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Autore	Waghmare Roji Balaji
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## Sommario/riassunto

This comprehensive volume explores the principles, processes, and applications of freeze-drying in the food industry. Edited by experts Roji Balaji Waghmare, Manoj Kumar, and Parmjit Singh Panesar, it covers the foundational aspects of freeze-drying technology, including the stages of freezing, primary drying, and secondary drying. The book delves into mathematical modeling and practical approaches for optimizing freeze-drying processes. It examines the impact on various food categories such as fruits, vegetables, meat, seafood, dairy products, and probiotics. The text highlights the advantages and limitations of freeze-drying, its effect on nutritional stability, and emerging methodologies like microwave-assisted and infrared freeze-drying. Aimed at food engineering professionals and researchers, it serves as a valuable resource for understanding the technical and commercial aspects of this preservation method.

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