
Handbook of Dairy Processing

This First Edition published in 2024

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Title: Handbook of Dairy Processing

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Description: First edition | New Delhi Publishers 2024 | Includes bibliographical references and index.

Identifiers: ISBN 9788197362644 (Print) | 9788197362613 (eBook)

Cover Design: New Delhi Publishers

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NEW DELHI PUBLISHERS

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NEW DELHI PUBLISHERS

New Delhi, Kolkata

Foreword

In the rapidly evolving field of Food Science & Technology, the demand for innovative solutions and enhanced skill sets has never been more critical. As the global population grows and sustainability becomes a pressing concern, the role of food technologists in developing efficient, safe, and nutritious food systems is paramount. It is within this dynamic and challenging landscape that the need for comprehensive education and continuous skill enhancement in the field of food technology arises.

This book, “Handbook of Dairy Processing,” is a meticulously crafted guide designed to address these evolving needs. It serves as a beacon for aspiring food technologists, seasoned professionals, and educators alike, offering a rich tapestry of knowledge and practical insights that are essential for mastering the complexities in the field of dairy science.

The course outlined in this book is aligned with Skill Enhancement Courses designed by University of Delhi under NEP-2020. The handbook covers a broad spectrum of dairy products and processing including basic knowledge of registration and licensing startup for ensuring a holistic learning experience. Each practical is structured to provide not only theoretical knowledge but also practical applications, and questions that bring the concepts to life.

I am confident that “Handbook of Dairy Processing” will serve as an invaluable resource, guiding you towards a successful and fulfilling career. Let this book empower you to innovate, inspire, and lead the way in the transformative world of dairy technology.

Prof. (Dr.) Payal Mago

Director, Campus of Open Learning (DU)

Chairperson, Skill Enhancement Courses Committee

Preface

According to Food and agricultural Organisation (FAO) about 150 million households worldwide produce milk. While in developing countries it is carried out in small family farms, in developed countries that transformation to large-scale industrial enterprises continues intensely.

India is the largest milk producing country in the world. Milk production of 230.6 million tone was observed in the year 2022-23 with per capita availability of 459 gms/ day. We export dairy products around 67572.99 MT worth \$284.65 million for the financial year 2022-23. India is the country with the highest number of dairy cows. In the year 2021 the number rose to 58 million. Also, the population of buffalo too is highest in India. Therefore, it is the report of FAO Agricultural Outlook 2020- 29, India is the worlds largest milk producer; making of 22% of global population and milk of all types.

Milk is a very unique animal produce due to its liquid nature and very high concentration of nutrients. It is nearly perfect food. As the mankind started domesticating milch animals, the perishable nature of milk became a big challenge for them to store it and prevent from spoilage. Therefore, the oldest preserved products like cheese, butter, yoghurt, dahi, acidophilus milk were found in Roman, Greek, Egyptian and Indian civilization. So, in the current scenario the technique of milk processing and preparation of various products from milk play a significant role in its preservation, consumption and even add to the economy of a country as well.

Therefore, the current manual is an attempt to explore the processing of milk and milk products. The book has been divided into 10 experiments. The basic concept of homogenization, along with the laboratory preparation of products like paneer, channa, casein, ghee, butter, indigenous milk-based sweets, flavoured milk, yoghurt etc gives an insight to the students how as to such products are prepared and packed. Further the manual focuses on amalgamating of the scientific principles with the knowledge of start-up & preparing business plan. It sheds light on the licensing and registration requirements for the food industry in India, as regulated by the Food Safety

and Standards Authority of India (FSSAI). The book is an honest attempt to help the students, faculty and curious dairy processors.

Dr. Deepa Joshi

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