Journal of Food Quality

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Special Issue on

Essential Oils as Antimicrobial Agents to Reduce Microbial Load in Food Products

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The food industry has long used synthetic chemicals in food products to maintain freshness and improve flavor. However, the increased use of chemical preservatives has led to various concerns about possible side effects on consumer health. Numerous chemical preservatives, including artificial sweeteners like aspartame, synthetic antioxidants like BHA and BHT, and different food dyes like tartrazine, have been linked to various adverse effects, such as allergic reactions, hyperactivity in kids, and even potential carcinogenicity. As a response to these concerns, there has been a dramatic increase in research into natural preservatives, such as essential oils (EOs). Due to their antibacterial and antioxidant qualities, essential oils offer possible options. They are extracted from different parts of aromatic plants and medicinal herbs, including the bark, leaves, fruits, seeds, and roots.

As an alternative to synthetic chemicals, EOs contain substances, such as terpenes and phenols, which can slow the growth of foodborne pathogens and extend shelf life. EOs can also help maintain the quality of food products and ensure food safety throughout the supply chain. Essential oils are a useful addition to the food industry as they may provide food items with distinctive and pleasant flavors, however, there have been health issues associated with EOs, such as skin irritation, photosensitivity, eye irritation, and other allergic reactions, but careful handling and optimized doses of EOs can mitigate these issues. Utilizing essential oils as natural preservatives not only satisfies customer demand for healthier and more environmentally friendly food items but can also help to solve health problems, as they do not have the health and environmental issues associated with conventional chemicals. EOs also play a crucial role in reducing food waste by preventing oxidative deterioration and reducing microbial growth in food items. The application of Eos decreases the need for synthetic chemical preservatives, an approach which controls both microbial load in foods and the discharge of potentially dangerous chemical residues into the environment. Sustainable alternative preservatives benefit the environment and promote responsible consumption habits, resulting in a more efficient and eco-friendly food supply chain.

This Special Issue covers all aspects of essential oils, including the extraction, characterization, and application of EOs in food preservation and packaging. It also includes the usage of EOs in maintaining the quality and extending the shelf life of food products. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- Extraction of EOs by conventional and innovative methods
- Optimization of EOs extraction methods
- Characterization of active ingredients and flavoring substances present in EOs
- Applications of EOs in food preservation
- Scope of EOs in the development of food packaging films
- Functional food development using EOs
- EO-based edible films and their characterization
- Influence of EOs on the safety and quality of food products
- Impact of EOs on the antioxidant potential and polyphenolic profile of foods
- Sensory evaluation and consumer acceptability of EO-enriched food products

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=495706.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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