Moisture, %	12.15	10
		Crude Protein, %	11.64	12
Labolt Farmers Grain Labolt, SD				
	Custom Feed		98F-01561	
		Monensin, g/ton	30.30	24
		Tylosin, g/ton	12.400	12
Land O Lakes Ag Services Dawson, MN				
	In Force 13% Creep Bov Medicated		98F-00137	
		Crude Fiber, %	17.94	20
		Lasalocid, g/ton	57.500	60
		Crude Protein, %	13.71	13

EXCESSIVE

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Pro Leader Swine Grow/Finish Supplement (13324)		98F-00971		
		Calcium, %	4.34	3.8-4.8	
		Lysine - Total, %	2.410	2.56	
		Phosphorus, %	1.960	2	
		Crude Protein, %	40.08	40	
		Salt (Sodium X 2.54), %	2.08	1.7-2.2	
	Pro Leader Swine Feed		98F-05652		
		Calcium, %	3.79	4-5	
		Phosphorus, %	1.830	2	
		Crude Protein, %	42.40	40	
		Salt (Sodium X 2.54), %	2.11	1.7-2.7	
Land O Lakes Ag Services					
Volga, SD	Hardy Champion Sweet 12 Horse Feed		98F-06351		
		Crude Protein, %	11.94	12	
Land O Lakes Inc.					
Fort Dodge, IA					
	Land O Lakes Barley Balancer		98F-00438		
		Calcium, %	5.26	4.9-5.8	
		Lysine - Total, %	2.110	2.3	
		Phosphorus, %	2.050	2	
		Crude Protein, %	36.15	36	
		Salt (Sodium X 2.54), %	2.78	2-2.5	
		Selenium, ug/g (ppm)	2.850	0.8	
	44% Soybean Meal		98F-00439		
		Crude Protein, %	44.71	44	
	** Land O Lakes Nutri Beef 50 M 450		98F-02570		
		Calcium, %	7.82	7.3-8.7	
		Equiv Crude Protein, %	45.24	46	
		Vacuum Moisture, %	34.48	32	
		Monensin, g/ton	454.00	450	
		Potassium, %	3.360	3.5	
		Crude Protein, %	51.11	50	
		Salt (ChlorideX1.65), %	5.53	2-3	EXCESSIVE
		Salt (Sodium X 2.54), %	4.45	2-3	EXCESSIVE
		Total Sugars, %	8.87	7	
		Vitamin A, IU/lb	35000	30000	
	** 44% Soybean Meal		98F-02686		
		Crude Protein, %	42.22	44	DEFICIENT
	Land O Lakes Premier 1:1 Mineral		98F-06352		
		Calcium, %	17.37	15.4-18.4	
		Magnesium, %	2.70	2	
		Phosphorus, %	14.820	15	
		Selenium, ug/g (ppm)	16.000	15	
		Vitamin A, IU/lb	261000	200000	
	Land O Lakes Med-Flex NT med		98F-06353		
		Oxytetracycline, g/lb	8.400	10	
	Pork Supreme L.G. Premix		98F-06354		
		Calcium, %	21.86	19.6-23.5	
		Phosphorus, %	10.040	10	
		Salt (Sodium X 2.54), %	12.47	10.9-13	
		Selenium, ug/g (ppm)	6.835	6	
		Vitamin A, IU/lb	130000	143000	
	Hardy Champion Rabbit Ration		98F-08961		
		Crude Fiber, %	12.82	13-16	
		Crude Protein, %	18.65	17	

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Manufacturer Location	Product	Analyte	Found	Claim	
Land O Lakes, Inc. Sheldon, IA					
	Beef Builder 38 Bov Medicated		98F-00972		
	Calcium, %		4.49	4-5	
	Crude Fiber, %		6.25	11.5	
	Lasalocid, g/ton		502.000	500	
	Crude Protein, %		38.06	38	
	Vitamin A, IU/lb		40000	40000	
	44 % Soybean Meal		98F-01421		
	Crude Protein, %		43.30	44	
	Pig Grower Mix		98F-05895		
	Calcium, %		1.93	1.5-2	
	Lysine - Total, %		6.340	5.5	
	Crude Protein, %		40.10	38.5	
	Sheep Balancer Bov Medicated		98F-06946		
	Calcium, %		5.26	4.5-5.5	
	Lasalocid, g/ton		158.000	133	
	Crude Protein, %		32.38	33	
	Salt (Sodium X 2.54), %		2.03	2.3-2.8	
	Vitamin A, IU/lb		41000	45000	
Madison Farmers Elevator Madison, SD					
	Custom Mix 16%		98F-02803		
	Chlortetracycline, g/ton		84.200	100	
Manna Pro Corporation St. Louis, MO					
	** 37% Protein Block		98F-06953		
	Calcium, %		4.87	4.8-5.8	
	Equiv Crude Protein, %		19.02	18.5	
	Crude Protein, %		39.10	37	
	Salt (Sodium X 2.54), %		8.99	9-10.8	
	Vitamin A, IU/lb		16000	30000	DEFICIENT
McFleeg Inc Watertown, SD					
	31% All Natural Supplement		98F-06271		
	Calcium, %		2.11	1.5-2	
	Crude Protein, %		33.20	31	
	Vitamin A, IU/lb		40000	40000	
	MC 90-S		98F-06272		
	Crude Fiber, %		6.58	12	
	Crude Fat, %		8.64	5	
	Crude Protein, %		23.51	24	
Mid-States Distributing Company St Paul, MN					
	Dura Life High Protein Cat Food		98F-06259		
	Crude Fat, %		8.98	9	
	Oven Moisture, %		8.10	12	
	Crude Protein, %		32.13	31.5	
Midwest Cooperatives Onida, SD					
	Custom Blend		98F-08833		
	Chlortetracycline, g/ton		76.600	100	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Midwest PMS					
Gering, NE					
	CM 684 custom formulation		98F-01546		
		Vacuum Moisture, %	36.28	36	
		Crude Protein, %	9.46	3.75	
	** CM 236		98F-03431		
		Equiv Crude Protein, %	9.51	7.5	EXCESSIVE
		Vacuum Moisture, %	38.06	41	
		Crude Protein, %	16.81	15	
		Salt (Sodium X 2.54), %	3.71	3-3.5	
		Vitamin A, IU/lb	42000	40000	
Midwest PMS					
Minatare, NE					
	Custom Mix 690		98F-00829		
		Vacuum Moisture, %	28.54	37	
		Crude Protein, %	10.42	4	
	Cm 684		98F-00940		
		Oven Moisture, %	35.84	36	
		Crude Protein, %	10.90	3.75	
	** LM 289		98F-00943		
		Equiv Crude Protein, %	10.26	7	EXCESSIVE
		Oven Moisture, %	40.10	41	
		Crude Protein, %	19.47	15	
	CM 149		98F-03432		
		Calcium, %	8.32	8-8.5	
		Equiv Crude Protein, %	42.89	42	
		Vacuum Moisture, %	32.52	33	
		Monensin, g/ton	368.00	350	
		Crude Protein, %	47.24	46	
		Salt (ChlorideX1.65), %	4.68	3.75-4.25	
		Salt (Sodium X 2.54), %	8.78	3.75-4.25	EXCESSIVE
		Tylosin, g/ton	84.700	100	
		Vitamin A, IU/lb	21000	20000	
Millbrook Feed Mill					
Mitchell, SD					
	46.5% Protein Soybean Meal		98F-03693		
		Ash, %	6.18	8	
		Oven Moisture, %	11.58	12.5	
		Crude Protein, %	46.31	46.5	
Moorman Mfg Company					
Quincy, IL					
	Moormans Special Range Mineral Cu Zn 3625		98F-04165		
		Calcium, %	18.04	17.4-20.85	
		Copper, ug/g (ppm)	3400.0	2500	
		Phosphorus, %	8.110	8	
		Salt (Sodium X 2.54), %	16.08	13.55-16.25	
		Selenium, ug/g (ppm)	42.900	39	
		Vitamin A, IU/lb	341000	200000	
		Zinc, ug/g (ppm)	8830.00	8800	
	Moorman's Calf Grower BT		98F-04166		
		Lasalocid, g/ton	57.200	60	
		Crude Protein, %	15.45	15	
		Selenium, ug/g (ppm)	0.555	0.3	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Moorman's Max Lean MVP		98F-04167		
		Calcium, %	4.24	3.7-4.7	
		Lysine - Total, %	3.560	3.2	
		Crude Protein, %	43.33	42	
		Salt (Sodium X 2.54), %	2.45	1.8-2.3	
Muellers Feed Mill					
Martin, SD					
	** M6 Range Mineral		98F-02196		
		Calcium, %	12.74	12-14.5	
		Iodine, %	0.015	0.02	
		Magnesium, %	6.38	10	DEFICIENT
		Phosphorus, %	11.250	12	
		Salt (ChlorideX1.65), %	10.08	15-16	DEFICIENT
		Salt (Sodium X 2.54), %	10.10	15-16	DEFICIENT
		Vitamin A, IU/lb	71000	50000	
	** Muellers Custom Chelated Hi Mag Range Mineral		98F-02199		
		Calcium, %	13.45	11.8-13	
		Magnesium, %	6.63	6	
		Phosphorus, %	8.370	8	
		Salt (Sodium X 2.54), %	14.80	13.5-15.5	
		Selenium, ug/g (ppm)	0.423	22	DEFICIENT
		Vitamin A, IU/lb	262000	265000	
National By-Products Inc					
Omaha, NE					
	60% Fish Meal		98F-03443		
		Calcium, %	5.37	4.5-5.5	
		Crude Fat, %	7.76	5	
		Phosphorus, %	2.900	3	
		Crude Protein, %	64.30	60	
National Pet Products, Inc.					
New Holstein, WI					
	National Puppy Formula		98F-01419		
		Crude Fat, %	19.45	18	
		Oven Moisture, %	7.06	10	
		Crude Protein, %	32.12	30	
Natura Pet Products					
Santa Clara, CA					
	Innova Dog Food		98F-07879		
		Crude Fat, %	7.74	6	
		Oven Moisture, %	68.41	74	
		Crude Protein, %	9.46	9	
Natures Gold					
Pleasant Plain, OH					
	** Nature's Gold Hamster/Gerbil Food		98F-00827		
		Arginine - Total, %	0.668	0.75	
		Cystine - Total, %	0.266	0.44	DEFICIENT
		Glycine - Total, %	0.503	0.58	
		Histidine - Total, %	0.278	0.28	
		Isoleucine - Total, %	0.426	0.58	DEFICIENT
		Leucine - Total, %	1.076	1.15	
		Lysine - Total, %	0.447	0.44	
		Methionine - Total, %	0.196	0.44	DEFICIENT
		Oven Moisture, %	12.72	10	EXCESSIVE
		Phenylalanine-Total, %	0.578	0.63	
		Crude Protein, %	12.49	12	
		Threonine - Total, %	0.396	0.43	
		Tryptophan - Total, %	0.125	0.18	DEFICIENT
		Valine - Total, %	0.535	0.65	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Nelson & Sons Inc					
Murray, UT					
	Trout Fry Silver Cup Fish Feed		98F-08433		
	Ash, %		10.29	12	
	Crude Fat, %		14.64	14	
	Crude Protein, %		55.16	48	
	Sodium, %		0.60	0-2	
	2.5 Extruded Floating Silver Cup Steelhead		98F-08434		
	Ash, %		8.01	12	
	Fat: Acid Hydrolysis, %		14.99	16	
	Crude Protein, %		46.82	45	
	Sodium, %		0.30	0-2	
	3.5 Extruded Floating Silver Cup Trout		98F-08435		
	Ash, %		6.60	12	
	Crude Fat, %		10.30	10	
	Crude Protein, %		43.75	40	
	Sodium, %		0.64	0-2	
New Generation Feeds					
Belle Fourche, SD					
	** NE-30		98F-08894		
	Calcium, %		3.07	2-2.5	EXCESSIVE
	Equiv Crude Protein, %		14.02	15	
	Fat: Roesse Gottlieb, %		4.84	5	
	Iodine, ppm		15.0	15	
	Phosphorus, %		2.130	2	
	Potassium, %		2.670	2.5	
	Crude Protein, %		34.84	30	
	Selenium, ug/g (ppm)		5.440	6.6	
	Vitamin A, IU/lb		67000	80000	
New Underwood Grain					
New Underwood, SD					
	Chicken Scratch		98F-00947		
	Crude Protein, %		11.48	10	
Northern Sun/Div.of ADM					
Enderlin, ND					
	** 35% Sunflower Meal		98F-00654		
	Ash, %		6.51	8	
	Crude Fiber, %		20.17	24	
	Crude Protein, %		33.51	35	DEFICIENT
	35% Sunflower Meal		98F-01436		
	Ash, %		6.92	8	
	Crude Fiber, %		15.03	24	
	Crude Protein, %		38.19	35	
	Sunflower Meal		98F-07873		
	Ash, %		6.92	8	
	Crude Fiber, %		19.73	24	
	Crude Protein, %		34.88	35	
OSI Marine Lab					
Hayward, CA					
	O.S.I. Brine Shrimp Aquarium Flake Food		98F-02002		
	Crude Fat, %		13.20	7	
	Karl Fisher Moisture, %		7.35	8	
	Crude Protein, %		48.18	48	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
PCS Phosphate Company Inc Raleigh, NC	PCS 18.5% Dicalcium Phosphate		98F-08047	
		Calcium, %	20.19	20-24
		Phosphorus, %	17.890	18.5
Pennfield Animal Health Omaha, NE	Pennchlor 50 Meal Type A		98F-07871	
		Chlortetracycline, g/lb	52.00	50
Pet Life Foods, Inc. Willowbrook, IL	Pet Life Medium Dog Biscuits		98F-01563	
		Crude Fat, %	7.98	7.5
		Oven Moisture, %	7.27	12
		Crude Protein, %	22.18	20
Plains Milling Inc. Magnolia, MN	50% Protein Meat & Bone Meal		98F-00507	
		Calcium, %	8.35	8.8-10.6
		Crude Fat, %	10.55	6
		Phosphorus, %	4.180	4
	All Pork 50% Protein Meat+Bone Meal		98F-01952	
		Calcium, %	8.52	8.8-10.6
		Crude Fat, %	10.45	6
		Phosphorus, %	4.140	4
		Crude Protein, %	54.91	50
		Premier Farmtech Kansas City, MO	** Cocci-Trol B-9000-Medicated with Bovatec	
Lasalocid, g/lb	2.43			4.5
Pro Visions Pet Specialties St. Louis, MO	Pro Plan Chicken and Rice Formula		98F-06997	
		Fat: Acid Hydrolysis, %	12.06	12
		Linoleic Acid 18.2, %	1.8100	1.3
		Oven Moisture, %	7.41	12
		Crude Protein, %	32.54	27
Purina Mills Minneapolis, MN	Purina Impact 44 RM 227-T 90		98F-06274	
		Calcium, %	5.62	5-6
		Crude Fiber, %	6.14	20
		Equiv Crude Protein, %	25.94	26
		Monensin, g/ton	218.00	227
		Potassium, %	2.500	2.5
		Crude Protein, %	44.22	44
		Salt (Sodium X 2.54), %	3.04	2.5-3.5
		Tylosin, g/ton	78.400	90
		Purina Mills Sioux City, IA	Purina CTC-10 GM	
Chlortetracycline, g/lb	10.60			10

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim		
	Purina Cattle Mineral 12:12 VA		98F-01846			
		Calcium, %	13.16	12-14		
		Phosphorus, %	11.650	12		
		Salt (Sodium X 2.54), %	3.10	3-4		
		Vitamin A, IU/lb	141000	150000		
	Purina Cattle Mineral 12:12 VA		98F-05903			
		Calcium, %	12.83	12-14		
		Phosphorus, %	11.580	12		
		Salt (Sodium X 2.54), %	3.54	3-4		
		Vitamin A, IU/lb	180000	150000		
	Purina Calf Developer N	Crude Protein, %	98F-05904	14.92	13	
	Purina Show Chow Lean 100 CTC 100 Medicated		98F-06264			
		Chlortetracycline, g/ton	76.500	100		
		Crude Fat, %	7.89	5.5		
		Crude Protein, %	17.59	17		
Purina Mills St. Louis, MO						
	Strategy Professional Formula GX 35D9		98F-03206			
		Crude Fat, %	6.19	6		
		Crude Protein, %	15.92	14		
	Horse Chow 200		98F-03704			
		Crude Fiber, %	16.63	25		
		Crude Protein, %	14.31	14		
	Pure Pride 100		98F-03705			
		Crude Fiber, %	10.07	12		
		Crude Protein, %	12.68	10		
	Cattle Mineral 12:12 HIZC Mineral		98F-07887			
		Calcium, %	14.98	12-14		
		Phosphorus, %	11.130	12		
		Salt (Sodium X 2.54), %	3.56	3-4		
		Vitamin A, IU/lb	162000	150000		
Purina Mills Inc Aberdeen, SD						
	** Custom Sheep Mix	Lasalocid, g/ton	98F-01845	17.867	35	DEFICIENT
Quality Liquid Feeds Dunlap, IA						
	** Land O Lakes Super 40C Dairy/Beef Liquid Supplement		98F-02569			
		Equiv Crude Protein, %	35.28	35		
		Vacuum Moisture, %	37.42	34		
		Crude Protein, %	41.29	40		
		Total Sugars, %	29.64	29		
		Vitamin A, IU/lb	10300	30000	DEFICIENT	
Quality Liquid Feeds Inc Dodgeville, WI						
	** Super 40C		98F-06947			
		Equiv Crude Protein, %	21.00	35		
		Karl Fisher Moisture, %	27.70			
		Vacuum Moisture, %	28.58	34		
		Crude Protein, %	31.41	40	DEFICIENT	
		Total Sugars, %	20.91	29	DEFICIENT	
		Vitamin A, IU/lb	82000	30000		

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Ragland Mills Inc Neosho, MO					
	Ragland 3way Sweet Block		98F-02124		
		Acid Detergent Fiber, %	6.71	11	
		Calcium, %	3.91	3.5-4.5	
		Crude Fiber, %	4.59	10	
		Phosphorus, %	3.830	4	
		Salt (Sodium X 2.54), %	16.56	14-16.5	
		Total Sugars, %	18.72	20	
		Vitamin A, IU/lb	42000	60000	
Ralston Purina Company St. Louis, MO					
	Alley Cat		98F-02004		
		Crude Fat, %	11.72	8	
		Oven Moisture, %	8.10	12	
		Crude Protein, %	32.26	30	
Rancher Feed & Seed Buffalo Gap, SD					
	Hen feed		98F-03423		
		Crude Protein, %	9.63	10	
Roche Vitamins & Fine Chemicals Parsippany, NJ					
	Bovatec 68		98F-02194		
		Lasalocid, g/lb	71.50	68	
	** Aureo S700 granular Type A		98F-07872		
		Chlortetracycline, g/lb	33.70	35	
		Sulfamethazine, %	4.44750	7.7	DEFICIENT
Rudebusch Bros Castlewood, SD					
	Extruded Soybean Meal		98F-00886		
		Crude Fat, %	18.32	17	
		Crude Protein, %	37.88	36	
Safeway Inc Oakland, CA					
	Safeway Select Samon Dinner for Cats		98F-00562		
		Ash, %	1.91	2.6	
		Crude Fat, %	6.31	5	
		Oven Moisture, %	77.69	78	
		Crude Protein, %	11.93	11	
		Taurine - Free, %	0.060	0.05	
	Safeway Select Beef and Liver Dinner for Dogs		98F-01744		
		Ash, %	1.57	2.5	
		Crude Fat, %	8.03	6	
		Oven Moisture, %	78.68	78	
		Crude Protein, %	9.79	10	
Scranton Equity Exchange Scranton, ND					
	Lean Gain .75L G-100 Medicated		98F-02484		
		Chlortetracycline, g/ton	81.300	100	
		Crude Protein, %	15.93	14	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Lamb Grower Complete B-25		98F-02485		
		Crude Fiber, %	10.13	12	
		Equiv Crude Protein, %	0.56	0.5	
		Crude Protein, %	19.30	18	
SD Soybean Processors					
Volga, SD					
	44% Soybean Meal		98F-03205		
		Crude Protein, %	44.42	44	
	Soybean Meal 47%		98F-05072		
		Crude Protein, %	46.81	47	
	Soybean Meal 44% Solvent Extracted		98F-05653		
		Crude Protein, %	43.95	44	
	Soybean Meal 47%		98F-08516		
		Crude Protein, %	48.30	47	
Sheba Inc.					
Vernon, CA					
	Sheba Cat Food with Turkey in Meaty Juices		98F-00148		
		Ash, %	1.99	3	
		Oven Moisture, %	79.02	82	
		Crude Protein, %	10.13	8	
		Taurine - Free, %	0.098	0.05	
Shur-Tone Feeds					
Milford Center, OH					
	** Shur-Tone Feeds 37% Cattle Block		98F-06952		
		Calcium, %	4.89	4.5-5.5	
		Equiv Crude Protein, %	17.51	18.5	
		Crude Protein, %	34.14	37	DEFICIENT
		Salt (Sodium X 2.54), %	14.38	15-17	
		Vitamin A, IU/lb	46000	50000	
Shurfine International					
Northlake, IL					
	Shurfine Fisherman's Catch for Cats		98F-03428		
		Ash, %	3.22	3.5	
		Crude Fat, %	5.40	5	
		Oven Moisture, %	73.94	78	
		Crude Protein, %	12.27	10	
		Taurine - Free, %	0.074	0.05	
Simmons Foods					
Southwest City, MO					
	Hydrolyzed Feather-Meal		98F-01717		
		Oven Moisture, %	7.00	10	
		Crude Protein, %	85.07	80	
Sioux Nation Ag Center					
Sioux Falls, SD					
	CTC-8 Granules 616 C		98F-01420		
		Crude Fiber, %	16.90	29	
		Chlortetracycline, g/lb	7.20	8	
		Crude Protein, %	8.46	5	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Second Formula w/CTC and Denagard - Medicated		98F-08049		
		Chlortetracycline, g/ton	310.000	400	
		Crude Fat, %	5.41	5.4	
		Crude Protein, %	22.98	20	
	ICN W/CSP 250 medicated		98F-09667		
		Chlortetracycline, g/ton	85.200	100	
		Crude Fat, %	8.53	7.75	
		Crude Protein, %	25.34	23	
		Sulfathiazole, %	0.010	0.011	
	Swine 50 G/F		98F-09668		
		Calcium, %	22.30	21-25	
		Phosphorus, %	8.750	9.5	
		Salt (Sodium X 2.54), %	11.79	11-13	
		Selenium, ug/g (ppm)	10.100	8	
		Vitamin A, IU/lb	204000	135000	
South Shore Elevator Co. Waubay, SD					
	Pig Feed Custom Mix		98F-01556		
		Chlortetracycline, g/ton	309.000	400	
		Tylosin, g/ton	73.600	86	
Southern Cotton Oil Co. Levelland, TX					
	Cottonseed Meal		98F-07874		
		Crude Fiber, %	10.75	14	
		Crude Protein, %	43.97	41	
Squire Products Company Owatonna, MN					
	Country Squire Rabbit Feed		98F-01423		
		Crude Fiber, %	12.09	17	
		Crude Protein, %	17.69	18	
St. Jon Pet Care Products Harbor City, CA					
	** Shark Cartilage Tablets		98F-02000		
		Oven Moisture, %	6.90	6.7-8.1	
		Crude Protein, %	8.81	6.5-8	EXCESSIVE
Sterling Technology Toronto, SD					
	** Nursemate ASAP		98F-02201		
		Density, g/ml	0.876		
		Fat: Roese Gottlieb, %	56.41	20	
		Crude Protein, %	20.45	24	DEFICIENT
		Vitamin A, IU/30 mL	16850	42000	DEFICIENT
Terra International Canton, SD					
	** Hunting Feeds M.F. Balancer for Grower Finisher Pigs 4		98F-01418		
		Calcium, %	4.32	3.6-4.6	
		Lysine - Total, %	2.460	2.6	
		Crude Protein, %	37.01	38	DEFICIENT
		Salt (Sodium X 2.54), %	1.84	1.2-2.2	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
The Iams Company					
Dayton, OH					
	IAMS Lamb and Rice Formula for Dogs		98F-00515		
		Crude Fat, %	6.28	6	
		Oven Moisture, %	75.94	78	
		Crude Protein, %	10.60	9	
	IAMS Beef Formula for Dogs		98F-00561		
		Crude Fat, %	7.57	6	
		Oven Moisture, %	77.48	78	
		Crude Protein, %	9.12	9	
	Eukanuba Puppy Small Breed Dog Food		98F-08670		
		Fat: Acid Hydrolysis, %	19.77	21	
		Oven Moisture, %	7.94	10	
		Crude Protein, %	33.35	32	
	Iams Original Formula		98F-09565		
		Ash, %	5.70	6.5	
		Fat: Acid Hydrolysis, %	20.55	21	
		Oven Moisture, %	7.54	10	
		Crude Protein, %	33.67	32	
		Taurine - Free, %	0.113	0.15	
Tizco Inc					
Columbus, OH					
	Tizwhiz 30 Plus Horse Supplement		98F-00512		
		Calcium, %	3.03	3	
		Phosphorus, %	2.490	2.2	
		Crude Protein, %	33.08	30	
Tradition Feed Products Company					
Mankato, MN					
	Opticare Beef Pack R 1200-Medicated		98F-00945		
		Monensin, g/ton	1210.00	1200	
	Opticare Chlortetracycline Crumbles 4 Medicated		98F-01849		
		Chlortetracycline, g/lb	3.84	4	
	Beef Pack B1440		98F-03446		
		Lasalocid, g/ton	1400.000	1440	
	Pro Gold 16		98F-03456		
		Crude Protein, %	17.20	16	
	** Opticare Amprol Crumbles		98F-04446		
		Amprolium, %	0.7650	1.25	DEFICIENT
	Puppy Gro Dog Food		98F-06258		
		Ash, %	8.68		
		Crude Fiber, %	3.23	4.5	
		Fat: Acid Hydrolysis, %	8.56	9	
		Metabolizable Energy, Kcal/lb	1468.0	1560	
		Oven Moisture, %	8.04	12	
		Nitrogen Free Extract, %	42.46		
		Crude Protein, %	29.03	28	
Triple F Products					
Des Moines, IA					
	Dry Extruded Whole Soybeans		98F-05900		
		Crude Fat, %	19.00	18	
		Crude Protein, %	37.08	36	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Vigortone Ag Products Inc					
Cedar Rapids, IA					
	FC no. 325		98F-08895		
		Calcium, %	14.18	13.5-16.2	
		Phosphorus, %	6.790	7	
		Salt (Sodium X 2.54), %	20.07	18.2-21.8	
		Selenium, ug/g (ppm)	25.500	26.4	
		Vitamin A, IU/lb	270000	300000	
	*** Vigortone CTC 10 crumbles Type B Med		98F-08897		
		Crude Fiber, %	20.27	18	EXCESSIVE
		Chlortetracycline, g/lb	10.20	10	
Wagner Bros Feed Corp					
Farmingdale, NY					
	Wagner's Select Finch Blend		98F-06256		
		Crude Fiber, %	9.00	10	
		Crude Fat, %	14.47	15	
		Oven Moisture, %	8.39	12	
		Crude Protein, %	14.58	15	
Watertown Coop Elevator					
Watertown, SD					
	Custom Mix		98F-01585		
		Tylosin, g/ton	44.000	40	
	Custom Mix		98F-08052		
		Chlortetracycline, g/ton	452.000	400	
West Plains Grain					
Oelrichs, SD					
	Custom Mix Emu Finisher		98F-03444		
		Crude Protein, %	14.89	14	
Western Feed Co.					
Scranton, ND					
	Western Feed AXB-1600 No. 39-1771 Med		98F-08896		
		Calcium, %	15.50	15-18	
		Lasalocid, g/ton	1690.000	1600	
		Phosphorus, %	7.710	8	
		Vitamin A, IU/lb	357000	300000	
Westway Trading					
New Orleans, LA					
	Cane Molasses		98F-01442		
		Brix, degrees	78.0	79.5	
		Vacuum Moisture, %	27.75	27	
		Total Sugars, %	39.64	43	
	Cane Molasses		98F-02197		
		Vacuum Moisture, %	26.56	27	
	Wes-Las 79.5 Brix Cane Molasses		98F-07875		
		Vacuum Moisture, %	26.70	27	
		Total Sugars, %	43.84	43	

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Westway Trading Division St. Paul, MN					
	Mol-Mix Prime Regulated Release 32x67 Liquid Feed		98F-01947		
		Equiv Crude Protein, %	22.66	25	
		Vacuum Moisture, %	34.28	33	
		Crude Protein, %	31.63	32	
		Total Sugars, %	34.34	33	
		Vitamin A, IU/lb	47000	40000	
	** Mol-Mix Prime Regulated Release 32x67 Free-Choice Liq		98F-01948		
		Equiv Crude Protein, %	22.96	25	
		Lasalocid, g/ton	110.000	160	DEFICIENT
		Vacuum Moisture, %	33.76	33	
		Crude Protein, %	31.26	32	
		Total Sugars, %	32.68	33	
		Vitamin A, IU/lb	29000	40000	
Whiskas Vernon, CA					
	Whiskas Cat Food		98F-02123		
		Fat: Acid Hydrolysis, %	8.40	8	
		Oven Moisture, %	8.42	12	
		Crude Protein, %	31.80	30	
		Taurine - Free, %	0.092	0.1	
	Whiskas Seafood Chowder		98F-03449		
		Ash, %	2.68	3	
		Oven Moisture, %	80.30	82	
		Crude Protein, %	7.87	8	
		Taurine - Free, %	0.067	0.05	
Windy Hill Pet Food Company Brentwood, TN					
	Tuffy's Premium Growth Puppy Food		98F-06257		
		Fat: Acid Hydrolysis, %	20.04	20	
		Oven Moisture, %	6.95	12	
		Crude Protein, %	33.79	30	
Zapata Protein (USA) Inc Maneville, LA					
	Menhaden Fish Meal		98F-07876		
		Crude Fat, %	9.08	6	
		Crude Protein, %	64.90	60	
Zip Feed Mills Huron, SD					
	Custom Mixed Zip 25/50 Performer M-50 Medicated		98F-01136		
		Carbadox, g/ton	45.75000	50	
		Crude Protein, %	18.23	18	
	Hydrolyzed Poultry Feathers		98F-01719		
		Ash, %	2.95	6	
		Crude Protein, %	80.36	80	
	Zip GMN 15/80 Performer Conc 38%		98F-05896		
		Calcium, %	2.87	2.4-2.6	
		Lysine - Total, %	2.830	3	
		Crude Protein, %	37.58	38	
	Zip Calf Builder 14% B-60 Medicated		98F-05897		
		Crude Fiber, %	12.50	15	
		Lasalocid, g/ton	53.800	60	
		Crude Protein, %	14.74	14	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Zip Feed Mills					
Sioux Falls, SD					
	Zip Beef-Gro 45%		98F-01445		
		Calcium, %	1.83	1.5-2	
		Crude Fiber, %	8.74	10	
		Equiv Crude Protein, %	13.56	15	
		Potassium, %	2.050	2	
		Crude Protein, %	44.54	45	
		Salt (Sodium X 2.54), %	2.62	2.2-2.7	
		Vitamin A, IU/lb	60000	40000	
	Zip Swine Barley Balancer		98F-01888		
		Calcium, %	5.37	5-6	
		Cystine - Total, %	0.537		
		Cystine-Methionine, %	1.115	1.4	
		Crude Fat, %	10.95	10	
		Lysine - Total, %	1.980	2.1	
		Methionine - Total, %	0.582		
		Phosphorus, %	2.340	2.25	
		Potassium, %	2.790	3.25	
		Crude Protein, %	34.97	34	
		Salt (ChlorideX1.65), %	1.22	1.5-2.5	
		Salt (Sodium X 2.54), %	2.70	1.5-2.5	
		Tryptophan - Total, %	0.370	0.3	
	Soybean Meal Solvent Ext.		98F-01889		
		Crude Protein, %	46.10	46	
	Bison, SD Cake Non Medicated		98F-01890		
		Crude Fiber, %	9.47	12	
		Magnesium, %	3.25	3.5	
		Crude Protein, %	12.75	12	
	Phos 12 Cattle Mineral		98F-01976		
		Calcium, %	12.43	11-13	
		Phosphorus, %	11.950	12	
		Salt (Sodium X 2.54), %	9.87	9.5-11	
		Vitamin A, IU/lb	92000	100000	
	Zip Gmn Pork Builder 40%		98F-01977		
		Calcium, %	4.12	3-4	
		Crude Protein, %	40.93	40	
	** Zip Broiler Finish Medicated		98F-02260		
		Amprolium, %	0.0096	0.0125	DEFICIENT
		Lysine - Total, %	0.878	0.9	
		Methionine - Total, %	0.320	0.3	
		Crude Protein, %	18.71	19	
	Zip P-10 Mineral 845		98F-02263		
		Calcium, %	20.12	20-22	
		Phosphorus, %	9.570	10	
		Salt (Sodium X 2.54), %	12.80	12-14	
		Selenium, ug/g (ppm)	29.350	35	
		Vitamin A, IU/lb	58000	50000	
	Zip Beef Health 30% Tm-2000 Medicated		98F-02264		
		Crude Fiber, %	9.30	10	
		Oxytetracycline, g/lb	1.720	2	
		Potassium, %	2.600	2.5	
		Crude Protein, %	31.04	30	
		Salt (Sodium X 2.54), %	2.88	2.2-2.7	
		Vitamin A, IU/lb	55000	60000	
	Zip EDDI Supplement 827		98F-02265		
		Iodine, ppm	558.000	706	
		Salt (Sodium X 2.54), %	85.18	86-88	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Zip GMN Pork Pro 42%		98F-02266		
		Calcium, %	4.23	4-5	
		Lysine - Total, %	2.520	2.7	
		Phosphorus, %	2.090	2	
		Potassium, %	2.360	2.5	
		Crude Protein, %	43.05	42	
	** 822 Northern Plains Mineral Purple Ribbon Mineral B		98F-02687		
		Calcium, %	11.25	10-12	
		Iodine, ppm	22.500	66	DEFICIENT
		Phosphorus, %	9.950	10	
		Salt (Sodium X 2.54), %	14.94	13-15	
		Selenium, ug/g (ppm)	32.800	35	
		Vitamin A, IU/lb	111000	100000	
	Zip Ranch Block 32%		98F-03208		
		Calcium, %	1.68	1.5-2.5	
		Crude Fiber, %	7.54	12	
		Equiv Crude Protein, %	10.17	10	
		Crude Protein, %	34.04	32	
		Salt (Sodium X 2.54), %	10.40	9-10.8	
		Vitamin A, IU/lb	59000	50000	
	Zip Soybean Meal #899		98F-03421		
		Crude Protein, %	44.89	44	
	Zip Nat-Pro Block 24%		98F-03422		
		Calcium, %	1.58	1.5-2	
		Crude Protein, %	23.76	24	
		Salt (Sodium X 2.54), %	10.46	11-13	
		Vitamin A, IU/lb	50000	50000	
	** Zip B-1440 Free Choice Mineral Medicated		98F-03424		
		Calcium, %	14.57	13-15	
		Lasalocid, g/ton	1270.000	1440	
		Salt (Sodium X 2.54), %	19.49	19-21	
		Vitamin A, IU/lb	43500	75000	DEFICIENT
	** Zip 15/25 Performer CSP 250 Medicated		98F-03453		
		Chlortetracycline, g/ton	64.600	100	DEFICIENT
		Fat: Roese Gottlieb, %	5.89	6.5	
		Crude Protein, %	20.26	20	
		Sulfathiazole, %	0.011	0.011	
	Zip GMN Pork Builder 40%		98F-03689		
		Calcium, %	4.20	3-4	
		Lysine - Total, %	2.430	2.45	
		Crude Protein, %	40.85	40	
		Salt (Sodium X 2.54), %	1.60	1.5-2	
	Zip Steak-maker 42% 010		98F-03690		
		Calcium, %	8.29	7.5-9	
		Crude Fiber, %	10.96	15	
		Equiv Crude Protein, %	25.07	30	
		Potassium, %	2.340	2	
		Crude Protein, %	41.16	42	
		Vitamin A, IU/lb	67000	40000	
	** Zip Purple Ribbon Mineral Block 822 Northern Plains Min		98F-03691		
		Calcium, %	10.90	10-12	
		Iodine, ppm	18.5	66	DEFICIENT
		Phosphorus, %	9.245	10	
		Salt (Sodium X 2.54), %	14.83	13-15	
		Selenium, ug/g (ppm)	34.750	35	
		Vitamin A, IU/lb	164000	100000	

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
	Zip Steak - Maker 42% R-400/MA - 40 Medicated		98F-03907		
		Calcium, %	8.37	7.5-9	
		Crude Fiber, %	13.98	15	
		Equiv Crude Protein, %	28.36	30	
		Monensin, g/ton	394.00	400	
		Potassium, %	2.220	2	
		Crude Protein, %	41.20	42	
		Vitamin A, IU/lb	73000	40000	
	Doboy Calf Grower with Deccox and Sodium Diacetate Med		98F-06265		
		Acid Detergent Fiber, %	9.40	12	
		Calcium, %	2.56	2-2.5	
		Decoquinatate, %	0.0066	0.0066	
		Crude Protein, %	31.45	32	
		Salt (ChlorideX1.65), %	2.07	1.5-2	
		Salt (Sodium X 2.54), %	2.40	1.5-2	EXCESSIVE
		Sodium, %	0.94	0.5-1	
		Vitamin A, IU/lb	33000	40000	
	Mineral Pellets		98F-06345		
		Calcium, %	10.05	10-12	
		Iodine, ppm	47.0	66	
		Phosphorus, %	9.810	10	
		Salt (Sodium X 2.54), %	13.51	13-15	
		Selenium, ug/g (ppm)	37.900	35	
		Vitamin A, IU/lb	96000	100000	
	Zip All-A-Round 14% 001		98F-06348		
		Crude Fiber, %	18.73	18	
		Crude Protein, %	14.50	14	
	Zip Calf Builder 14% B60 Medicated		98F-06349		
		Crude Fiber, %	13.76	15	
		Lasalocid, g/ton	51.200	60	
		Crude Protein, %	14.21	14	
	Terramycin 2 Gram Medicated		98F-06350		
		Oxytetracycline, g/lb	1.980	2	
	Zipmycin 4 Granules		98F-08048		
		Crude Fiber, %	18.06	29	
		Chlortetracycline, g/lb	4.03	4	
		Crude Protein, %	7.70	5	
	Soybean Meal		98F-08349		
		Crude Protein, %	46.86	46	
	Zip Super Phos Mineral 843		98F-08350		
		Calcium, %	14.45	14.5-15.5	
		Phosphorus, %	14.320	15	
		Salt (Sodium X 2.54), %	9.46	9.5-11	
		Vitamin A, IU/lb	130000	100000	

*** = Misbranded

Animal Remedy Sample Count Report

Remedies Sampled From 1/1/98 To 12/31/98

Manufacturer and Location			Sample Count	Passed	Not Passed
8 In 1 Pet Products, Inc.	Hauppauge	NY	1	0	1
Agri Laboratories LTD	St. Joseph	MO	3	3	0
Aspen Veterinary Resources	N Kansas City	MO	2	2	0
Boehringer Ingelheim Animal Health	St Joseph	MO	5	5	0
Dealer Distribution of America	Poterville	CA	2	2	0
Durvet Inc	Blue Springs	MO	2	2	0
Elanco Animal Health	Indianapolis	IN	3	3	0
Fermenta Animal Health Company	Kansas City	MO	1	1	0
Fort Dodge Animal Health	Fort Dodge	IA	4	4	0
Hartz Mountain Corp	Secaucus	NJ	3	3	0
Imu-Tek Animal Health Inc	Ft. Collins	CO	1	1	0
Loveland Industries Inc	Greeley	CO	1	1	0
Merck & Co. c/o Merial, LTD.	Iselin	NJ	3	3	0
Milk Specialties Company	Dundee	IL	1	1	0
North American Animal Health	Lee's Summit	MO	1	1	0
Pfizer Animal Health	Lee's Summit	MO	12	12	0
Premier Farmtech	Kansas City	MO	1	1	0
Rhone Merieux, Inc.	Athens	GA	1	1	0
RX Veterinary Products	Porterville	CA	3	3	0
Solvay Animal Health/Fort Dodge	Fort Dodge	IA	3	2	1
TRC Animal Health	Phoenix	AZ	1	1	0
Universal Cooperatives Inc	Minneapolis	MN	1	0	1
Totals:			55	52	3

Percent Passed: 94.5%

Percent Not Passed: 5.5%

Remedy Summary Report

Remedies Sampled 01-01-1998 to 12-31-1998

Manufacturer Location	Product	Analyte	Found	Claim
8 In 1 Pet Products, Inc. Hauppauge, NY				
	** 8 in 1 Hamster and Gerbil Aid		98D-04168	
		Sulfadimethoxine, mg/oz	<u>24.600</u>	33.5 DEFICIENT
Agri Laboratories LTD St. Joseph, MO				
	Tetra-Bac 324 Tetracycline Hydrochloride Soluble Powder		98D-01425	
		Tetracycline HCl, g/5.0 oz	108.100	101.2
	Vitamins and Electrolytes "Plus"		98D-01426	
		Vitamin A, I.U./lb	10150000	10000000
	Sulfa-Max III SmSR 6.80.8 Sustained Release Bolus		98D-01570	
		Sulfamethazine, g/bolus	31.25000	30
Aspen Veterinary Resources N Kansas City, MO				
	Iron Dextran Complex		98D-01856	
		Iron, mg/mL	96.30	100
	NFZ Puffer		98D-04136	
		Nitrofurazone, %	0.188	0.2
Boehringer Ingelheim Animal Health St Joseph, MO				
	Anchor Oxy-Tet 100		98D-00997	
		Oxytetracycline, mg/mL	111.500	100
	Anchor Oxy-Tet 100		98D-02213	
		Oxytetracycline, mg/mL	108.000	100
	Oxy-Tet 100 Anchor		98D-02805	
		Oxytetracycline, mg/ml	105.000	100
	Anchor Oxy - Tet 100		98D-05032	
		Oxytetracycline, mg/ml	108.500	100
	Bio-Mycin 200 Oxytetracycline Injection Antibiotic		98D-06955	
		Oxytetracycline, mg/ml	197.000	200
Dealer Distribution of America Poterville, CA				
	Sustain III Bolus		98D-01549	
		Sulfamethazine, g/bolus	31.60000	32.1
	Agripharm Oxy-Mycin 200		98D-01893	
		Oxytetracycline, mg/ml	218.000	200

** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
Durvet Inc Blue Springs, MO				
	Durvet Vitamins and Electrolytes Vitamin A, I.U./lb		98D-01449 5740000	5000000
	Durvet A-D Injection Vitamin A, I.U./mL		98D-08050 563000	500000
Elanco Animal Health Indianapolis, IN				
	Tylan 50 Injection Tylosin, mg/ml		98D-02804 47.000	50
	Tylan 200 Injection Tylosin, mg/ml		98D-04443 218.000	200
	Tylan 50 Injection Tylosin, mg/ml		98D-08051 48.600	50
Fermenta Animal Health Company Kansas City, MO				
	Atgard Swine Wormer (Dichlorvos) Dichlorvos, gm/packet		98D-02329 10.80	11.5
Fort Dodge Animal Health Fort Dodge, IA				
	Aureomycin Chlortetracycline, g/lb		98D-00513 68.750	64
	Aureomycin Soluble Powder Concentrate Chlortetracycline, g/181.4g pkg		98D-01451 26.300	25.6
	Aureomycin CTC Soluble Powder Chlortetracycline, g/lb		98D-01589 25.900	25
	Hog and Cattle Vitamins and Electrolytes Vitamin A, I.U./lb		98D-02807 4893000	5000000
Hartz Mountain Corp Secaucus, NJ				
	Hartz Once-a-month Wormer for Dogs Piperazine, mg/capsule		98D-00567 77.000	80
	Hartz Health Measures Liquid Wormer Piperazine, mg/5 mL		98D-02014 251.000	250
	Hartz Liquid Wormer Piperazine, mg/5 mL		98D-09613 253.500	250

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
Imu-Tek Animal Health Inc Ft. Collins, CO				
	Imu-Tek Kick Start Electrolytes and Energy		98D-09194	
		Ash, %	8.89	12
		Fat: Acid Hydrolysis, %	14.55	15
		Crude Protein, %	18.10	18
		Vitamin A, IU/lb	2078000	50000
Loveland Industries Inc Greeley, CO				
	NFZ Wound Dressing		98D-02567	
		Nitrofurazone, %	0.184	0.2
Merck & Co. c/o Merial, LTD. Iselin, NJ				
	Corid 20% Soluble Powder Coccidiostat		98D-00975	
		Amprolium, %	19.8000	20
	CORID (Amprolium) Soluble Powder		98D-01550	
		Amprolium, %	19.9500	20
	Corid (Amprolium) 20% Soluble Powder		98D-01588	
		Amprolium, %	20.1000	20
Milk Specialties Company Dundee, IL				
	Advance Arrest Electrolyte/Energy Supplement		98D-02327	
		Dextrose, %	47.29	33
		Sodium, %	1.80	2
North American Animal Health Lee's Summit, MO				
	LA-200		98D-08834	
		Oxytetracycline, mg/ml	210.000	200
Pfizer Animal Health Lee's Summit, MO				
	Terramycin Soluble Powder		98D-00138	
		Oxytetracycline, g/packet	10.550	10
	Terramycin Soluble Powder		98D-01424	
		Oxytetracycline, g/181.4g pkg	10.850	10
	Terramycin Soluble Powder		98D-01450	
		Oxytetracycline, g/181.4g pkg	10.900	10
	Pfi-Pen G Antibiotic Pfizer		98D-02806	
		Penicillin, IU/ml	291000.00	300000
	Terramycin Soluble Powder		98D-03204	
		Oxytetracycline, g/pkg	9.590	10

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim
	Terramycin Soluble Powder		98D-03426	
		Oxytetracycline, g/pkg	9.080	10
	Pet Tinic		98D-05024	
		Copper, mcg/5ml	255.00	220
		Iron, mg/5ml	15.50	14.1
	Primor 240		98D-05025	
		Ormetoprim, mg/tablet	39.9500	40
		Sulfadimethoxine, mg/tablet	190.500	200
	Entrolyte H.E.		98D-06121	
		Dicalcium Phosphate, grams/packet	1.27	1.33
		Glucose Monohydrate, grams/packet	154.00	152
		Glycine - Total, grams/packet	5.120	4.72
		Magnesium Sulfate, grams/packet	0.75	0.76
		Net Weight, grams	182.40	178
		Potassium Chloride, grams/packet	3.55	3.6
		Sodium Bicarbonate, grams/packet	11.18	12.75
		Sodium Chloride, grams/packet	2.93	2.84
	Liquamycin LA-200		98D-06954	
		Oxytetracycline, mg/ml	205.000	200
	Terramycin Soluble Powder		98D-09193	
		Oxytetracycline, g/pkg	9.405	10
	Terramycin Soluble Powder		98D-09563	
		Oxytetracycline, g/pkg	9.380	10
Premier Farmtech Kansas City, MO				
	Tamed Iodine Wound Spray		98D-00974	
		Titrateable Iodine, %	2.26	2.44
Rhone Merieux, Inc. Athens, GA				
	Sustain III Antibacterial Sulfamethazine Sustained Release		98D-06998	
		Sulfamethazine, g/bolus	30.80000	32.1
RX Veterinary Products Porterville, CA				
	Iodine Wound Spray 1%		98D-02328	
		Titrateable Iodine, %	0.98	1
	Sulfadimethoxine Soluble Powder		98D-02483	
		Sulfadimethoxine, g/pkg	90.750	94.6
	Suprasulfa III		98D-03448	
		Sulfamethazine, g/bolus	31.30000	32.1

*** = Misbranded

Manufacturer Location	Product	Analyte	Found	Claim	
Solvay Animal Health/Fort Dodge Labs Fort Dodge, IA					
	Vitamins & Electrolytes Soluble for Poultry		98D-01571		
	Vitamin A, I.U./lb		5890000	5000000	
	** Vitamin T.E.A.M. Vitamins with Trace Electrolytes & Min		98D-01855		
	Vitamin A, I.U./lb		<u>8000000</u>	10000000	DEFICIENT
	Vetisalid Boluses Sulfachlorpyridazine		98D-03458		
	Sulfachlorpyridazine, g/bolus		1.92	2	
TRC Animal Health Phoenix, AZ					
	TRC Rotectin		98D-09562		
	Pyrantel Base, mg/mL		190.00	180	
Universal Cooperatives Inc Minneapolis, MN					
	** Iodine Tincture 7% Antiseptic/Disinfectant		98D-02566		
	Titrateable Iodine, %		<u>4.66</u>	7	DEFICIENT

** = Misbranded

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.

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, and
 - 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.

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

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

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

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.

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, 1998 - December 31, 1998

Total samples analyzed for weed seed contamination: 23

Number of samples analyzed reported as PASSED: 18

Number of samples analyzed reported NOT PASSED: 5

Percent of samples reported NOT PASSED: 22%

Number of samples actually containing weed seeds: 14

Number of samples containing no weed seeds: 9

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 for cattle, horses, sheep	3	0	--
Screenings	4	1	25%
Customer formula feeds	8	1	13%
Wild bird, poultry, emu feed	7	3	43%
Other (range block)	1	0	--

In 1997 we analyzed 54 samples for weed seed contamination and reported 11 samples as NOT PASSED, a 20% non-compliance rate. Since 1989 we have analyzed approximately 423 samples for weed seeds, reporting about 85 of them as NOT PASSED, for a non-compliance rate of about 20% during that time period.

WEED SEED ANALYSIS OF COMMERCIAL FEEDS

Commercial Feeds Sampled Jan. 1, 1998 - Dec. 31, 1998

* 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.

Ag Pro Coop

Gordon, NE

All American Show Flake Horse Passed
Found: Field pennycress 1/lb*

Hen Scratch Not Passed
Found: Field bindweed 3/lb, one Field bindweed germinated

American Agco

S. St. Paul, MN

Nature's Seasons Premium Wild Bird Food Passed
Found: Wild mustard 9/lb
Less than 4.5 restricted seeds per pound germinated

Cenex Land O'Lakes

Dell Rapids, SD

Custom Mixed Feed Passed
None found

Corona Grain & Feed

Corona, SD

Corn Screenings Passed
None Found

Country General

Grand Island, NE

39% Range Block Passed
None Found

Dakota Mill & Grain

Philip, SD

Custom Mixed Feed Passed
None Found

Essential Vitality

Rapid City, SD

Equiphase for All Horses Passed
None found

Farmers Coop Company

Brookings, SD

Wheat Screenings Passed
Found: Wild oat 5/lb, only 2 Wild oat seeds germinated

Gutwein & Co.

Francesville, IN

Morning Song Goldfinch Treat Wild Bird Food

Found: Wild mustard 51/lb

5 Wild mustard germinated

Not Passed**Harvest States Coop**

Milbank, SD

Custom Mixed Feed

None Found

Passed

Harvest States / GTA Feeds

Sioux Falls, SD

Equis Sweet Grains

Found: Wild oat 16/lb, only 4 Wild oat germinated

Passed

Hayti Farmers Elevator

Hayti, SD

Custom Buffalo Feed

Found: Wild mustard 54/lb, Field bindweed 9/lb

No seeds germinated

Passed

Midwest Coop

Onida, SD

Custom Mixed Feed

Found: Wild mustard 18/lb

Passed

Minnkota Farmers Coop

Baltic, SD

Custom Mixed Beef Feed

None Found

Passed

New Underwood Grain

New Underwood, SD

Chicken Scratch

Found: Field bindweed 14/lb, Field Pennycress 3/lb, Wild oat 3/lb

2 Field bindweed, 2 Field pennycress and 2 Wild oats germinated

Not Passed

Custom Mixed Feed

Found: Wild oat 4/lb*

Passed

Purina Mills

Aberdeen, SD

Custom Horse Mix

Found: Field bindweed 15/lb, Wild oat 5/lb

1 Field bindweed & 3 Wild oats germinated

Not Passed**Rancher Feed & Seed**

Buffalo Gap, SD

Hen Feed

Found: Wild mustard 2/lb*

Passed

South Dakota Wheat Growers

Bristol, SD

Wheat Screenings

Found: Wild oat 9/lb, Wild mustard 5/lb
9 Wild oats germinated

Not Passed

Terra Distribution

Tea, SD

Corn Screenings

None Found

Passed

Wagner Bros. Feed Corp.

Farmingdale, NY

Select Finch Blend

Found: Wild oat 3/lb, Indian mustard 6/lb
No seeds germinated

Passed

West Plains Grain

Oelrichs, SD

Custom Mixed Emu Finisher

None Found

Passed

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 though the 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 is 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.

Issuing Office: South Dakota Department of Agriculture
Office of Agronomy Services

Issue Date: October 21, 1991

Review Date: October 14, 1999

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, 1998 - December 31, 1998

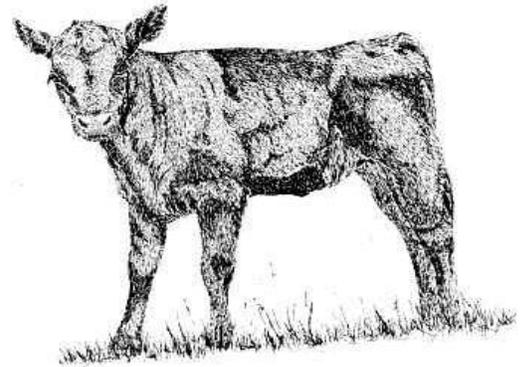
<u>Lab number</u>	<u>Manufacturer</u>	<u>Claim (ppm)</u>	<u>Found (ppm)</u>	<u>Not passed (NP)</u>
98F-00438	Land O'Lakes	0.800	2.85	
98F-00944	Kay Dee Feed Co.	28.0	30.2	
98F-00973	Hubbard Feeds	20.0	28.6	
98F-01545	Hubbard Feeds	5.00	5.46	
98F-01848	Farmland Industries	22.0	21.8	
98F-01951	Harvest States	35.0	42.2	
98F-02199	Muellers Feed Mill	22.0	0.422	Deficient
98F-02259	Consolidated Nutrition LC	20.0	19.8	
98F-02263	Zip Feed Mills	35.0	29.4	
98F-02679	Cargill-Nutrena Feeds	30.0	27.8	
98F-02687	Zip Feed Mills	35.0	32.8	
98F-03691	Zip Feed Mills	35.0	34.75	
98F-04152	Golden Sun Feeds	22.2	22.8	
98F-04165	Moorman Manufacturing	39.0	42.9	
98F-04166	Moorman Manufacturing	0.300	0.555	
98F-05146	Harvest States	8.0	5.843	
98F-05898	Harvest States	35.0	27.2	
98F-06266	Harvest States	17.0	15.6	
98F-06345	Zip Feed Mills	35.0	37.9	
98F-06352	Land O'Lakes	15.0	16.0	
98F-06354	Land O'Lakes	6.00	6.84	
98F-06501	Harvest States	35.0	39.0	
98F-06945	Hubbard Feeds	20.0	16.95	
98F-06951	Golden Sun Feeds	22.2	20.5	
98F-08828	Farmland Industries	22.0	25.4	
98F-08894	New Generation Feeds	6.60	5.44	
98F-08895	Vigortone Ag Products	26.4	25.5	
98F-08898	Harvest States	17.0	19.8	
98F-08902	Golden Sun Feeds	30.0	30.8	
98F-09612	Hubbard Feeds	4.40	4.66	
98F-09668	Sioux Nation Ag Center	8.00	10.1	

During 1998, 31 samples were analyzed for selenium, with only 1 samples reported NOT PASSED, a 97% compliance rate. In the five years prior to 1998 we analyzed 262 samples for selenium, reporting 236 PASSED and 26 NOT PASSED, a 90% compliance rate.

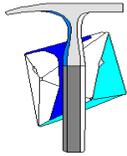
The analytical variation (AV) established by AAFCO for selenium is 25%. Although selenium is required to be guaranteed as a minimum, we may also report a sample as containing excessive selenium if it is more than 25% higher than the guarantee and, when fed according to directions on the product label, 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.

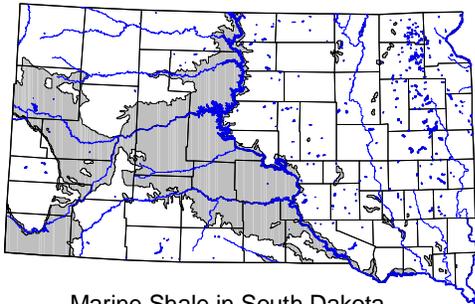
SELENIUM EFFECTS ON SOUTH DAKOTA LIVESTOCK PRODUCTION



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.

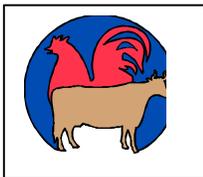


Marine Shale in South Dakota

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 (*Astragalus 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 orthophosphate, 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.

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.

- *Labeling*
- *Equipment cleanout*
- *Ingredients from single species slaughter facilities*
- *Recordkeeping*
- *Livestock producers*
- *Questions*

On June 5, 1997, the Food & Drug Administration (FDA) published a final rule (21 CFR Part 589 - Substances Prohibited From Use in Animal Food or Feed; Animal Proteins Prohibited in Ruminant Feed) 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 Department of Agriculture at 605-773-4432 or the Food and Drug Administration (FDA) at 301-594-1724.

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