



Tips for preventing food recalls caused by Salmonella contamination

Introduction

Recently there have been many media stories on food recalls, but how do recalls affect the pet food industry? Product recalls not only affect the short term economy of the pet food sector, but the recall also affects the reputation of the business and the industry over the long term. This factsheet is intended to provide awareness of salmonella contamination and tips to reduce the risk during the manufacturing of pet food.



What is *Salmonella*?

Salmonella is a bacterium that is able to survive under both anaerobic and aerobic environments. Some types of *Salmonella* can survive under harsh environments and long periods of time. Almost all species of *Salmonella* are potentially disease-causing bacteria. *Salmonellae* commonly live in the small intestine of many animals, especially

poultry and cattle (Tortora, Funke and Case, 2007).

Why it is important

Salmonella contamination also known as salmonellosis, does not only concern pet health, but also human (public) health since *Salmonella* can infect both people and animals. Animals can serve as contributors to human exposure of salmonellosis (Wilson & Hooser, 2012). Although pet food products are generally safe and the incidence of contamination rare, there are still incidents of foodborne illness in dogs and cats (Wilson & Hooser, 2012). This is a key area of food safety awareness for manufacturers.

Relevance to pet health

Younger and elderly animals are more susceptible to salmonellosis. During the growth stage of puppies and kittens, adequate amounts of nutrients are needed for healthy growth. Salmonellosis will prevent the animals from obtaining adequate nutrients, resulting in a smaller body size than a healthy pet. Severe cases of salmonellosis in both the younger and elderly pets can be fatal.

Relevance to public health

, *Salmonella* can infect both human and animals. Some animals do not show any symptoms of salmonellosis.

Those animals become *Salmonella* carriers and are shedding *Salmonella* via their feces, which can then infect humans.

Behravesh et al (2009) found an association between human *Salmonella* infections and contaminated dry dog and cat food, with 48% of the patients being children aged two years or younger, who do not have strong immune systems.

Relevance to the manufacturing business

Food recalls and contamination may happen in any food industry. In the pet food industry, a manufacturer can face pet food recalls.

The business problems created due to *Salmonella* contamination are a loss of product sales and damage to the reputation of the manufacturer. There is always the potential for manufacturers to be sued by consumers if a recall is issued after the product is consumed. It is difficult to build a good brand or company reputation, but it is easy to change a good reputation into a bad reputation due to a foodborne illness outbreak. For example, a pet food recall due to melamine contamination in 2007 totalled \$24 million which included a refund to consumers as well as legal fees and expenses such as claims administrations and public notice (Lau, 2011).

Another cost of the business would be lost product sales and the disposal of the recalled

products. Recalled products are not resold or given away, but they might be sent to the land-fill. This adds environmental costs, as a large area is required and that land potentially could not be used for a long time.

Possible contamination points

There are several possible contamination points during manufacturing:

- the raw ingredients
- the grinding process
- the extruding process
- the point of packaging

There are several other points that could cause product contamination. For example, workers in the factories can carry *Salmonella* from outside the plant into the plant and contaminate ingredients or final products.

Food contamination not only comes from contaminated ingredients or workers. Insects such as flies can be carriers of *Salmonella*. Flies get into the facilities and transfer *Salmonella* to raw ingredients or final products.

How to prevent contamination

Manufacturers can take many precautions to prevent *Salmonella* contamination. A well-known procedure is the Hazard Analysis Critical Control Point (HACCP). HACCP has seven principles (CFIA, 2012).

- Principle 1: hazard analysis
- Principle 2: identifying critical control points
- Principle 3: establishing critical limits for each critical control point

- Principle 4: establishing monitoring procedures for critical control points
- Principle 5: establishing corrective actions
- Principle 6: establishing verification procedures
- Principle 7: record keeping

It is important to have sanitation, movement processes and procedure of sanitation for workers in place. Established reporting systems are also a good idea.

For pest control, Belda et al (2011) reported pheromone traps and barriers such as double doors within the production area work well.

For more information on setting up your HACCP plan check out Alberta Agriculture and Rural Development's "Alberta HACCP Advantage" program at:

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs9851](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs9851) or the Canadian Food Inspection Agency's resources at: <http://www.inspection.gc.ca/food/fsep-haccp/eng/1299855874288/1299859914238>.

Recommendations

Most dry pet food manufactures can establish and follow HACCP procedures. It is a basic and typically effective process which includes:

- Sanitising machinery regularly
- Ensuring that workers move in one direction only starting from a clean area and moving to dirty area, not the opposite way.
- Establishing standard operating procedures.

- Training workers to inform their manager as soon as possible, since mistakes sometimes do occur.
- Adding instructions to packaging on how to store and handle the product, with a warning that if not handled properly contamination and potential foodborne illness could occur in the pet.
- Establishing a food recall plan and a communication strategy for the eventuality of a recall to handle quick response to the public.

Freezing will not kill any of the bacteria. It is important to follow food safety practices when handling the raw ingredients. If you are a manufacturer of raw pet food contact your ARD Food Safety Program for recommended best practices on mitigating risks of salmonella contamination.

Conclusion

For manufacturers, it is important to reduce the incidence of contamination. Once contamination has occurred, it is crucial to recall the product as soon as possible. If contaminated pet food is sold, announcing the contamination and recall to the public is crucial.

References

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