Pet Food Recalls and Pet Food Contaminants in Small Animals

Karyn Bischoff, DVM, MS[a,b,*], Wilson K. Rumbeiha, BVM, PhD[c]

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• Thiamine • Vitamin B_1 • Vitamin D

Most pet foods are safe. Only 1.7% of reported poisonings in dogs and cats have been attributed to pet foods.[1] Incidents of contamination occur through microbial action, mixing error, or intentional adulteration. Although rare, the effects of pet food contamination can be physically devastating for companion animals and emotionally devastating and financially burdensome for their owners. Whereas most people consume a diet from various sources, for companion animals a single bag of food or cans from a single brand/lot will likely be the major or sole source of nutrition until that food has been completely consumed. Thus, the effects of food contaminants in people is diluted by the varied diet, but the uniform diet of most dogs and cats, although preferred for nutritional reasons, increases the risk of adverse effects if a contaminant is present in their food. As the companion animal veterinarian is aware, many animal owners consider their dog or cat to be a vulnerable family member that needs to be protected.[2] Based on the authors' experiences, pet owners often experience seemingly disproportionate guilt when pets become sickened or die after being unknowingly fed contaminated pet foods. Some owners have described feeling responsible for poisoning their pet during pet food contamination incidents.

When pet food is contaminated or adulterated there is usually a food recall. There are 3 types of recalls involving chemical contaminants: Class I—reasonable probability that the contaminated food will cause adverse health consequences or death; Class II—the contaminated food can cause temporary or medically reversible adverse

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[a] New York State Animal Health Diagnostic Center, PO Box 5786, Room A2, 232, Ithaca, NY 13081, USA
[b] Department of Population Medicine and Diagnostic Sciences, Cornell University, PO Box 5786, Room A2 232, Ithaca, NY 14853-5786, USA
[c] Veterinary Diagnostics and Production Animal Medicine, College of Veterinary Medicine, Iowa State University, 2659 Vet Med, Ames, IA 50011, USA
* Corresponding author. Department of Population Medicine and Diagnostic Sciences, Cornell University, PO Box 5786, Room A2 232, Ithaca, NY 14853-5786.
E-mail address: KLB72@cornell.edu

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health consequences but is unlikely to cause serious adverse health effects; and Class III—the contaminated food is unlikely to cause adverse health consequences. There were 22 Class I and II pet food recalls in the United States over a 12-year period (1996 to 2008), and 6 were due to chemical contaminants.[3] Of these 6, 2 were due to aflatoxin (a mycotoxin), 3 were due to feed mixing or formulation errors (2 excess vitamin D_3 and 1 excess methionine), and 1 was due to adulteration of food ingredients with melamine and related compounds.[3]

Since 2008, there have been 3 cat foods and 1 dog food recalled due to mixing or formulation errors (inadequate thiamine in the cat foods, excessive vitamin D_3 in the dog food) and 1 dog and cat food recall due to contamination with aflatoxin. There have also been 2 US Food and Drug Administration (FDA) warnings and one from the Canadian Veterinary Medical Association since 2007 concerning a Fanconi-like renal syndrome in dogs after ingestion of large amounts of chicken jerky treat products, manufactured in China, over time.[4,5] Similar warnings have occurred in Australia.[6] Despite extensive testing, the cause of the adverse health effects (Fanconi-like syndrome) associated with consumption of chicken jerky has not been determined.

Pet food contamination incidents due to adulteration are rare but occurred with melamine and cyanuric acid. The melamine contamination investigation in 2007 led to the discovery that other cases of melamine poisoning had happened in companion and agricultural animals in the Republic of Korea, Japan, Thailand, Malaysia, Singapore, Taiwan, the Philippines, South Africa, Spain, China, and Italy.[7–11]

There have been several other international pet food contamination incidents. Aflatoxin contamination of dog food has been mentioned in news stories from South Africa and Israel since 2006. The use of sulfur dioxide, which destroys thiamine, in processing pet foods has been associated with repeated outbreaks of polioencephalomalacia in dogs and cats in Australia.[12–14] Also in Australia, there was a unique recall of irradiated cat food in 2008–2009, after it was found to cause severe central nervous system damage to cats. The proximate cause of the neurological disorder that afflicted cats fed irradiated pet food in Australia has not been determined to date.

The FDA is charged with ensuring the wholesomeness of pet foods. The US Congress passed the FDA Amendments Act of 2007 (FDAAA) to improve responsiveness to contamination of pet foods and other products after the adulteration of pet food with melamine and related compounds was identified that year. The FDAAA requires manufacturers to report incidents of possible contamination to the FDA within 24 hours, investigate the cause, and report findings of the investigation. When contamination is confirmed, the pet food is recalled. Recall initiation is usually voluntary by the manufacturer at the request of the FDA. The FDA can secure a court order to issue a recall if the manufacturer is reluctant, but this is rare because of the bad publicity and increased potential for litigation should a manufacturer refuse to initiate a recall.[1]

Veterinarians must be involved for the FDAAA to work properly. This involves examining and treating animals that are suspected to have had adverse effects from pet foods, documenting pertinent findings, collecting appropriate samples, advising pet owners, and contacting the FDA and pet food manufacturers. Samples for laboratory analysis include the suspected food and its packaging (or, if unavailable, lot numbers, manufacturing codes, and other identifying information), and samples from the pet such as blood, serum, urine, vomitus or gastric lavage fluids, and feces. A full necropsy with postmortem sample collection for histopathology and analytical chemistry includes fresh urine, adipose tissue, and heart blood, fresh and fixed brain, liver, and kidney, and fixed lung, spleen, and bone marrow. These samples are often