Food Preservation Techniques

Canning first destroys bacteria through heating and then the food is placed in a sterilized container and sealed.

Drying removes water from the food that's required by spoilage bacteria to grow and reproduce.

Freezing slows down the spoilage process by changing that some essential water into ice, a form that the bacteria cannot use.

Pasteurization destroys most of the existing spoilage organisms by heating the food to a high temperature for a short duration.

Pickling or fermentation (culturing) leaves the food with a higher level of acid, making it an inhospitable environment for spoilage bacteria.

Vacuum packaging uses a vacuum sealed, abrasion-resistant moisture-impermeable film that inhibits molds, yeasts, and bacterial growth on the surface of the things such as meat. Since there is no air in the package, vacuum-packaged meat will have a darker, purple color before being opened. Once the meat is exposed to oxygen, it will turn the familiar bright red color, because of the natural reactions within the package. Fresh vacuum-packaged meat will give off a slight odor upon opening. The smell will dissipate within a few minutes—this should not be confused with spoilage.

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Smoking adds smoke-born chemicals to food that help destroy potential spoilage organisms.

Chemical additives are designed to destroy spoilage organisms or inhibit their growth. Sugar and salt are examples of additives that have been in use for centuries. Both of these work by drawing water out of the spoilage organisms, thus preventing their growth.

UHT **-** ultra-high temperature, higher than pasteurization resulting in a sterile product.

Irradiation - process like pasteurization that pasteurizes food by using energy, just like milk is pasteurized using heat. Irradiation DOES NOT make food radioactive. The food never touches a radioactive substance. Irradiation destroys insects, fungi, and bacteria. Fewer nutrients are lost during irradiation than in cooking and freezing. Food irradiation has been approved in 37 countries for more than 40 products. Astronauts have eaten irradiated foods for years.

Food additives - a food additive is any substance added to food. Sugar, salt, and corn syrup are the most commonly used food additives. Food additives keep foods fresh, slow microbial growth, give desired texture and appearance, aid in processing and preparation.