

Pathogen Reduction in Pet Treats and Animal Nutrition: Separating Fact from Fiction

As consumer expectations and regulatory scrutiny continue to rise, pet food and animal nutrition manufacturers are increasingly focused on product safety, quality, and shelf stability. One of the most effective tools available for pathogen reduction is gamma irradiation—a proven technology that helps reduce harmful microorganisms while maintaining product integrity.

Yet despite decades of successful use, questions and misconceptions about irradiation remain common throughout the industry. Below, we address some of the most frequently asked questions and explain why many manufacturers rely on gamma irradiation as part of their food safety strategy.

Why Pathogen Reduction Matters

Pet treats, animal feed ingredients, and nutritional supplements can be susceptible to harmful microorganisms such as Salmonella, Listeria, and E. coli. These pathogens can impact product quality, create regulatory concerns, and pose risks to animals and handlers alike. Gamma irradiation has been shown to effectively reduce these microorganisms, helping manufacturers improve product safety and protect their brands.

What Is Gamma Irradiation?

Gamma irradiation is a non-invasive processing method that uses ionizing radiation to reduce microbial contamination. Unlike thermal treatments, products remain in their final packaging throughout the process, allowing treatment to occur without additional handling or exposure risks. The technology penetrates packaging and reaches microorganisms throughout the product, regardless of package complexity.

Myth #1

Irradiated Pet Treats Become Radioactive

One of the most common misconceptions is that irradiated products become radioactive. In reality, gamma-irradiated pet treats and animal feeds do not become radioactive. The products never come into contact with radioactive materials, and the energy source causes chemical changes—not nuclear changes—within the product. As a result, there is no residual radioactivity present after processing.

Myth #2

Irradiation Makes Pet Treats Unsafe to Consume

Scientific testing and regulatory approvals have consistently demonstrated the safety of irradiation for animal nutrition products. Testing has shown that key nutritional components—including fats, fibers, minerals, and amino acids—remain unchanged following irradiation treatments. Additionally, the FDA approved irradiation of packaged animal feeds, feed ingredients, diets, treats, and chews to help prevent microbial infection.

For manufacturers, this means they can achieve meaningful pathogen reduction while preserving the essential characteristics of their products.

Myth #3

Special Packaging Is Required

Another common concern is whether products must be repackaged before irradiation.

The answer is no. Gamma irradiation is performed with products inside their existing packaging. The process penetrates various packaging materials and geometries, making it particularly valuable for products packaged in unique or difficult-to-process formats. Because the treatment is non-invasive, manufacturers can maintain their chosen packaging designs without compromising efficacy.

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Understanding Labeling Requirements

Labeling requirements vary by region and product category. In the United States, current FDA regulations require irradiated pet foods to display the Radura symbol along with language such as “treated by irradiation” or “treated with radiation.” Manufacturers selling internationally should consult local regulatory authorities to determine specific requirements in their markets.

Beyond Pet Treats: Applications Across Animal Nutrition

Gamma irradiation is used across a broad range of animal nutrition products, including:

- Natural pet treats such as jerky, bully sticks, pig ears, and dog chews
- Animal feed ingredients
- Pet and animal supplements
- Dairy powders for feed
- Birdseed for pets and wild birds
- Animal-origin pet treat products

Additionally, laboratory animal diets often undergo sterilization processing using gamma radiation, highlighting the technology's established role in applications requiring even higher levels of microbial control.

A Safe, Cost-Effective Solution for Modern Manufacturers

Manufacturers today are challenged to balance food safety, operational efficiency, regulatory compliance, and customer expectations.

Gamma irradiation offers several advantages:

- Effective pathogen reduction
- Non-invasive processing
- Compatibility with packaged products
- No residuals left on the product after treatment
- Cost-effective processing for a wide range of animal nutrition applications

These benefits make gamma irradiation a valuable option for companies seeking to strengthen their food safety programs while maintaining product quality and operational flexibility.

Partnering for Product Safety

From product development through commercialization, pet treats and animal nutrition products face numerous safety and quality challenges. Working with experienced processing experts can help manufacturers identify the most effective pathogen reduction strategy for their unique product and packaging requirements. Sterigenics supports manufacturers with customized solutions, a global facility network, consistent processing capabilities, and technical expertise developed over decades of microbial reduction experience.

Final Thoughts

As demand for safer, higher-quality pet treats and animal nutrition products continues to grow, manufacturers need proven technologies that help reduce microbial risk without compromising product performance. Gamma irradiation has a long history of effectiveness, safety, and regulatory acceptance, making it an important tool in the industry's ongoing commitment to animal health and product quality.

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