

A Commentary on Advanced Techniques to Preserve Meat using Enzymes

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Commentary

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ABOUT THE STUDY

Advances in meat processing technology have evolved over the years, merging the expertise of meat scientists and food engineers to develop a holistic approach towards the processing of meat. The aim of these advancements is to improve the quality, safety, and shelf-life of meat products. In this article, we will explore some of the recent meat processing techniques that have gained importance. One of the most recent technologies is enzymatic processing. This is a process that uses enzymes to modify the texture and flavour of meat products. Enzymes are natural substances that catalyse chemical reactions in the meat. The process involves treating the meat with enzymes that break down the protein structure, leading to a tender and juicy texture. Enzymatic processing has been found to be highly effective in improving the texture and flavour of meat products such as sausages and hams. The use of enzymes has also been found to reduce the cooking time.

Recent advancement techniques

High-pressure processing: This process involves treating meat products with high levels of pressure to kill bacteria and other microorganisms. High-pressure processing has been found to be highly effective in reducing the risk of

foodborne illnesses such as *E. coli* and *Salmonella*. The process also preserves the nutritional value and flavor of the meat products, making them healthier and more delicious.

Ohmic heating: This process involves passing an electrical current through the meat, causing it to heat up rapidly. The process has been found to be highly effective in improving the texture and flavor of meat products. Ohmic heating has also been found to be highly energy-efficient, leading to significant savings in energy costs. This method can also be used to inactivate antinutritional factors, preserving nutritional and sensory properties. However, viscosity, electrical conductivity, and fouling deposits limit ohmic heating. Although the Food and Drug Administration (FDA) has not yet approved ohmic heating for commercial use, it has a wide range of potential applications, from cooking to fermentation.

Pulsed electric field: This process involves treating meat products with short pulses of high voltage electricity. The process has been found to be highly effective in killing bacteria and other microorganisms, leading to a longer shelf-life for the meat products. Pulsed electric field treatment has also been found to improve the texture and flavor of meat products, making them more delicious and appealing to consumers.

Vacuum packaging: Vacuum packaging involves removing the air from the packaging, creating a vacuum. This process has been found to be highly effective in preserving the quality and freshness of meat products. Vacuum packaging also reduces the risk of contamination by bacteria and other microorganisms.

In conclusion, advances in meat processing technology have led to significant improvements in the quality, safety, and shelf-life of meat products. Enzymatic processing, high-pressure processing, ohmic heating, and pulsed electric field treatment are some of the recent technologies that have gained importance. These technologies have been found to be highly effective in improving the texture and flavor of meat products, reducing the risk of foodborne illnesses, and preserving the nutritional value of the meat products. As the demand for high-quality meat products continues to increase, it is expected that more advancements in meat processing technology will be made in the future.