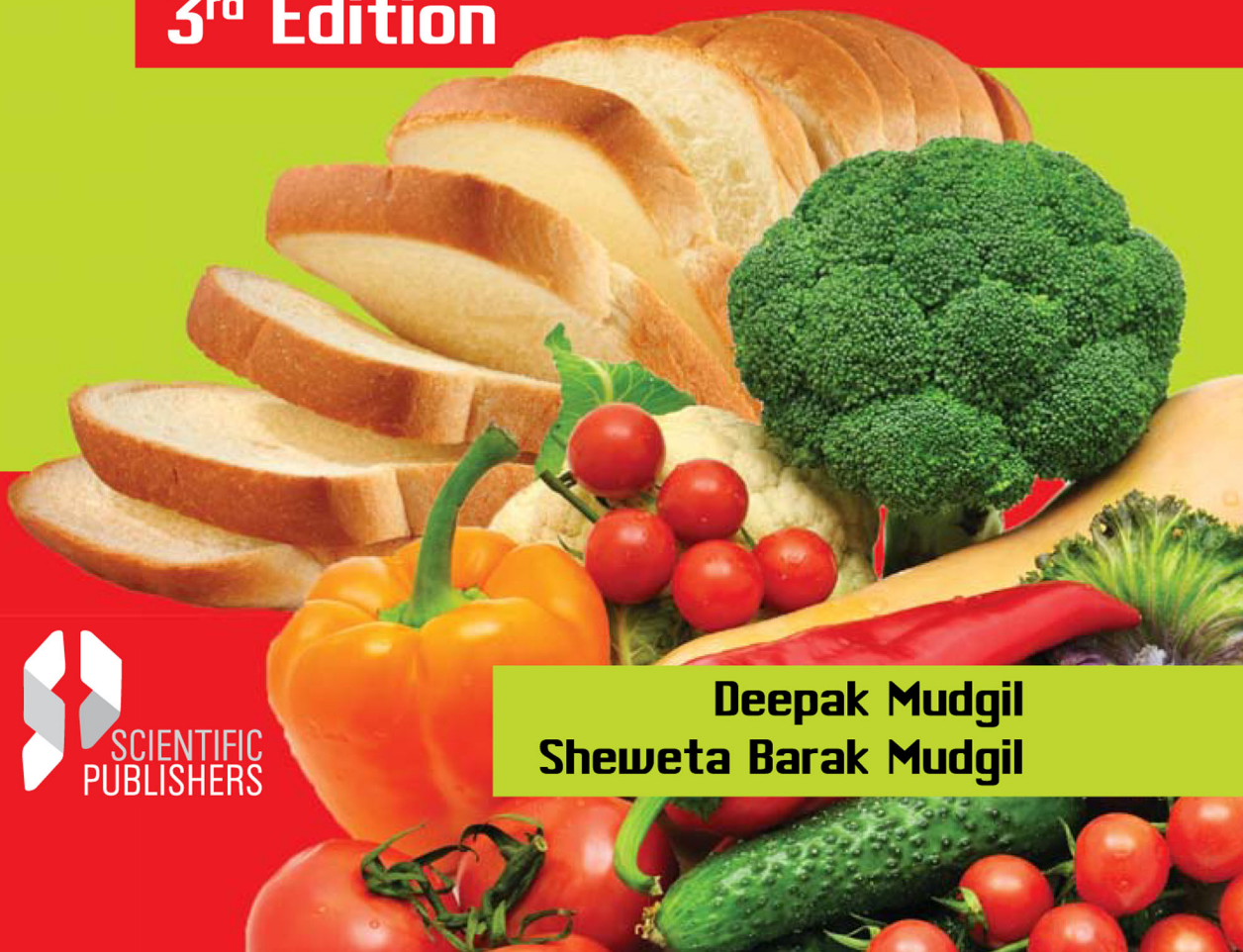


# Objective Food Science & Technology

3<sup>rd</sup> Edition



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Deepak Mudgil  
Sheweta Barak Mudgil



# **OBJECTIVE FOOD SCIENCE & TECHNOLOGY**

**(3rd Revised & Enlarged Edition)**

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# **MANSINHBHAI INSTITUTE OF DAIRY & FOOD TECHNOLOGY**

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## **FOREWORD**

The urbanization & changes in life style of Indian population has given new dimension to food habits & food consumption pattern. This has generated demand of qualified professionals in Food Science & Technology. There are more entrants in the field of food science than it was in the past.

The authors of this book have tried to page objectively terminology & main aspects of Food Science & Technology which is quite handy for preparation for students in this field. This book will also serve purpose as a Hand-book & reference book for updated objective information on recent developments in the areas of Food Science & Technology.

I congratulate authors for achieving the purpose & wish them best for the future.

**PRAMTHESH R PATEL**  
**EXECUTIVE DIRECTOR**  
**MIDFT, Mehsana**





## PREFACE

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Food Industry in India is a sunshine industry and India has the capability to become the food basket of the world. Food technology is establishing as an emerging field as a career choice in developing as well as developed countries. In the last decade, many Indian educational organizations including university departments, institutions, colleges and deemed universities have started undergraduate, postgraduate and doctorate degree programmes related to Food Technology, Food Processing, Food Engineering and allied courses such as Dairy Technology, Post Harvest Technology, Foods and Nutrition, Agricultural and Food Process Engineering etc. Many of these institutes conduct entrance examination for admission in these courses. There are also some national level examinations conducted every year in the area of Food Science and Technology such as ASRB-NET examination, ICAR JRF-SRF examination and IIT GATE examination. Hence there was a great need of an objective type book covering all important topics of subjects related to Food Science and Technology. Hence, the first edition of this book was written to compensate the demand of students and to help them in making their career in the areas of Food Science and Technology. The first edition of Objective Food Science & Technology covered objective information of the subjects such as Food Chemistry, Food Microbiology, Food Engineering, Dairy Technology, Fruits and Vegetables Technology, Cereals Technology, Meat Fish and Poultry Processing, Food Additives, Foods and Nutrition, Bioprocess Technology, Food Packaging and Miscellaneous topics. The revised second edition of this book included four new chapters of food analysis, functional foods, emerging food processing technologies and food biochemistry.

Third revised edition of this book has included previous five years solved question papers of ICAR-NET Exam question papers. The subjective keynotes of each chapter has been revised and updated. There are around 1500 subjective keynotes in the third edition of this book. Hence the revised edition can serve as a single platform for preparation of

competitive examinations in Food Science and Technology Discipline as it is having updated content of all areas of food science and technology. We wish to acknowledge authors and editors of all the books and research publications which helped us in the preparation of this book. The patience of Scientific Publishers (India) and the assistance provided by Scientific Publishers staff members are highly appreciated. Last but not least we must thank our family for their love, support and encouragement.

Deepak Mudgil  
Sheweta Mudgil

## PREFACE (2nd Edition)

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In India, food technology is coming as an emerging field from career point of view. In the last decade, many Indian educational organizations including university departments, institutions, colleges and deemed universities have started undergraduate, postgraduate and doctorate degree programmes related to Food Technology, Food Processing, Food Engineering and allied courses such as Dairy Technology, Post Harvest Technology, Foods and Nutrition, Agricultural and Food Process Engineering etc. Many of these institutes conduct entrance examination for admission in these courses. There are also some national level examinations conducted every year in the area of Food Science and Technology such as ASRB-NET examination, ICAR JRF-SRF examination and IIT GATE examination. Hence there was a great need of an objective type book covering all important topics of subjects related to Food Science and Technology. Hence, the first edition of this book was written to compensate the demand of students and to help them in making their career in the areas of Food Science and Technology. The first edition of Objective Food Science & Technology covered objective information of the subjects such as Food Chemistry, Food Microbiology, Food Engineering, Dairy Technology, Fruits and Vegetables Technology, Cereals Technology, Meat Fish and Poultry Processing, Food Additives, Foods and Nutrition, Bioprocess Technology, Food Packaging and Miscellaneous topics. The revised second edition of this book included four new chapters of food analysis, functional foods, emerging food processing technologies and food biochemistry. Hence the revised edition can serve as a single platform for preparation of competitive examinations in Food Science and Technology Discipline as it is having updated content of all areas of food science and technology. We wish to acknowledge authors and editors of all the books and research publications which helped us in the preparation of this book. The patience of Scientific Publishers (India) and the assistance provided by Scientific Publishers staff members are highly appreciated. Last but not least we must thank our family for their love, support and encouragement.

Deepak Mudgil  
Sheweta Mudgil

## PREFACE (1st Edition)

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In the last decade, many Indian educational organizations including university departments, institutions, colleges and deemed universities have started undergraduate, postgraduate and doctorate degree programmes related to Food Technology, Food Processing, Food Engineering and allied courses such as Dairy Technology, Post Harvest Technology, Foods and Nutrition, Agricultural and Food Process Engineering etc. Many of these institutes conduct entrance examination for admission in these courses. There are also some national level examinations conducted every year in the area of Food Science and Technology such as ASRB-NET examination, ICAR JRF-SRF examination and IIT GATE examination. Hence there is a great need of an objective type book covering all important topics of subjects related to Food Science and Technology. Hence, this book is written to compensate the demand of students and to help them in making their career in the areas of Food Science and Technology. This book includes the objective information of the subjects such as Food Chemistry, Food Microbiology, Food Engineering, Dairy Technology, Fruits and Vegetables Technology, Cereals Technology, Meat Fish and Poultry Processing, Food Additives, Foods and Nutrition, Bioprocess Technology, Food Packaging and Miscellaneous topics. Hence this book can serve as a single platform for preparation of competitive examinations in Food Science and Technology Discipline. We wish to acknowledge authors and editors of all the books and research publications which helped us in the preparation of this book. The patience of Scientific Publishers (India) and the assistance provided by Scientific Publishers staff members are highly appreciated. Also a special thanks to Prof. B.S. Khatkar and Sh. P.R. Patel for their support, inspiration and encouragement. Last but not least we must thank our family for their love, support and encouragement.

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Sheweta Mudgil

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