

Microorganisms and Food

(Taken from the State Science Teacher Resource Book, page 12.2.30 and 31.)

Many diseases are caused by microorganisms, little creatures too small to see. A large number of microorganisms thrive in water. They include bacteria, viruses, and protozoa. Infected people may pass them by sneezing, hand contact, or through sewage. Usually they cannot be seen, smelled, or tasted.

Many deaths in developing countries are caused by diarrhea and related dehydration. Poor sanitation contributes to the spread of bacterial disease, such as cholera, food poisoning, and shigella (shigellosis). Bacteria are everywhere, including our water supplies. Water supplies in the U.S. are tested and treated regularly, so we can normally drink water without concern. However, waterborne diseases are common in many other parts of the world where water is not tested and treated.

Grocery stores and restaurants in the United States must follow many health standards concerning food safety. They are responsible for providing us with quality, safe food. Health inspectors routinely inspect these to make sure they are following the guidelines. If health inspectors find that a business is not, they can penalize them by closing the business for a specific amount of time or perhaps indefinitely.

In the United States, we are fortunate to have a government that makes food safety a priority. In some countries, food may be produced or imported, but it is spoiled by pests or microorganisms due to poor storage. Pests (insects and rodents) and microorganisms (bacteria, mold, yeast) are the two chief causes of food spoilage. Food must be transported, stored, and prepared correctly to ensure safety. Agribusinesses that deal with food must know where their food is coming from. They must also know how their food was grown and how it was transported.

All food will spoil if it is not preserved in some way. Some foods such as nuts and grains can be stored for a long time without spoiling. Other foods such as bread and milk must be consumed quickly. Foods can be preserved in many ways. Canning, freezing, and dehydrating are just a few methods. Spoilage may occur before there is a change in taste or odor. Therefore, consumers should read expiration dates before eating food products bought from grocery stores.

People can reduce their risk of food-borne illness by handling it properly. Eighty-five percent of the cases of food-borne illness caused by bacteria can be avoided with proper food handling. Keys to food safety are washing hands, checking expiration dates, washing surfaces and utensils with hot, soapy water, refrigeration and freezing, rinsing fruits and vegetables, and storing foods in proper places.