

MYTH OF THE MONTH

Myth:

“Irradiation can be used to make spoiled food marketable.”

Reality:

This statement is incorrect. Irradiation can be used to reduce micro-organisms and in some cases improve certain food qualities, but it cannot make bad food good.

Perishable foods are perishable. There are different biological reasons for a food to decay over time.

In perishable foods, spoilage bacteria, molds and yeasts will grow, and in time make the product unappetizing. Irradiation can be used to significantly reduce, or even eliminate spoilage organisms. So, the process can be used to slow down or delay spoilage in some foods. However, it will not reverse the spoilage process. In general, it is advantageous to irradiate a food as soon as practical after harvesting. The sooner you retard the foods natural decay, the better the quality of the food.

In the case of foods that may contain pathogenic organisms, irradiation can be used to significantly reduce or eliminate the pathogens. However, if the food has already spoiled and contains a very high level of pathogens for a long period of time, it is possible that these organisms have already produced toxins. Irradiation does not have a significant effect on these toxins. So, in this specific case, it might be effective at killing the pathogen, but will not necessarily make spoiled food, safe.

Some spoilage is due to natural enzymes in the food. Irradiation does not have an appreciable effect on enzymes. Product can be irradiated at a very high dose to eliminate all spoilage and pathogenic organisms to make it “shelf stable” (no longer perishable); however, to do so also requires a separate process to inactivate the enzymes such as blanching (heating). Some of the food consumed by astronauts is heated and then irradiated so that it doesn’t spoil and is safe to eat for an indefinite period of time.

Foods, such as fruits and vegetables, decay as part of their natural life cycle. In selected cases, irradiation can be used to slow down the ripening process. In the case of potatoes, onions and other tubers, it can be used to slow down the sprouting process. For these, the irradiation can be used to extend their marketable life. It will not reverse the process. Irradiation might slow down the food’s natural aging, but it won’t make it any younger.

Rotten is rotten. If you irradiate rotten food, you will end up with irradiated rotten food.

Russell N. Stein

GRAY*STAR, Inc.

www.GrayStarInc.com

GrayStarGenesis@aol.com

