



Instructor: Kristina Mayberry (2003 Science Teacher Workshop participant)

School District: Freehold

Lesson Title: Is my school lunch safe?

Grades: 9,10,11,12

Overview: Irradiation is the process used to kill insects, bacteria, and fungi in agricultural products through the use of ionizing radiation. The goal is to treat food products in order to reduce food-borne pathogens. Extension of shelf life in fruits and the delay of ripening can also be achieved through irradiation. Approximately thirty countries have approved this process, although there is still much controversy about the safety and ethics of this fairly new technology.

Objectives: After studying this unit, students will be able to:

- Explain the process of irradiation
- Describe public misconceptions of irradiation of agricultural products
- Propose marketing techniques for and against the use of irradiated agricultural products

Materials and Resources:

- School Lunch (hamburger, apple, milk, snack)
- Article- Roos, Robert. *USDA to offer irradiated beef to schools next January*
- Internet Resources

Activity:

1. Introduce the topic of irradiation by showing the class a typical school lunch from the cafeteria.
2. Survey the students about their prior knowledge of the issue. Summarize and write each statement on the board. Do not provide the correct information just yet. Provide them with some basic information regarding irradiation as described in the Overview.
3. Tell the students that some or all of the items have been treated by irradiation (even if the food has not been treated). Ask students to record which items they think may have been treated with irradiation and why. Invite a student to choose one item on the tray to taste. Invite other volunteers to test-taste the lunch.
4. Discuss the student's reactions. Lead a discussion using the following questions:
 - a. How did you feel about trying a food that may have been irradiated?
 - b. Do you trust what you have been told about this fairly new technology?
 - c. For those students who chose not to sample the food, was it because of fear of the unknown?
5. Discuss other scenarios where trust or mistrust of science/technology has affected society.

6. Read the article "*USDA to offer irradiated beef to schools next January*".
7. Discuss questions that arise as a result of reading the article. Provide facts on the process of irradiation.
8. Divide students into groups and explain that they will be creating a marketing campaign to convince the school to vote for or against the use of irradiated beef in their school. The campaign must include:
 - a. Speech
 - Must be at least 2 minutes
 - Must address at least 5 pros or cons for the side of the issue that the group is representing
 - b. Written copy of the speech with bibliography
 - c. Choice of a poster, video, banner, costume, buttons or other creative visual aid.