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Microbiology of Meat and Destruction of Meat by Microbes

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ABSTRACT: The article provides information on the microbial degradation of meat, the creation of the ground for the accumulation of infectious microbes, saprophytic microbes when the quality of meat is low.

The article describes the deterioration of meat under the influence of microbes, when the quality of the meat is low, infectious pathogens, data on the creation of the soil for the accumulation of saprophytic microbes.

KEYWORD: Toxic infections, toxicosis, pathogen, sublimation, psychrophilic, halophilic, salmonella.

Researchers have found that along with the beneficial activities of microorganisms, they are harmful in food preparation

They also sought to find ways to combat them.

With the development of animal husbandry and other sectors of agriculture, there is a need to develop measures for the storage and storage of some surplus products, to prevent their spoilage. Due to this, methods such as drying, freezing, salting were used.

Various methods have also been used to prevent the aerobic (oxygenated) process of microbiological decomposition. For example, the meat is greased or salted. From the 15th century to the 18th century, the fermentation process was studied as a chemical process.

Meat is composed of muscle tissue, connective tissue, fat and bone tissue. Meat contains essential nutrients for humans and plays an important role in the normal growth and development of the body.

Meat from healthy animals is usually free of germs, because the tissues of a healthy organism have the ability to protect. When the physiological state of the organism is disturbed, its ability to defend itself is reduced, and there is an opportunity for the growth of microbes. Infectious organisms, ie microbes, multiply in the susceptible organism, as a result of which the substances released from them have a negative effect on meat tissues.

In addition to infectious microbes, saprophytic microbes are often found in the tissues of the body, which can cause disease only when the body is tired or weakened (from hunger, dehydration, fatigue).

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When animals are transported, lactic acid accumulates in their muscle tissue, which increases the permeability of blood vessels, resulting in a decrease in glycogen in the body, leading to premature destruction of meat. Therefore, animals are rested for 3 days before slaughter. During this time, lactic acid is absorbed into the muscle tissue of animals, and a number of microbes die. As a result, the meat can be stored for a long time.

Germs enter the meat when peeling the skin of animals and during the process of mincing meat. The skin is often contaminated with various organic substances and is a breeding ground for microbes. The average temperature (home conditions +20 +22 C) and above, the higher the number of microbes at the skin level (from a thousand to a million per 1 cm2). In addition, germs get into the meat during processing, from clothing and hands, due to improper transportation, and they lead to premature spoilage of meat.

Temperature is a key factor in the development of microbes. At +37, germs appear in all layers of meat. Under a microscope, salmonella can be seen as an infectious agent. The lower the temperature, the slower the growth of microbes, but psychophiles develop. Moisture is important in the life of microbes is a factor. As the humidity decreases, the microbes become anabiotic and the spore-forming ones become spores.

Anaerobic microbes are involved in the decomposition of meat, breaking down the protein into toxic substances - carbon monoxide, hydrogen, ammonia and nitrogen. When microbial spoilage occurs in meat, its color, smell and taste change. Under the influence of anaerobic microbes, toxic gases such as indole, skatol, hydrogen sulfide are formed. Consumption of such meat poisons people. Mold fungi that grow on meat from the outside develop due to the temperature and the comfort of the nutrient environment.

Gives a bad smell to meat. Bacteria grow on the top layer of meat. They form red, yellow and blue. These bacteria are not dangerous to humans. They do not emit toxic substances.

Meat poisoning is divided into 2 groups: toxic infections and toxicosis. Poisoning by toxic infections occurs when people eat meat and meat products undercooked. In addition, toxic infections can be transmitted to meat from water, air, equipment. When food is frozen, it does not spoil for a long time. At low temperatures, the growth and development of microbes is temporarily stopped, and the quality of meat is almost unchanged. Pathogenic microbes are very sensitive to low temperatures, at -10 degrees their growth stops completely.

When meat freezes, some germs die. The rest goes into a state of anabiosis. The meat should be frozen as slowly as possible. The meat should be used as soon as possible after defrosting, as it will spoil quickly.

Meat can be stored for a long time by drying. There are several types of drying, the most important of which is sublimation. In this case, the meat frozen under vacuum is heated to 55-70 degrees and loses moisture. This method is widely used in the food industry. Dried meat should be protected from moisture. Otherwise, many germs can develop.

Meats intended for long-term storage are placed in airtight jars and sterilized at +115, +120 degrees. Such cans can be stored for many years. High quality fresh meat is used for canning. Canned food should be inspected regularly. This is due to the fact that there may be spores that do not die during sterilization. If the microbes are not dead, the jars will swell during this period.

Salting meat is an ancient chemical method. The meat is mainly salted to preserve it well and for a long time, as well as to give it a unique color and taste. Salt is often used to salt it. Salts of nitric and

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nitric acids are also used in salting meat. These salts give the meat a red color under the influence of denitrifying bacteria. Sugar makes the meat delicious.

The presence of carbohydrates in meat promotes the well-being of lactic acid bacteria, which produce lactic acid. As a result, the conditions for microbial growth become more difficult.

Salt-loving bacteria (halophiles) are often involved in the decomposition of meat. However, sometimes the violation of the rules of hygiene and technology in salting reduces the sanitary quality of meat and leads to the spread of various diseases, as well as disorders of the stomach and intestines.

In short: today, as the demand for meat increases, its price is rising. As a result, low-quality meat is appearing on the market shelves. This means that when the quality of meat is low, the ground is created for the accumulation of infectious microbes, saprophytic microbes. To prevent this, we need to know that meat is contaminated with germs, that meat rots when it is old (people are poisoned when it is eaten), and that mold can lead to infectious diseases. we have to buy.

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