A MINI-REVIEW: INCORPORATING ENCAPSULATED POLYPHENOLS IN MEAT PRODUCTS

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Abstract

With the increase in global meat consumption over the past few decades, the meat industry has evolved into an era of seeking innovative methods to improve the health-promoting attributes of meat while eliminating the synthetic ingredients that can cause negative health impacts to consumers. Plant polyphenols have been highly used in the development of functional foods recently due to their antioxidant and antimicrobial properties. Controlling the activities of oxidized compounds in meat, and preservation of meat by inhibition of microbial activities and oxidation reactions to reduce the use of synthetic additives are the main focused aspects regarding the development of meat products by incorporating plant polyphenols. Encapsulation is an effective technology that can deliver polyphenols into foods with improved stability and bioavailability while masking unfavorable flavors and odors. The objective of this review is to summarize the importance of using encapsulated polyphenols in meat products and recent advancements in the production of various meat products incorporating encapsulated polyphenols. Spray-dried or freeze-dried microencapsulation, nano-liposomes, nano-gels, coacervation, and emulsions are the most studied methods in encapsulating polyphenols. In summary, by now, encapsulated polyphenols of Mulberry, Bay leaf, Rosemary, Garlic, Thyme oil, and Tea leaf have been successfully used in different meat products to achieve the above goals, and various other plant polyphenols are also extensively studied in this perspective.

Keywords: Antimicrobials, Antioxidants, Encapsulated polyphenols, Meat preservation

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