

Microorganisms and Meat

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February 1995

Microorganisms are tiny living creatures that are present everywhere in nature and in human environments, including our food supply. People often refer to microorganisms as germs. Bacteria, yeasts, molds and viruses are the most common microorganisms, however, they are too small to be seen with the naked eye. Some microorganisms are useful for the production of specialty meat products, while others may cause spoilage or lead to foodborne illness.

Fermented meat products such as summer sausage and pepperoni are made by adding selected microorganisms to meat in the form of starter cultures. This practice is similar to adding yeast to flour mixtures to produce bread. In both cases, microorganisms are purposely added to food to create a product that will exhibit certain desired characteristics. The tangy flavor typically associated with fermented meat products is the result of acid-producing bacteria that are found in starter cultures.

Some microorganisms cause meat to spoil. Meat should be stored in the coldest part of your refrigerator, or be stored frozen. The temperature of your refrigerator should be kept between 35 and 40F. Although refrigeration will slow the growth of many microorganisms, it does not stop microbial growth entirely. Ground beef, for example, can be safely stored refrigerated for 1 to 2 days; if the meat will not be cooked and consumed within this time period, frozen storage is recommended. Spoiled red meat and poultry generally smells bad, is discolored and may be slimy to the touch. In addition, spoiled poultry may exhibit darkening at the wing tip, plus be sticky under the wing and on the upper surface of the tail. All spoiled meat should be discarded and not eaten.

Some microorganisms are pathogenic which means that they have the ability to cause foodborne illness and make people sick. Pathogens are not intentionally added to meat. Depending on the species, pathogens may be found in soil, in the gastrointestinal tract of domestic animals and humans, in water, and in many other locations.

Staphylococcus aureus bacteria can be found in the nose and throat and on the hair and skin of more than half the healthy human population. Because this is such a common pathogen, food can become easily contaminated with this organism. Good hygienic practices are extremely important to prevent *Staphylococcus* contamination in meat and other foods, in addition to proper handling, cooking and cooling practices.

It is important for you to be aware that microorganisms exist and that they are found in our food supply. You can minimize your risk of exposure to foodborne illness by handling meat safely. Safe handling guidelines and more information about microorganisms in meat can be obtained by contacting your local county extension office.