

Get the Facts on Microbial Reduction in Food Ingredients



Introduction

Countries have been irradiating food ingredients for a lot longer than most people realize.

While most people think the irradiation process started in the last decade, the fact is that Gamma irradiation has been used for almost six decades to reduce pathogens in food ingredients thereby ensuring foods are safe for human consumption.

In the US alone, approximately 170 million pounds of spices are irradiated annually¹.

Our goal is to help food ingredients manufacturers arrive at the safest and most cost-effective solution to achieve their product goals.

We hope the facts in this eBook provide you with answers to questions that you may have about irradiation of food ingredients.

¹**SOURCE:** Food Irradiation Questions and Answers, February 2014, Food Irradiation Organization



#1 Fact OR Fiction?



Governments allow irradiated food ingredients into their countries.

Fact. While many people may think that irradiating food ingredients is a new technology, the fact is that Gamma irradiation of food ingredients has been in use since 1963.

Today, about 40 countries allow irradiated ingredients to be sold to their citizens. Furthermore, irradiation of food ingredients is endorsed by the American Medical Association (AMA), the World Health Organization (WHO), and the International Atomic Energy Agency (IAEA).

“Public health agencies worldwide have evaluated the safety of food irradiation over the last fifty years and found it to be safe.”

—USDA



SOURCE: United States Department of Agriculture (USDA), Food Safety and Inspection Services, [website](#)



#2 Fact OR Fiction?



In the USA, it's the Food and Drug Administration (FDA) that is responsible for regulating the sources of radiation that are used to irradiate food ingredients.

Fact. After it's determined that irradiating a food ingredient is safe, the FDA approves a source of radiation for the food. For example, the FDA has approved the use of Gamma to irradiate spices, herbs and seasoning to reduce microbial count. In Europe, the European Commission provides a list of Member States' authorizations of food and food ingredients that may be treated with ionizing radiation including dried aromatic herbs, spices and vegetable seasonings.



SOURCE: United States Food and Drug Administration (US FDA), Food Irradiation: [What You Need to Know](#)



#3 Fact OR Fiction?



Irradiated food ingredients are radioactive.

Fiction. Irradiated food ingredients are not radioactive. The ingredients do not touch radioactive materials, and the energy source does not and cannot cause the ingredients to become radioactive.



“In 1963, the Food and Drug Administration (FDA) found the irradiation of food to be safe.”

—USDA

SOURCE: United States Department of Agriculture (USDA), Food Safety and Inspection Services, [website](#)



#4 Fact OR Fiction?



Irradiated food ingredients are safe for consumption.

If you read the previous page, you'll know this is a **fact**. There are no radiation-related risks from consumers eating food ingredients that manufacturers have had treated by irradiation facilities located around the world.



“There is no valid scientific evidence, or plausible expectation, that consuming irradiated food would be harmful to humans. The very real benefit of this treatment technology is to increase the availability of healthy and nutritious food supplies.”

—Health Physics Society

SOURCE: Health Physics Society, [Food Irradiation Fact Sheet](#), February 2019



#5 Fact OR Fiction?



I'll need special packaging for the irradiated food ingredients.

Fiction. Special packaging is not required. Gamma irradiation is a non-invasive process (which means food is not removed from its packaging) that penetrates various types of packaging and reaches all microorganisms regardless of the intricacies of the package. Post-irradiation, there are no residuals left on the product.



#6 Fact OR Fiction?



No one will know whether my food products are irradiated or not.

Fiction. All ingestible foods must be labelled. Over the years, perception of irradiated food is changing as myths are busted. Irradiation actually signals that your brand's products are safe for consumption.



"If whole foods have been irradiated, FDA requires that the label bear the radura symbol and the phrase "treated with radiation" or "treated by irradiation."

Yet, if irradiated ingredients are added to foods that have not been irradiated, no special labeling is required on retail packages."

—US FDA

SOURCE: [Overview of Irradiation of Food and Packaging](#), U.S. Food & Drug Administration (US FDA), Section 3 Labelling)





Based on the
facts you just
read, it shouldn't
surprise you that...





NASA astronauts eat meat that has been irradiated to avoid getting foodborne illnesses when they are in outer space.

SOURCE: Health Physics Society, Food Irradiation Fact Sheet, February 2019



A little-known fact

Gamma irradiation can solve problems you didn't know you had. It pays to talk with one of our Industry Subject Matter Experts. They have years of experience and are world-class problem solvers.

Here's an example...



Sometimes, manufacturers experience unexpected problems.

One example is a food product that was intended for human consumption but testing reveals that it has an increased pathogen, yeast, mold, or fungus load.

Unfortunately, this does happen. That's when we get a call from a manufacturer asking, *"Is there anything you can do to help us? It would be a shame for all this contaminated product to go to waste."*

We ask a lot of questions. We listen to the manufacturer's answers. We listen to the manufacturer's concerns. In best-case scenarios, we reduce the microbial load using Gamma irradiation to make the product safe.

We are thrilled when this is the outcome as food does not go to waste and—bonus—manufacturers recover some of their costs.
Problem solved.



Did you
know?



Did you know

the technically accurate terms are *pathogen reduction* and *microbial reduction* for food ingredients rather than *food ingredients sterilization*?



PATHOGEN REDUCTION
for food ingredients

AND

MICROBIAL REDUCTION
for food ingredients



Did you know

that the Gamma irradiation process is **non-invasive, safe** and **cost-effective**?

Gamma irradiation is a non-invasive process (which means food is not removed from its packaging) that penetrates various types of packaging and reaches all microorganisms regardless of the intricacies of the package.

The process is cost-effective and safe as there are no residuals left by radiation, which makes Gamma irradiation ideal for pathogen reduction in food ingredients.

At Sterigenics we have decades of microbial reduction experience.

Post-irradiation, there are no residuals left on the product.



In summary, Gamma irradiation reduces pathogens in food ingredients

Gamma irradiation is a **non-invasive, safe** and **cost-effective** process to reduce the microbial load in:

SPICES & HERBS

such as pepper, garlic and onion

AND

DEHYDRATED VEGETABLE INGREDIENTS

for flavors such as broccoli powder and carrot powder



Food facts



1,000,000,000 lbs
FOOD INGREDIENTS

IRRADIATED
annually

USA

170,000,000 lbs
SPICES

IRRADIATED
annually

IRRADIATION
has been approved in

40 COUNTRIES

approximately

50 FOOD PRODUCTS

SOURCE: [Food Irradiation Questions and Answers](#), February 2014, Food Irradiation Organization



From product conception to commercialization, each stage in the life cycle of food ingredients can be extremely challenging. Since there are many considerations, it's best to collaborate with a **Sterigenics Industry Subject Matter Expert** to ensure your unique product goal is achieved.

Here's how we can help you:

- Customized solutions to help ensure secure, safe, and effective processing
- A global integrated network of facilities located near your manufacturing or distribution hubs
- High-quality and consistent processes that exceed safety standards
- Industry Subject Matter Experts to assist in solution development
- Expedited product processing services



How can we help you?

Call Us
+1 (518) 812-7779

[CONTACT US](#)



Safeguarding Global Health® with every product we sterilize

We are over 1600 engineers, scientists, safety specialists, and solution providers focused on eliminating threats to health.

We have global breadth and more than 90 years of deep expertise across Gamma, E-Beam and X-Ray technologies. Our operations span 45 facilities in 13 countries to ensure we are the “point of safe” for our customers.



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