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# **Handbook on Fruit & Vegetable Processing**

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# Handbook on Fruit & Vegetable Processing

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## 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 on Fruit & Vegetable 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 fruit & vegetable processing.

The courses outlined in this book are aligned with Skill Enhancement Courses designed by University of Delhi under NEP-2020. The handbook covers a broad spectrum of fruit & vegetable products and processing including basic knowledge of registration and licensing startup from 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 Fruit & Vegetable Processing” will serve as an invaluable resource, guiding you towards a successful and fulfilling career. May this book empower you to innovate, inspire, and lead the way in the transformative world of fruit & vegetable technology.

**Prof. (Dr.) Payal Mago**

Director, Campus of Open Learning (DU)

Chairperson, Skill Enhancement Courses Committee



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## Preface

India is the second largest producer of fruits and vegetables in world after China. Huge quantity of produce is wasted due to inadequate facilities for preservation as only 1.5 to 2% of the total produce is processed in the country. Fruit and vegetable preservation is thus one of the major pillars of food industry. The food preservation and processing industry has now become a necessity rather than being a luxury. Food processing and preservation are important to prevent food loss, improve storage stability, and retain most nutrients during storage. Improperly stored food can cause foodborne diseases if consumed and result in revenue loss. It is estimated that about 15% of the food produced is lost after post-harvest.

The food processing sector is one of the largest sectors in India in terms of production, growth, consumption, and export. However, there exists a definite lack in processing and storage infrastructure and skilled manpower, which are essential to reducing the waste and enhancing the value addition and shelf life of the farm products. The government has ambitious plans to increase the level of processing, value addition and share in global food trade. This leads to the requirement of qualified and trained fruits & vegetable processing professionals. The main objective of writing this handbook is to impart knowledge of processing, packaging, quality test & registration of various traditional & value added fruits & vegetable products to the faculty & mentors who would utilize this knowledge & transfer the skills to candidates studying the paper including Food Technology graduates. This technology handbook covers the technical aspects of fruits and vegetables processing along with the knowledge of having start-up & business plan. The regulation, licensing, and registration requirements for the food industry in India as governed by the Food Safety and Standards Authority of India (FSSAI) is also added. The authors have tried to present the technical information in a simple way & hope that the handbook would meet the needs of Food Technology students, faculty, Extension workers & other interested users.

**Prof. Ranjana Singh**

**Dr. Twinkle Sachchan**





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