

MOLD POISONING/AFLATOXICOSIS

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Recently in the news there have been reports from the eastern U.S. regarding mold contamination in the Diamond pet food company's dog and cat food. Nineteen different varieties of food are involved with three different brand labels which include Diamond, Professional, and Country Value. The foods were contaminated before December 10th of 05 with mold and mold toxins originating from corn. According to the recall data a 'G' is present in the 11th or 12th digit in the product batch serial code number. This stands for Gaston. Gaston is the plant where the contaminated food was produced. The food was distributed in 22 east coastal states, but not in our area. It is a sad story, as of Monday 1/9/06 there have been the reports of 76 dogs that have died from aflatoxicosis.

So what is this disease called aflatoxicosis? Aflatoxins are toxic chemicals that naturally form when certain fungi/molds grow on grains like corn, seeds, and peanuts. The fungi come from the genus *Aspergillus*, and the species in this food poisoning incident comes from the *flavus* group. Grains can get moldy while still in the field depending on the growing conditions. They can also become moldy during harvest, or more commonly get mold growth during storage. Fungi of the genus *Aspergillus* are all common soil saprophytes, which mean that they are normal inhabitants of the soil. Fungi can be very useful, as the antibiotic penicillin is made from a fungus growing in the soil. The fungi that create aflatoxins are not useful at all, and are very dangerous when they have grown in food. These fungi can colonize the grains, and then multiply when the proper growth conditions occur. This would include excessive humidity/moisture, cooler or warmer temperatures, and a lack of adequate air flow quality, creating a stagnant situation where molds love to grow. The presence of the mold, in the corn does not necessarily mean that there is toxin there also. The proper conditions must be there to have the fungi create the toxins. The mold uses the sugars in the grain as food sources just like any other mold will grow on breads. When the mold matures and begins to flourish it produces a by product toxic chemical. These chemicals are far and beyond among the most poisonous compounds known to man.

Grain products destined for food obviously must not be contaminated with any of this fungus, or the mold aflatoxins. Only a very small microtrace amount of the toxin is necessary to sicken animals and humans. Food grains are commonly batch tested to prevent any contaminated products from getting into edible foods. The FDA has set a limit that less than 20 parts per billion of the toxin be allowed in any foodstuff.

Unfortunately, as all things go, there still have been many occurrences of aflatoxins not being detected, or even more rarely they are not being tested for at all. There are all kinds of stories, such as a load of corn being rejected at one grain elevator, and then sold cheaply to a pet food processor where ultimately the contaminated corn makes it into the finished product, along with too much of the aflatoxin. We cannot see, smell, or taste these aflatoxins in the food, and there is no moldy appearance to the product either.

Aflatoxins cause severe damage to the body, the main organs affected are the gastrointestinal system and the liver. Symptoms can include vomiting, profuse bloody diarrhea, excessive thirst and urine production, rapid decline, lethargy, lack of appetite, and jaundice, which is a yellowing of the skin, gums, and whites of the eyes. There may even be little bruises on the gums and whites of the eyes where little blood vessels leak, due to poor blood clotting. This jaundice occurs from bile pigments that accumulate in the blood when the liver fails. There is usually a normal body temperature and the white blood cell count is normal, so infection is easier to rule out, and veterinarians then suspect some type of toxicity is at hand. Animals and people often die horrible toxic deaths from the liver failure caused by these poison aflatoxins. There is no specific treatment that can ensure survival when the body is poisoned by these toxins. Veterinarians try very hard to support these beloved pets, with fluids, and medicines to counter the damage that has been done, and the body must then do the repair, which can take an agonizingly long time. If the animals do survive they are often left with a severely compromised liver which never functions effectively after the poisoning. Holistic veterinarians will also offer additional medicines to try to strengthen the body to heal itself, but unfortunately even these treatments are often unrewarding.

One interesting note is that if a very small amount of aflatoxin is ingested over a long period of time rather than causing liver failure all at once, it can cause a sub clinical, chronic liver damage (fibrosis) which can lead to a higher incidence of liver cancer, and chronic liver failure years later. Naturally corn and peanut products again are the most often incriminated grains. It is usually the very inexpensive brands of foods that seem to be represented the most often. Peanut butter can carry a very small amount of difficult to detect aflatoxin in it. Peanuts of course come right out of the soil, and therefore can be more apt to be contaminated if the conditions are right with *Aspergillus flavus* fungi. People who eat a large amount of peanut butter over a long period of time can and do have a higher incidence of bile duct, and liver cancer directly attributable to aflatoxicosis.