

Food Safety Concerns

Published research on irradiated foods reveals that irradiation does change, and can actually ruin, the flavor, odor, appearance, and texture of food, and serious questions remain as to whether irradiated foods are safe to eat.

1. Irradiation Destroys the Vitamin Content of Foods - Irradiated foods can lose from 2-95% of their vitamins. For example, irradiation can destroy up to 80% of the vitamin A in eggs, up to 95% of the vitamin A and lutein in green beans, up to 50% of the vitamin A and lutein in broccoli, and 40% of the beta-carotene in orange juice. Irradiation also doubles the amount of trans fats in beef. Despite 50 years of research, food scientists still do not fully understand how these changes take place. Much of the ongoing research, in fact, is focused on devising new ways to hide these changes, rather than addressing the cause of the changes themselves.

Irradiation is Not the Solution to Food-Borne Illness

Using recent food-contamination scandals as a springboard, irradiation has been touted as the solution to food-borne illness in everything from spinach to deli meats. But a good, hard look at the systemic food and agricultural problems that cause these tragic outbreaks in the first place has yet to be undertaken by government agencies.

2. Masks the Unsanitary Condition of Factory Farms - Irradiation is an after the fact "solution" that does nothing to address the unsanitary conditions of factory farms, and actually creates a disincentive for producers and handlers to take preventative steps in production in handling. The longer shelf life created by irradiation (affording longer shipping distances) also provides greater opportunity for post-treatment contamination via shipping, handling, etc. Additionally, irradiation does not work to stop toxins produced by some bacteria (like botulism); viruses, like foot and mouth disease or hepatitis, are resistant to the irradiation doses used in food; and prions (thought to be the cause of BSE, or Mad Cow disease) are resistant as well.

3. Contributes to Consolidation of the Agriculture Industry and the

Globalization of Food - American food processing companies see the use of irradiation as a potential means of boosting profits. In fact, the motivation for expanding irradiation to additional categories of food may be less about getting rid of disease-causing organisms, and more about increasing market share in international trade. Irradiation can dramatically increase the shelf life of food. This gives corporations more flexibility in marketing and transportation, making it easier for large companies to move some operations to countries with lower labor costs and lower sanitary and safety standards. As in many other "outsourced" industries, American workers, farmers and ranchers, could lose their jobs. In other words, food irradiation supports globalization at its worst, where concerns over long-term health risks carry less weight than the lure of expanded markets. Additionally, since irradiation has become a tool for the globalization of U.S. food production, food irradiation procedures are modeled for large, centralized operations. This furthers the consolidation of "Big Ag" companies and contributes to the destruction of small U.S. family farms - further degrading the security and diversity of our food supply.

What is Food Irradiation?

Food irradiation uses high-energy Gamma rays, electron beams, or X-rays (all of which are millions of times more powerful than standard medical X-rays) to break apart the bacteria and insects that can hide in meat, grains, and other foods. Radiation can do strange things to food, by creating substances called "unique radiolytic products." These irradiation byproducts include a variety of mutagens - substances that can cause gene mutations, polyploidy (an abnormal condition in which cells contain more than two sets of chromosomes), chromosome aberrations (often associated with cancerous cells), and dominant lethal mutations (a change in a cell that prevents it from reproducing) in human cells. Making matters worse, many mutagens are also carcinogens.

Research also shows that irradiation forms volatile toxic chemicals such as benzene and toluene, chemicals known or suspected to cause cancer and birth defects. Irradiation also causes stunted growth in lab animals fed irradiated foods. An important 2001 study linked colon tumor promotion in lab rats to 2-alkylcyclobutanones (2-ACB's), a new chemical compound found only in irradiated foods. The FDA has never tested the safety of these byproducts. Irradiation has also been shown to cause the low-level production of furans (similar to cancer-causing dioxins) in fruit juice.

Courtesy of Center for Food Safety