Severity and Probability Charts for Animal Food Safety Hazards
Developed by Office of the Texas State Chemist
(Subject to frequent updates)

Table 1: Pet food biological and chemical hazard severity and probability.

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Salmonella	Biological	Animal Protein	High	0.33	627
	Biological	Fish Meal	High	0.90	234
	Biological	Plant Protein	High		
	Biological	Finished Product	High	0.01 0.092	1086 1086
BSE	Biological	Feather meal	High	0.07	30
Aflatoxins	Chemical	Corn	High		
		Plant Protein	High		
		Corn & Plant Protein		0.006	1769
Fumonisin	Chemical	Corn and corn by-products	High	0	188
Deoxynivalenol (DON)	Chemical	Corn	High		
		Small grains	High		
		Corn & Small Grains		0	45
Nutrient Deficiency	Chemical	Thiamine	High		0
Nutrient toxicity	Chemical	Vitamin D and D3	Moderate	0.01	526

Table 2: Low Acid Canned Food (LACF) for Dog and Cat Food Manufacturers

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Nutrient deficiency or toxicity	Chemical	Vitamin premix	High		
Drug residue- Na pentobarbital	Chemical	Meat. fat, organs	High		
Metal, wood, plastic, glass	Physical	Incoming material	High		

Table 3: Dog and Cat Food Not Heat processed

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Salmonella	Biological		High	0.52	31
Listeria Monocytogenes	Biological		High	0.52	31
E. Coli				0.00	2
BSE	Biological		High		
Nutrient deficiency or toxicity	Chemical				
Heavy Metals	Chemical		High		
Drug residue- Na pentobarbital	Chemical	Meat. fat, organs	High		

Table 4: Rendered product biological and chemical hazard severity and probability.

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Salmonella	Biological	Animal	High	36.6	528
	Biological	Fish Meal	High	33.1	164
Listeria Mono	Biological	Animal	High	0	170
	Biological	Fish Meal	High	0	92
E. coli	Biological	Animal	High	0	12
	Biological	Fish Meal	High	0	8
Prohibited animal protein	Biological	Fish Meal	Moderate	0	4
Toxin Screen GC-MS	Chemical	Animal and fish	High	0	50
Arsenic	Heavy Metal	Animal and fish	High	0	50
Cadmium	Heavy Metal	Animal and fish	High	0	50
Selenium	Heavy Metal	Animal and fish	Moderate	8	23
PCB & Dioxins	Industrial contaminant	Animal	High	10	9
PCB & Dioxins	Industrial contaminant	Fish	High	3	190
Calcium	Macro-mineral	Animal	Low	31.8	475
		Fish	Low	26.8	150
Phosphorus		Animal and fish	Low	2	204
Drug residue- Na pentobarbital	Chemical	Meat. fat, organs	High		

Table 5: livestock feed (medicated and non-medicated)

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Aflatoxin	Chemical	Plant protein	High		
		Corn	High		
		Mill streams	High		
		Corn, Plant Protein, & Mill Streams -Dairy Cattle		0.05	588
Fumonisins	Chemical	Corn	High		
		Corn-Horse Feeds		0.10	152
		Corn-Rabbit Feeds		0.04	78
Deoxynivalenol (DON)	Chemical	Small grains-All Livestock Feed	Moderate	0	111
Nutrient toxicity	Copper	Premix	High - sheep	0.07	1203
	Copper	Sheep		0.22	104
	Cu:Mo ratio	Ruminants			
	Sulfur	DDGS	Moderate in cattle feed	0.004	464
	Sulfur	Sulfur-Cattle Feed		0.000	269
Animal drug	Chemical	Monensin – Horse Feeds	High	0	106
Animal Drug	Chemical	Na pentobarbital			

Table 6: Animal supplements biological and chemical hazard severity and probability.

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Salmonella	Biological	Animal Protein	High	36.6	528
	Biological	Fish Meal	High	33.1	164
	Biological	Plant Protein	High		
Nutrient deficiency	Chemical				

Table 7: Premix feed biological and chemical hazard severity and probability.

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Nutrient deficiency	Chemical	Copper	High	0.007	1203
	Chemical		High		
Nutrient toxicity	Chemical		High	22.2	27
Dioxin	Chemical	Dioxin		0.04	353
Heavy Metals	Chemical	Arsenic		8.8	421
		Cadmium		34.0	421
		Copper		18.0	277
		Mercury			
		Lead			
		Selenium			
		Molybdenum			

Table 8: Distillers products biological and chemical hazard severity and probability.

Hazard	Hazard Type	Source	Severity	Probability %	# Samples
Salmonella	Biological	DDGS	High	0.02	235
BSE	Biological	Prohibited Animal Protein	High	0.011	281
Aflatoxins	Chemical	Aflatoxin	High	0.008	732
Fumonisin		DDGS		0.32	475
Nutrient toxicity		Sulfur		0.004	464