

# Impacts of Meat Preservation on Public Health and Economy

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## ABSTRACT

The meat preservation has a positive effect on economy due to it prolongs the shelf life of the meat and also improves the public health due to inhibition of the growth of the microorganisms. In the meat preservation methods, there are different methods that are being used for the meat preservation. Since the peoples started to utilize the meat, they started to preserve the meat for the later uses. The means of the meat preservation that are used for the meat preservation as the meat drying, the meat canning, the meat smoking, the meat freezing, the meat chilling, the meat curing, the meat salting, the meat fermentation and the meat pickling and the meat Irradiation. The meat drying is the oldest meat preservation method that is still being used. The meat drying is also known as dehydration. The bacteria and the enzymes only multiply at a certain level of the moisture content, in the meat drying we reduce the moisture content to ten - twenty percentage by the weight and hence the enzyme remain inactivated. In the past the meat was dried by the sun, but now the oven and the dehydrators in the practice. Now it's easy to dry the meat at the home with the help of stove and oven. By the process, firstly, cut the meat into thin narrow meat strips then boil the meat strips at high temperature that's the bacteria could be killed, after the boiling for five to ten minutes' bake in the oven. Through this method of the meat preservation, we can preserve the meat for one to two months in the air tight containers.

**Keywords:** Meat Preservation; Drying; Freezing; Smoking; Canning

## Introduction

The canning method is a popular way of preserving meat is the meat canning by the use any type of can or jar. The meat is filled in the container then these containers are placed in the hot water for eight to ten minutes with the lids and immediately cooled to 38° Celsius [1-5]. For the meat canning process, the removal of the oxygen is important and the process of the meat canning cause survival of many organisms because of the food additives [6-11]. Many of the meat additives that were used in the past and still now being used such as the sodium benzoate, sodium sorbate, sodium ascorbate ascorbic acid and sulphur dioxide. The bacterial growth can be prevented by the acetic acid and the lactic acid and the growth of the yeast by the sorbate and acetate [12-16]. The using of the high temperature steam can sterilize the meat in the canning process. For the meat preservation of the poultry meat, we use either the hot pack or the raw pack. During the hot pack the meat is first roasted and then stewed in the fat, while for the raw pack water or the meat broth is placed on the poultry [17-22].

## The Meat Smoking Method

The meat smoking, in this method the meat is preserved by the smoke of the woods or the plants. In the meat smoking the moisture is removed from the meat surface from the hot smoke but this method is only reliable when be used with the meat salting or the use of meat additives [23-28]. The meat remains tender if the smoke is not hot enough. By the smoking of the meat, the outer layer of the meat becomes so dry that the bacteria face very much difficulty while entering because at low moisture level the bacteria don't grow [29-33]. The methods of the meat smoking that is the hot meat smoking, the smoke roasting and the cold meat smoking [34-38]. In the meat cold smoking it is dried quickly so that it will stop or reduce the growth of the bacteria [39-43]. Also, one thing to remember while the meat smoking that don't directly smoke the meat from the plants because it will cause the growth of the carcinogenic hydrocarbons [44-49].

## The Meat Freezing Method

The meat freezing is very good method of preserving the edible things, it includes all the types of meat and vegetables by slowing the enzymatic activity of the bacteria but the main problem of this type of meat preservation is that the bacterial growth and the enzymatic activity gets deactivated instead of permanent stop, whenever they animal gets suitable for the growth they start replicated. The growing activity of the bacteria can be reduced significantly by lower the temperature about to 0° Celsius or less than that [50-55]. But when they face extreme low temperature, they won't get killed but their activity is reduced and they will cause slow spoilage. -12° Celsius is good for longer shelf life without deteriorating the meat quality and the meat flavor. But for the meat freezing you must require a good freezer and a good source of electric supply without interruption [56-61]. The meat gets burned if you place the meat directly in the freezer without any freezer bag and always make sure the bags are air tight in order to avoid the contamination [62-64]. The uncooked meat can be preserved for more than three to four months by this method. The different types of the meat freezes at different temperature like the meat freezer at -18°C [65-70].

## The Meat Chilling Method

to reduce the growth and proliferation of the microflora on the carcass surface, lamb carcass should be chilled shortly after the slaughtering, which is not only encourage in the quality of the meat such as the color, the weight loss, and the tenderness but also increases the shelf life [71-76]. The metabolic activity of the pathogens, the bacteria and the viruses can be reduced by the process of the meat chilling. Many types of the parasites such as Taenia cysts and many other when placed at 18° Celsius for consecutive twenty to thirty days they will be destroyed completely. The temperature of the meat chilling is in between 0° to 5° Celsius for the meat preservation [77-81].

## The Meat Salting Methods

The curing method of the meat is also an old method of the meat preservation. Now modified methods are too much but still use the curing in order to keep the taste and the flavor in contact [82-87]. In the poor countries it is still used for the meat preservation its operation in the meat production, the transportation, the storage and the access [88-93]. For the meat salting the sodium chloride is used because it absorbs the water content of the meat, delays and retards the growth of the bacteria. Rubbing of the salt on the meat is termed as the meat salting or placing the meat in the salt solution. The moisture of the product can be drawn out by osmosis process with the help of the curing technique [94-100]. Injecting the salt solution in the meat is also getting popular these days. Earliest form of the curing was dehydration removal of the water content from the meat that will make difficult for the bacteria to grow [101-107].

## The Meat Fermentation and the Meat Pickling Methods

Controlled the bacterial reaction in the absence of the oxygen is termed as the meat fermentation. In the pickling higher amount of the salt is used that act as barrier for the bacteria. For the pickling time and the concentration of the pickling agent is important that could be determined by the type of the meat [108-113].

## The Meat Irradiation Method

The method of the meat preservation is called meat irradiation. Different types of the radiation effect the growth of the bacteria. The shelf life of the meat can be increased with the using of the Gamma rays. For sterilization the surface of the meat UV rays is used because they have bactericidal effect [114-120].

## Conclusion

The meat spoilage produced very terrible effect in the past because of the poor or no meat preservation methods but now it became extremely easy to prevent the meat and meat products from the spoilage by reducing or almost inhibiting the growth of the bacterial pathogenic organisms by the using different types of the meat preservation techniques including the meat drying, the meat canning, the meat freezing and the meat chilling without deteriorating the shelf life of the meat products texture and quality. Most of these methods are still adopted on industrial level to achieve the maximum profit from these meat products. The industries and the scientists are working to develop and establish easier and reliable techniques to ensure the safe transportation of the meat and meat products.

## Conflicts of Interest

The author declares no conflicts of interest.

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