

SALMONELLA

By Leslie Manis, Health/Genetics Chairman, ASTC

[Every effort has been made to ensure accuracy of information. However, this is not a substitute for prompt veterinary care. Any similarity to other publications is unintentional. Published online at Sealyhealthguard.org, 11/29/10]

Given the 2010 peanut butter product recall, I thought the subject of *Salmonella* should be revisited. When I last wrote about it, several sources claimed that dogs were not susceptible to infection by this bacterium, but that does not seem to be the case.

The outbreak has been linked to a large processing plant operated by the Peanut Corporation of America. Peanut products from the plant found their way into well over 1000 different items, prompting possibly the largest and most complicated food recall in US history. To date, there are 642 reported cases of illness in 44 states.

Illness from *Salmonella* is characterized by diarrhea, fever, abdominal cramps and sometimes vomiting. It has an incubation period of 12-72 hours and lasts 4-7 days. It usually resolves without treatment other than extra fluids. In the young, elderly or immunosuppressed, the bacteria can spread from the intestine to the bloodstream then travel to other parts of the body.

Hospitalization and treatment with antibiotics are then required. The stool must be tested to confirm diagnosis.

Salmonella enterica is a group of bacteria consisting of many kinds or serotypes. *Salmonella* serotype *Typhimurium* and *Salmonella* serotype Enteritidis are the most common serotypes in the US. The CDC states there are about 40,000 cases of salmonellosis in the US per year, with about 400 deaths. This is approximate, as many cases go unreported. There are many other causes of gastroenteritis such as *listeria monocytogenes*, *E. coli* 0157:H7, *Campylobacter*, and viruses, including five types of Norovirus, rotaviruses, sapovirus and adenovirus. Some of these are from contaminated food, or from food handlers.

Salmonella has become very prevalent in the environment, with intense animal husbandry practices, contamination in animal feed, during meat processing. It can enter plants through the root systems, be on the surface of flowers then form on the fruit, it can grow on cut tomatoes and melons, on fresh produce moisturized during retail display at ambient temperatures.

The USDA's Hazard Analysis and Critical Control Point (HACCP), implemented in 1996, has shown that slaughter plant cleanliness and environmental testing (of the plant and equipment, chicken rinse water) can dramatically reduce the number of incidents of *Salmonella* in meats. A similar example of this cleanliness and prevention is Lance peanut butter crackers and snacks. They are not part of the recall and have not had any incidents of food contamination in 37 years. They have a strict, in-depth QC program, including testing hundreds of environmental swabs of their facility per week.

Dogs and cats can also become ill from *Salmonella*, with diarrhea that may contain blood or mucus. The pet may seem more lethargic, have a fever or vomit. Some pets can have

Salmonella but not appear to be sick. As with humans, most pets will recover with extra fluids. A few will need hospitalization and antibiotics.

The bacterium can be shed in the stool of pets for 4-6 weeks after infection.

A 3-year-old mixed breed in southern Oregon got sick late last month after eating one of the dog treats listed in the recent peanut butter recall, Happy Tails multi-flavored dog biscuits. The dog biscuits he ate and the dog's stool were tested and confirmed positive for *Salmonella*. The dog, who is now recovering, lives in a household with three other dogs. Perhaps not all of the "multi-flavored" treats were tainted, or the other dogs weren't as susceptible.

Dr. Ian Billingham suggests that *Salmonella* and other pathogens are rendered harmless by the uniquely adapted canine intestinal tract. No reports documenting clinical salmonellosis in dogs fed a BARF diet have been published, though *Salmonella* are well-described pathogens in dogs.

The prevalence of *Salmonella* in raw chicken has been thoroughly documented. I found one small study involving 20 dogs that studied the risk of *Salmonella* infection in dogs fed raw chicken diets. Ten dogs were fed a commercial dry dog food and 10 were fed a BARF diet. The sets of dogs were fed the designated food for at least 2 months, then one meal-sized sample of food and one fresh stool sample were collected from each test subject by the owners and submitted to the investigators.

All food and stool samples from the dogs eating the dry dog food were negative for *Salmonella*. Eight out of ten of the BARF diet samples tested positive for *Salmonella*. Three of the dogs eating the BARF diet had positive stool cultures for *Salmonella*: one dog's stool sample contained the same serotype as the one isolated from its food, one dog had a different serotype of *Salmonella* than its food did, and one dog had *Salmonella* in its stool but not its food. The stool cultures may have reflected previous dietary contamination or contamination from another source in the environment.

Larger numbers of dogs or multiple stool samples from each dog might give more statistically significant information. At the very least, it shows that much care should be used when using a BARF diet in handling the food, dog bowls, the dog's mouth. Yard waste should be promptly picked up and carefully disposed of, especially with children, the elderly or immunocompromised adults.

Maybe not all dogs can become sick from *Salmonella*, but don't assume dogs can eat anything, either.

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