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Review Article

What is the Meat Products used for Human Consumption?

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Abstract

There is a wide range of food ingredients wholesale used in meat products, which are divided into four main categories according to the different functional roles they play in food. Natural vegetable fiber ingredients have strong gelling properties. Antioxidants and preservatives for meat are used to improve the preservative properties of meat and prevent meat spoilage, etc. Meat additives such as starch, emulsifiers and stabilizers, such as gelling agents in food, facilitate food processing and improve the texture of processed meat. Meat additives such as meat flavor enhancers, meat food coloring, and spices improve the color and flavor of food, such as natural shelf-life extenders. Transglutaminase for sale: Increase the nutritional value of food minerals, vitamins and other food additives. ACE Ingredients Meats Preservatives & Additives FAQs

Keywords: food ingredients; antioxidants; preservatives; starch; emulsifiers; stabilizers; gelling agents

Introduction

The difference between a preservative and an additive, Meat additive including preservatives for meat and other types. According to different types of meat additives, they improve the quality of food, Food additives used in various processed meat improve processing conditions, prevent food spoilage, and natural shelf-life extenders of food has an extremely important role (1,2,3,4,5,6 and 7). The difference between food additive and food ingredient. Food ingredients and food additives are mainly related to the sources, uses and functions of the two are similar, often used in conjunction with each other, and sometimes can be substituted for each other, and their effects may have a multiplying effect or cancel each other out. p. meat color additives, Meat color additives is to improve the color of the product, according to its different coloring mechanisms can be divided into two categories of colorants, pigments (8,9,10,11,12,13 and 14). Meat food coloring commonly used nitrite, sodium nitrate, sodium nitrate and other provisions of sodium nitrate and potassium nitrate cured meat products, marinated meat products, smoked, roasted, grilled meat, fried meat, Western ham, meat sausage, fermented meat products. Additives used for meat coloring are called meat color additives, and their purpose is to increase the appetite for food and stimulate appetite. Meat color additives is divided into two categories according to the source: synthetic coloring and natural coloring (15-21).

Home Ingredients

Home Ingredients Natural, Free-From & Functional Ingredients 'Meeting' The Time Challenge: Extending Shelf-Life in Meat 'Meeting' The Time Challenge: Extending Shelf-Life in Meat (22-28). Meeting' The Time Challenge Extending Shelf Life in Meat Preservation has long been critical to meat processors and today, shelf¬-life is top of the agenda. Consumers are demanding for more natural solutions than artificial ones to keep meat fresh and reduce waste, and one such solution is through lactates natural, clean label ingredients. (29-35). Food waste is a growing problem for the international community with one third of the food produced for human consumption—approximately 1.3 billion tonnes—being wasted every year. In addition, of the 263 million tonnes of meat produced globally each year, 20 percent is lost or wasted despite its high economic cost (36-43). Food trade is becoming progressively more globalised for most countries, as more and more food manufacturers attempt to reach different markets. This inevitably forces supply chains to become larger and more complex. As such, vulnerable produce including meat, which typically has a short shelf-life, is required to stay fresh for longer (44-50). Meat wastage occurs throughout the entire supply chain, be it during agricultural production, post-harvest handling and storage, processing and packaging, distribution or consumption. This may be due to a number of reasons including degradation, poor inventory management or not meeting specifications for quality. The latter is particularly true at the retail level (51-57). Consequently, food often does not even make it into shopping baskets. Food retailers and supermarkets therefore require products to maintain the desired visual appearance, smell and other quality elements for longer durations whilst on the supermarket shelf to reduce waste and improve economies of scale (58-64).As with other perishable food products, advancements in ingredient technology for meat are allowing meat processors to increasingly extend shelf-life to meet the demands of retailers (65-71).

Popular Ways to Extend Shelf-Life

Shelf-life depends on the degradation mechanism of the specific product. Meat, in particular, can be influenced by several different factors including heat, moisture and contamination by micro-organisms. As such, there are several options when it comes to shelf-life extension (72-78). Salting is one of the most common and ancient ways of preserving meat. Via absorption, the salt draws out any moisture from the meat and creates an environment inhospitable to bacteria. This extends the meat's shelf-life by preventing meat spoilage. The more salt is added to the product, the longer the preservative effect. The same is also true for sugar, which is often added to food as an alternative to avoid the strong flavour inherent to salt (79-85). Similarly, artificial food additives such as nitrites and benzoates can be used to preserve meat due to their antimicrobial effect. They may also act as antioxidants, making meat more acidic, reducing the moisture level, thus slowing down the ripening process and preventing the growth of microorganisms—all of which help the meat last longer (86-92). Other common ways of controlling shelf-life include refrigeration, freezing and packaging. Refrigeration is the obvious solution to controlling meat's exposure to heat. The idea behind this method is to slow down bacterial action so that it takes food much longer to spoil. In the case of freezing, the aim is to stop bacterial action altogether, since frozen bacteria are completely inactive. In addition, neither refrigeration nor freezing are likely to have an effect on the food's taste or texture (93-99). In traditional meat handling, fresh meat is generally not packaged at all. However, this customary system has gradually become outmoded since more time is needed between slaughtering and final consumption. Meat frequently has to be stored, transported, prepared and distributed through a retailer or supermarket, all of which are considerably time consuming. As such, many varieties of packaging have been developed to safeguard meat throughout this extended process (100-106). The primary purpose of packaging is to protect foodstuffs from contamination by dirt and micro-organisms. This can be done by simply wrapping the meat in film, allowing air to the meat but protecting it from physical contamination for approximately one to two days. More advanced techniques, however, such as modified atmosphere packing or vacuum packing can extend shelf-life up to 10 days, by preventing oxidation (107-113).

Effect Of Current Market Trends

There are several market trends which drive changes in meat preservation. For instance, global research shows how the clean label trend has gained pace in many regions. The demand for additive-free, natural foods is accelerating day by day and shows no sign of abating (114-120). Preservatives are a recurring topic in public discussions, with many consumers associating them with harmful chemicals. When it comes to on-pack messaging, free-from and naturally-derived ingredients are a key differentiator for many label-conscious consumers (121-127). As such, global organizations have set out detailed labelling systems for food additives to enable customers to make informed choices with regard to foods containing preservatives. Manufacturers are therefore increasingly considering what ingredients to use in their formulations, as well as how they label them on the pack, as they seek to stand out from the competition (128-134). Overlapping with this demand is the trend for healthy eating. With mounting evidence for excessive sodium intake leading to high blood pressure and heart disease, there is considerable pressure from scientists and public health authorities for mandatory salt limits. At the same time, awareness of the nutritional effect of excess sugar is having a similar impact, encouraging food manufacturers to reformulate their recipes (135-141). At the same time, consumer demand for 'fresh' products is rising. Alongside the popularity of convenience foods, consumers increasingly expect freshness on demand, with it being intrinsic to quality perception. A significant factor affecting consumers' quality perception of meat is its appearance. Macroscopic meat aspects like colour are important visual cues which consumers often correlate to product freshness. In addition to signifying quality, freshness is also perceived as the most helpful factor in assessing safety at the time of purchase (142-148).

The Reformulation Challenge

Fresh beef with (right) and without (left) lactates. Reformulating to adhere to consumer trends can create significant challenges for meat manufacturers. Aside from influencing shelf-life, ingredients such as salt also enhances flavor and imparts a certain texture and mouth feel, contributing to the overall sensory properties in processed meat (149-155). As a result, the removed or reduced ingredient must be replaced by an alternative ingredient which not only extends product shelf-life, but also stabilizes recipes and enhances taste and texture. Moreover, the ongoing trend toward natural, additive-free products poses an ever-greater challenge, as it further reduces the amount of salt alternatives available on the market (156-162). Natural, non-sodium ingredients are a viable option to replace salt and chemical preservatives in food products. One such solution for this is organic acid-based salts, such as potassium lactate, that are often used in fresh and cooked meat products to extend shelf-life and increase food safety. Lactate solutions have a bacteriostatic effect on meat, inhibiting the growth of microorganisms and increasing the dormant phase of bacterial growth. This is achieved by reducing water activity and lowering bacterial metabolism, lengthening shelf-life by 50 to 100 percent. Using such ingredients is one way of meeting today's shelf-life requirements, providing extra flexibility for retailers and convenience for consumers. Besides preservation, lactates can also maximize the quality of meat products. They can help meat manufacturers meet reformulation challenges head on as they deliver the salty taste of processed meat products, whilst allowing them to decrease actual sodium levels (161-166). In addition to this, they also improve the overall quality of meat by enhancing tenderness and juiciness, overcoming some of the issues associated with the removal of salt. As such, meat formulated with lactates exhibit increased slice ability characteristics by increasing breaking strength, cutting shear force, hardness and springiness. Inclusion of lactates in meat also slows the degradation of myoglobin into metmyoglobin, whose presence is commonly associated with the red color of fresh meat. Adding lactates would improve color retention. This is most significant in fresh beef, where tests have shown that the use of lactates can preserve red meat color for up to six additional days (22-28).

Extending shelf-life the natural way

In line with consumers turning away from food products containing unfamiliar or 'chemical sounding' additives, food producers are exploring natural options for food ingredients that are sustainable, reliable and maintain product quality throughout its shelf-life. Label-friendly ingredients are one example that offers a viable alternative. Produced from natural raw materials such as cane and corn sugar, through natural fermentation, these can improve the overall quality including prevention of bacterial growth. When blended with a source of acetic acid, such as vinegar, these natural ingredients act as a highly effective barrier against pathogen growth, such as Listeria (17-23). In addition to improving overall quality, including antimicrobial performance, these ingredients also meet the demand for decreased sodium content, while simultaneously improving the sensory profile of the meat. The addition of vinegar to fresh pork and poultry products can equally contribute to maintaining color uniformity and reducing grey discoloration during shelf-life (32-38).

Conclusion

Meat products provide a perfect environment for microbial growth, due to their high moisture content and rather neutral pH. However, the requirements for longer shelf-life of meat products, be it fresh meat or cooked ready-to-eat products, are multiplying, thanks to longer and more complex food supply chains.

As a result, food is required to stay fresher for increasing amounts of time. At the same time, traditional methods of preservation, such as salting and the use of artificial food additives, are insufficient in meeting today's consumer demands for fresh and healthy products.

It is therefore vital, that product developers carefully consider the ingredients available to them when reformulating their recipes. They can now access label-friendly solutions such as lactates to control microbial spoilage, increase shelf-life and enhance the overall quality of meat, all while satisfying consumer demand for clean and healthy products.

Conflicts of Interest: The author declare no conflicts of interest.

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