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KEY=SUHU - TRAVIS ALEXANDER

PROCEEDING BOOK OF PROCEEDING INDONESIAN TEXTILE CONFERENCE : TEXTILE 4.0 CLOTHING AND BEYOND (INTERNATIONAL CONFERENCE)

Penerbit Politeknik STTT Bandung Welcome to the 3rd Indonesian Textile Conference (ITC) 2019. It is our great honor and pleasure to have you all here today. Indonesian Textile Conference is by far the only scientific event in the field of textiles in Indonesia aimed to bring together leading researchers, experts, students and people from the industry to share their knowledge and exchange scientific ideas. Indonesia is one of the leading textile exporter countries in the world with a total export value of USD 15.3 billion in 2015 and ranked the third after palm oil and steel (source: Ministry of Industry of Republic of Indonesia). It is one of the ten priority industries and the mainstay of Indonesian national industry. In a global economy and fast changing world, the future of Indonesian textile industry will increasingly depend on the industry’s ability to relentlessly innovate in its products, to use the most advanced, flexible and resource-efficient processes and to focus its organizational structure as well as business operations according to the ever changing and growing needs of its customers. In all that, research and innovation are vital and play an ever increasing role. Indonesian Textile Conference was initiated and is dedicated to promote and bring progress to research and innovation in the field of textile and textile-related subjects in Indonesia. Textile is a rich multidisciplinary area of study and in fact has attracted a great deal of attention and numerous contributions from non-textile scientists. It is not just about clothing. It is all about material and all aspects that are inherent in the process of its production and applications. It covers a whole lot of area which includes but not limited to: advanced material and textile

fibers, natural fibers and natural dyes, utilization of natural sources for textiles in general and/or functional textiles, environmental protection and ecological considerations in textile industry, life cycle analysis, clean/green production, best practices in energy efficient processes, bio-based polymer, bioengineering, nanotechnology, textile-based composites, industrial management and engineering, traditional textiles and batik, textile preservation and conservation, and design. Smart, functional and interactive textile is another area of interest which is quite recent and resulted from the convergence of latest developments in material science, physics and chemistry, microelectronics and informatics. Stimuli responsive materials, self-healing polymers, textile energy devices, textile sensor and antenna are only a few examples of development in this area. Recently added to this is a new emerging “fashionable technology”. It is a new concept that brings fashion to the next level by integrating technology and fashion. It looks at the future fashion as intersection of design, fashion, science, and technology beyond wearable technology. Still another important and interesting issue in textile is sustainability, especially due to the stigma associated with the industry as the big polluter and being not environmentally-friendly. Sustainable textiles and clothing involves the choice of materials, technologies and processing methods that ensure environmental and social friendliness and safety to human health throughout the entire life-cycle phases. Thus, there is an ample room for almost everyone to contribute in this conference. On behalf of the Organizing Committee and the management of Politeknik STTT Bandung, have a productive and fruitful conference.

ENERGI DAN TEKNOLOGI UNTUK PERTANIAN INDUSTRIAL BERKELAJUTAN

PT Penerbit IPB Press Buku ini ditujukan kepada mahasiswa, dosen, dokter residen atau penggiat dalam kedokteran nuklir, serta warga yang sedang berkecimpung dalam bidang radiologi, patologi, dan penyakit yang ingin memperoleh pengetahuan kedokteran nuklir. Mereka yang ingin maju dalam mempelajari dan menguasai ilmu dan teknologi kedokteran nuklir dalam bidang akan menemukan buku ini sebagai sesuatu yang berguna.

TEKNOLOGI ENZIM

Universitas Brawijaya Press Buku ini berisi pengenalan terhadap enzim dan pemanfaatannya di berbagai industri. Pada bagian awal dibahas mengenai struktur enzim, sifat-sifat dan faktor-faktor yang mempengaruhi aktivitasnya. Kemudian disajikan pula tentang teknik produksi, pemurnian dan imobilisasi serta contoh aplikasinya dalam industri. Diharapkan dengan membaca buku ini, pembaca dapat memahami peran teknologi enzim dalam pemenuhan kebutuhan manusia baik barang dan jasa dengan cara-cara produksi yang berkelanjutan dan memperhatikan kelestarian lingkungan.

HANDBOOK OF AMYLASES AND RELATED ENZYMES

THEIR SOURCES, ISOLATION METHODS, PROPERTIES AND APPLICATIONS

Elsevier This handbook, published to mark the 20th anniversary of The Amylase Research Society of Japan, presents a concise account of the properties and applications of amylases and related enzymes. Enzymes are discussed with reference to their source, isolation method, properties, inhibition, kinetics and protein structure. This information is then applied in the description and interpretation of their use in industry. As well as amylases, other enzymes capable of catalyzing reactions with starch and glycogen, and the further conversion of amylase reaction products for industrial applications are discussed. The text is supported by numerous explanatory figures and tables, and each section is fully referenced.

KONPERENSI NASIONAL KELAPA III, YOGYAKARTA, 20-23 JULI 1993

PROSIDING

Proceedings of the 3rd National Coconut Conference.

FERMENTATION AND ENZYME TECHNOLOGY

John Wiley & Sons Incorporated Coordination of microbial metabolism. Biosynthesis of primary metabolites. Biosynthesis of secondary metabolites. Bioconversions. Regulation of enzyme production. Fermentation kinectics. Continuous culture. Kinectis and engineering of medium sterilization. Aeration and agitation. Translation of laboratory, pilot, and plant scale data. Instrumentation and control. Enzyme isolation. Enzyme kinectics and immobilization. Enzyme reactors.

METHODS OF ENZYMATIC ANALYSIS, METHODS OF ENZYMATIC ANALYSIS

VOLUME 3: ENZYMES 1: OXIDOREDUCTASES, TRANSFERASES

Wiley-Blackwell

BIOLOGY

Erlangga

ENZYMES IN FOOD PROCESSING

Springer Science & Business Media Recent years have seen a rapid increase in the use of enzymes as food processing tools, as an understanding of their means of control has improved. Since publication of the first edition of this book many new products have been commercially produced and the corresponding number of published papers has swollen. This second edition has been fully revised and updated to cover changes in the last five years. It continues to provide food technologists, chemists, biochemists and microbiologists with an authoritative, practical and detailed review of the subject.

TEKNOLOGI FERMENTASI

Yayasan Kita Menulis Teknologi Fermentasi" dengan tepat waktu. Tujuan dari penulisan buku ini tidak lain adalah untuk membantu dalam memahami seperti apa Teknologi Fermentasi. Buku ini juga akan memberikan informasi secara lengkap mengenai: Bab 1 Pengantar dan Sejarah Perkembangan Teknologi Fermentasi Bab 2 Proses – Proses Fermentasi Bab 3 Peran Mikroorganisme dalam Industri Bab 4 Isolasi Dan Penyimpanan Kultur Mikroba Bab 5 Laju Pertumbuhan Bab 6 Media Fermentasi Bab 7 Faktor Lingkungan Bab 8 Teknologi Fermentasi Tempe Bab 9 Teknologi Fermentasi Kecap Bab 10 Teknologi Fermentasi Kombucha Bab 11 Teknologi Fermentasi Susu Bab 12 Teknologi Enzim Bab 13 Teknologi Bioetanol

FOOD ENGINEERING LABORATORY MANUAL

Routledge FROM THE PREFACE The purpose of this laboratory manual is to facilitate the understanding of the most relevant unit operations in food engineering. The first chapter presents information on how to approach laboratory experiments; topics covered include safety, preparing for a laboratory exercise, effectively performing an experiment, properly documenting data, and preparation of laboratory reports. The following eleven chapters cover unit operations centered on food applications: dehydration . . . . , thermal processing, friction losses in pipes, freezing, extrusion, evaporation, and physical separations. These chapters are systematically organized to include the most relevant theoretical background pertaining to each unit operation, the objectives of the laboratory exercise, materials and methods . . ., expected results, examples, questions, and references. The experiments presented have been designed for use with generic equipment to facilitate the adoption of this manual . . . .

HYPERTHERMOPHILIC ENZYMES

FOOD BIOCHEMISTRY AND FOOD PROCESSING

John Wiley & Sons The biochemistry of food is the foundation on which the research and development advances in food biotechnology are built. In Food Biochemistry and Food Processing, lead editor Y.H. Hui has assembled over fifty acclaimed academicians and industry professionals to create this indispensable reference and text on food biochemistry and the ever-increasing development in the biotechnology of food processing. While biochemistry may be covered in a chapter or two in standard reference books on the chemistry, enzymes, or fermentation of food, and may be addressed in greater depth by commodity-specific texts (e.g., the biotechnology of meat, seafood, or cereal), books on the general coverage of food biochemistry are not so common. Food Biochemistry and Food Processing effectively fills this void. Beginning with sections on the essential principles of food biochemistry, enzymology and food processing, the book then takes the reader on commodity-by-commodity discussions of biochemistry of raw materials and product processing. Later sections address the biochemistry and processing aspects of food fermentation, microbiology, and food safety. As an invaluable reference tool or as a state-of-the-industry text, Food Biochemistry and Food Processing fully develops and

explains the biochemical aspects of food processing for scientist and student alike.

COLOR ATLAS OF BIOCHEMISTRY

Thieme Totally revised and expanded, the Color Atlas of Biochemistry presents the fundamentals of human and mammalian biochemistry on 215 stunning color plates.Alongside a short introduction to chemistry and the classical topics of biochemistry, the 2nd edition covers new approaches and aspects in biochemistry, such as links between chemical structure and biological function or pathways for information transfer, as well as recent developments and discoveries, such as the structures of many new important molecules. Key features of this title include:- The unique combination of highly effective color graphics and comprehensive figure legends;- Unified color-coding of atoms, coenzymes, chemical classes, and cell organelles that allows quick recognition of all involved systems;- Computer graphics provide simulated 3D representation of many important molecules.This Flexibook is ideal for students of medicine and biochemistry and a valuable source of reference for practitioners.

PRACTICAL ENZYMOLOGY

John Wiley & Sons A practice-oriented guide to assaying more than 100 of the most important enzymes, complete with the theoretical background and specific protocols for immediate use in the biochemical laboratory. Now expanded with a new section on metal ion determination.

INDUSTRIAL APPLICATIONS

Springer Science & Business Media Mycology, the study of fungi, originated as a subdiscipline of botany and was a descrip tive discipline, largely neglected as an experimental science until the early years of this century. A seminal paper by Blakeslee in 1904 provided evidence for self incompatibility, termed "heterothallism", and stimulated interest in studies related to the control of sexual reproduction in fungi by mating-type specificities. Soon to follow was the demonstration that sexually reproducing fungi exhibit Mendelian inheritance and that it was possible to conduct formal genetic analysis with fungi. The names Burgeff, Kniep and Lindegren are all associated with this early period of fungal genetics research. These studies and the discovery of penicillin by Fleming, who shared a Nobel Prize in 1945, provided further impetus for experimental research with fungi. Thus began a period of interest in mutation induction and analysis of mutants for biochemical traits. Such fundamental research, conducted largely with Neurospora crassa, led to the one gene: one enzyme hypothesis and to a second Nobel Prize for fungal research awarded to Beadle and Tatum in 1958. Fundamental research in biochemical genetics was extended to other fungi, especially to Saccharomyces cerevisiae, and by the mid-1960s fungal systems were much favored for studies in eukaryotic molecular biology and were soon able to compete with bacterial systems in the molecular arena.

BIOCHEMICAL ENGINEERING FUNDAMENTALS

McGraw-Hill Science, Engineering & Mathematics Biochemical Engineering Fundamentals, 2/e, combines contemporary engineering science with relevant biological concepts in a comprehensive introduction to biochemical engineering. The biological background provided enables students to comprehend the major problems in biochemical engineering and formulate effective solutions.

ENZYME STRUCTURE AND MECHANISM

This is the second edition of this biological reference aimed at undergraduates and graduates. The book covers the structure and mechanism of enzymes, creating a guide to the current understanding of enzymology.

UNDERSTANDING ENZYMES

FUNCTION, DESIGN, ENGINEERING, AND ANALYSIS

CRC Press Understanding Enzymes: Function, Design, Engineering, and Analysis focuses on the understanding of enzyme function and optimization gained in the past decade, past enzyme function analysis, enzyme engineering, and growing insights from the simulation work and nanotechnology measurement of enzymes in action in vitro or in silico. The book also presents new insights into the mechanistic function and understanding of enzyme reactions, as well as touching upon structural characteristics, including X-ray and nuclear magnetic resonance (NMR) structural methods. A major focus of the book is enzyme molecules' dependency on dynamic and biophysical environmental impacts on their function in ensembles as well as single molecules. A wide range of readers, including academics, professionals, PhD and master's students, industry experts, and chemists, will immensely benefit from this exclusive book.

THE ENZYMES

Academic Press

FISH NUTRITION IN AQUACULTURE

Springer Science & Business Media Aquaculture is a growing industry. A vital component of the subject is feeding the organisms under cultivation. This book provides a thorough review of the scientific basis and applied aspects of fish nutrition in a user-friendly format. It will be of great use to individuals working or training in the industry, and to fish feed manufacturing personnel.

INDUSTRIAL MICROBIOLOGY

BIOCATALYSIS

FROM DISCOVERY TO APPLICATION

Springer Science & Business Media Here, leading contributors from the forefront of this exciting technology present authoritative and timely reviews on the state of the

art of biocatalysis. They cover the whole spectrum from the discovery of novel enzymes - by modern screening, evolutionary or immunological approaches - through immobilization techniques for technical processes, to their use in the asymmetric synthesis of important target compounds.

BIOPROCESS ENGINEERING

BASIC CONCEPTS

For Senior-level and graduate courses in Biochemical Engineering, and for programs in Agricultural and Biological Engineering or Bioengineering. This concise yet comprehensive text introduces the essential concepts of bioprocessing-internal structure and functions of different types of microorganisms, major metabolic pathways, enzymes, microbial genetics, kinetics and stoichiometry of growth and product information-to traditional chemical engineers and those in related disciplines. It explores the engineering principles necessary for bioprocess synthesis and design, and illustrates the application of these principles to modern biotechnology for production of pharmaceuticals and biologics, solution of environmental problems, production of commodities, and medical applications.

INSTANT NOTES IN BIOCHEMISTRY

Garland Science A major update of the highly popular second edition, with changes in the content and organisation that reflect advances in the subject. New and expanded topics include cytoskeleton, molecular motors, bioimaging, biomembranes, cell signalling, protein structure, and enzyme regulation. As with the first two editions, the third edition of Instant Notes in Biochemistry provides the essential facts of biochemistry with detailed explanations and clear illustrations.

BEHAVIOUR OF SALIVARY AMYLASE IN VARIOUS REACTION ENVIRONMENTS WITH REFERENCE TO KM AND VMAX. AN OVERVIEW

GRIN Verlag Scientific Study from the year 2016 in the subject Chemistry - Bio-chemistry, grade: 1.5, Mar Augusthinose College, language: English, abstract: Amylase is an enzyme which catalyzes the hydrolysis of α (1, 4)-glycosidic linkages in amylose (a linear form of starch), amylopectin (a branched form of starch) and glycogen into simpler carbohydrate molecules such as oligosaccharides or disaccharides. Alpha-amylase is the major form of amylase found in human, most prominently in pancreatic juice and saliva. The salivary amylase is an amylolytic enzyme, which can acts on cooked or boiled starch and converts it in to maltose. So it became interesting to study the behaviour of salivary amylase, when it is secreted as result of different stimuli. And thus began to study the effect of five different stimulatory temperatures, and also the effect of four tastes on the behaviour of salivary amylase. For the study of stimulatory effect of temperature on salivary amylase, five different temperatures are selected (4, 27, 37, 55 and 75°C). And likewise four tastes also selected (sweet, sour, salt and bitter). The DNS method was done in the both tests to obtain the absorbance at 520 nm. The samples were collected from three people, of same age. The saliva was collected at same time,

after one and a half hour of their breakfast in order to maintain a controlled condition for this study. In each cases the incubation temperature also kept as variable (4, 27, 37, 55 and 75°C). This study was also aimed to determine the behaviour of salivary amylase with reference to the kinetic parameters like Km and Vmax of salivary alpha amylase by incubating the enzyme (stimulated by different stimulatory conditions of temperature and taste) with varying concentration of substrate. The study revealed the consistency in kinetic parameters like Km and Vmax of salivary alpha amylase secreted in response to various stimuli.

MOLECULAR BIOLOGY AND GENETIC ENGINEERING OF YEASTS

CRC Press Molecular Biology and Genetic Engineering of Yeasts presents a comprehensive examination of how yeasts are used in genetic engineering. The book discusses baker's yeast, in addition to a number of unconventional yeasts being used in an increasing number of studies. 175 figures help illustrate the information presented. Topics discussed include yeast transformation, yeast plasmids, protein localization and processing in yeast, protein secretion, various aspects of Saccharomyces cerevisiae, and heterologous expression and secretion.

FOOD CHEMISTRY, THIRD EDITION

CRC Press "Offers up-to-the-minute coverage of the chemical properties of major and minor food constituents, dairy products, and food tissues of plant and animal origin in a logically organized, step-by-step presentation ranging from simple to more complex systems. Third Edition furnishes completely new chapters on proteins, dispersions, enzymes, vitamins, minerals, animal tissue, toxicants, and pigments."

THERMOPHILIC BACTERIA

CRC Press Thermophilic Bacteria is a comprehensive volume that describes all major bacterial groups that can grow above 60-65°C (excluding the Archaea). Over 60 different species of aerobic and anaerobic thermophilic bacteria are covered. Isolation, growth methods, characterization and identification, ecology, metabolism, and enzymology of thermophilic bacteria are examined in detail, and an extensive compilation of recent biotechnological applications and the properties of many thermostable enzymes are also included. Major topics discussed in the book include a general review on thermophilic bacteria and archaea; heterotropic bacilli; the genus Thermus; new and rare genera of aerobic heterophophs, such as Saccharococcus, Rhodothermus, and Scotohermus; aerobic chemolithoautotrophic thermophilic bacteria; obligately anaerobic thermophilic bacteria; and hyperthermophilic Thermotogales and thermophilic phototrophs. Extensive bibliographies are also provided for each chapter. The vast amount of information packed into this one volume makes it essential for all microbiologists, biochemists, molecular biologists, and students interested in the expanding field of thermophilicity. Biotechnologists will find the book useful as a source of information on thermophiles or thermostable enzymes of possible industrial use.

LABORATORY MANUAL IN BIOCHEMISTRY

GLUCOSE SYRUPS

SCIENCE AND TECHNOLOGY

Elsevier Applied Science

FOOD INDUSTRIES MANUAL

Springer Science & Business Media It is a measure of the rapidity of the changes The work has been revised and updated, and taking place in the food industry that yet another following the logic of the flow sheets there is some edition of the Food Industries Manual is required simplification and rearrangement among the chap after a relatively short interval. As before, it is a ters. Food Packaging now merits a separate pleasure to be involved in the work and we hope chapter and some previous sections dealing mainly that the results will continue to be of value to with storage have been expanded into a new readers wanting to know what, how and why the chapter covering Food Factory Design and Opera food industry does the things which it does. tions. For this edition we have made a major depar There is one completely new chapter, entitled ture from the style of earlier editions by comple Alcoholic Beverages, divided into Wines, Beers tely revising the layout of many of the chapters. and Spirits. There is a strain of thought which Previously the chapters were arranged as a series does not yet consider the production of those of notes on specific topics, set out in alphabetical drinks to be a legitimate part of the food industry, order in the manner of an encyclopaedia.

MICROFILTRATION AND ULTRAFILTRATION

PRINCIPLES AND APPLICATIONS

Routledge Integrates knowledge on microfiltration and ultrification, membrane chemistry, and characterization methods with the engineering and economic aspects of device performance, device and module design, processes, and applications. The text provides a discussion of membrane fundamentals and an analytical framework for designing and developing new filtrations systems for a broad range of technologically important functions. It offers information on membrane liquid precursors, fractal and stochastic pore space analysis, novel and advanced module designs, and original process design calculations.

INTEGRATION OF MEMBRANE PROCESSES INTO BIOCONVERSIONS

Springer Contains papers from an August 1999 event held in Hungary, covering fundamentals of membrane processes, an introduction to biochemical engineering, and integration of membrane processes and bioconversions. Specific topics include transport phenomena in membrane separations, membrane based processes with immobilized interfaces, enzyme catalyzed reactions, bioreactor design using living cells or organisms, biocatalysts and membranes, and nanofiltration applications on food technology and environmental protection. Other subjects are membrane

bioreactors, extraction of aromas from active fermentation reactors by pervaporation, and membrane fermentors. The editor is affiliated with the Research Institute for Chemical and Process Engineering. Annotation copyrighted by Book News, Inc., Portland, OR

APPLIED NUMERICAL METHODS USING MATLAB

John Wiley & Sons In recent years, with the introduction of new media products, therehas been a shift in the use of programming languages from FORTRANor C to MATLAB for implementing numerical methods. This book makesuse of the powerful MATLAB software to avoid complex derivations,and to teach the fundamental concepts using the software to solvepractical problems. Over the years, many textbooks have beenwritten on the subject of numerical methods. Based on their courseexperience, the authors use a more practical approach and linkevery method to real engineering and/or science problems. The mainbenefit is that engineers don't have to know the mathematicaltheory in order to apply the numerical methods for solving theirreal-life problems. An Instructor's Manual presenting detailed solutions to all theproblems in the book is available online.

MICROBIAL ENZYMES AND BIOTECHNOLOGY

Springer Science & Business Media Biotechnology is now one of the major growth areas in science and engineering and within this broad discipline enzyme technology is one of the areas earmarked for special and significant developments. This publication is the second edition of Microbial Enzymes and Biotechnol ogy which was originally published in 1983. In this edition the editors have attempted to bring together accounts (by the relevant experts) of the current status of the major areas of enzyme technology and specifically those areas of actual and/or potential commercial importance. Although the use of microbial enzymes may not have expanded at quite the rate expected a decade ago, there is nevertheless intense activity and considerable interest in the whole area of enzyme technology. Microbial enzymes have been used in industry for many centuries although it is only comparatively recently that detailed knowledge relating to their nature, properties and function has become more evident. Developments in the 1960s gave a major thrust to the use of microbial enzymes in industry. The commercial success of alkaline proteases and amyloglucosidases formed a bed-rock for subsequent research and development in the area.

PROTEIN ANALYSIS AND PURIFICATION

BENCHTOP TECHNIQUES

Springer Science & Business Media This book is designed to be a practical progression of experimental techniques an investigator may follow when embarking on a biochemical project. The protocols may be performed in the order laid out or may be used inde pendently. The aim of the book is to assist a wide range of researchers. from the novice to the frustrated veteran, in the choice and design of experiments that are to be performed to provide answers to specific questions. The

manual describes standard techniques that have been shown to work, as well as some newer ones that are beginning to prove important. By following the promi nently numbered steps. you can work your way through any protocol. whether it's a new technique or a task you've done before for which you need a quick review or updated methodology. This manual will assist the experimentalist in designing properly controlled experiments. There will be no advice for dealing with specific pieces of equip ment other than encouragement to read the manual, if you can find it. Through out all manipulations try to be objective. Be on the lookout for unexpected findings. You will learn the most from unexpected results. and they are often the beginning of the next project. It is never possible to record too much in your lab notebook. Do not get discouraged. Remember, things will not always run smoothly.

MOLECULAR TECHNIQUES IN FOOD BIOLOGY

SAFETY, BIOTECHNOLOGY, AUTHENTICITY AND TRACEABILITY

John Wiley & Sons Molecular Techniques in Food Biology: Safety, Biotechnology, Authenticity and Traceability explores all aspects of microbe-food interactions, especially as they pertain to food safety. Traditional morphological, physiological, and biochemical techniques for the detection, differentiation, and identification of microorganisms have severe limitations. As an alternative, many of those responsible for monitoring food safety are turning to molecular tools for identifying foodborne microorganisms. This book reviews the latest molecular techniques for detecting, identifying, and tracing microorganisms in food, addressing both good foodborne microbes, such as those used for fermentation and in probiotics, and harmful ones responsible for foodborne illness and food quality control problems. Molecular Techniques in Food Biology: Safety, Biotechnology, Authenticity and Traceability brings together contributions by leading international authorities in food biology from academe, industry, and government. Chapters cover food microbiology, food mycology, biochemistry, microbial ecology, food biotechnology and bio-processing, food authenticity, food origin traceability, and food science and technology. Throughout, special emphasis is placed on novel molecular techniques relevant to food biology research and for monitoring and assessing food safety and quality. Brings together contributions from scientists at the leading edge of the revolution in molecular food biology Explores how molecular techniques can satisfy the dire need to deepen our understanding of how microbial communities develop in foods of all types and in all forms Covers all aspects of food safety and hygiene, microbial ecology, food biotechnology and bio-processing, food authenticity, food origin traceability, and more Fills a yawning gap in the world literature on food traceability using molecular techniques This book is an important working resource for professionals in the agricultural, food and biomedical sciences, as well as government personnel involved in food regulation and safety. It is also an excellent reference for advanced students in agriculture, food science and food technology, biochemistry, microbiology, and biotechnology, as well as academic researchers in those fields.

MICROBIAL LIFE IN EXTREME ENVIRONMENTS

INTRODUCTORY MYCOLOGY

Larsen and Keller Education Mycology is the branch of biology that is concerned with the study of fungi, their genetic and biochemical properties, their taxonomy and applications for human use. Fungi can be both harmful and beneficial to humans. Fungi produce antibiotics, toxins and secondary metabolites. They can cause toxicity or infection, but they can also be a source of tinder, food, medicine and entheogens. Many species of mushrooms are cultivated for food, such as button mushrooms, Portobello mushrooms, oyster mushrooms and shiitakes, besides many others. Penicillin, lovastatin, griseofulvin, etc. are some drugs produced using fungi. Many varieties of fungi are used for the industrial production of vitamins, antibiotics and cholesterol-lowering drugs. Fungi can also be useful in suppressing plant pathogens like weeds, insects, mites, etc. in agriculture. This book provides comprehensive insights into the field of mycology. It aims to shed light on some of the unexplored aspects of this field. This textbook is appropriate for those seeking detailed information in this area.