



Review article

An overview of natural antimicrobials role in food

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ABSTRACT

The present paper aims to review the natural food preservatives with antimicrobial properties emphasizing their importance for the future of food manufacturing and consumers' health. The extraction procedures applied to natural antimicrobials will be considered, followed by the description of some natural preservatives' antimicrobial mechanism of action, including (i) membrane rupture with ATP-use activity inhibition, (ii) leakage of essential biomolecules from the cell, (iii) disruption of the proton motive force and (iii) enzyme inactivation. Moreover, a provenance-based classification of natural antimicrobials is discussed by considering the sources of origin for the major natural preservative categories: plants, animals, microbes and fungi. As well, the structure influence on the antimicrobial potential is considered. Natural preservatives could also constitute a viable alternative to address the critical problem of microbial resistance, and to hamper the negative side effects of some synthetic compounds, while meeting the requirements for food safety, and exerting no negative impact on nutritional and sensory attributes of foodstuffs.

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1. Introduction: biopreservation and fighting foodborne microbial pathogens

Many foodborne diseases are caused by ingestion of food contaminated with microbial pathogens. Many studies are focused on counteracting the action of such food related pathogens and on

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