Biotechnology, Nanoscience, Nanotechnology, Enzymes, Food Biotechnology ,Vermiculture , Vermicompost , Bio-Fertilizer, Organic Farming, Biogas

NIIR Handbook On Projects In Export Thrust Area With International Market Survey (Biotech & Pharmaceutical Technology)

Author: NIIR Board
Format: Hardcover
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Modern pharmaceutical manufacturing techniques frequently rely upon biotechnology. The emergence of biotechnology over the past several decades has transformed the drug business and ushered in a host of new participants and several novel business models. Biotechnology (Biotech) is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Biotechnology also utilizes these products for manufacturing purpose. Modern use of similar terms includes genetic engineering as well as cell and tissue culture technologies. The concept encompasses a wide range of procedures (and history) for modifying living organisms according to human purposes, going back to domestication of animals, cultivation of plants, and improvements to these through breeding programs that employ artificial selection and hybridization. As understanding of biological systems has forged ahead, pharmaceutical companies have made increasing use of biotechnology in discovering and manufacturing new medicines. Biotechnology helps the pharmaceutical industry to develop new products, new processes, methods and services and to improve existing ones. This book explains about the Market survey, manufacturing processes and other details of various enzymes (e.g. pectolytic enzyme, lytic enzyme, etc.), antibiotics, biofertilizer, etc. It also provides applications of biotechnology in agriculture (bioinsecticides & biopesticides, hybrid seeds, tissue culture, etc.), animal husbandry, aquaculture, human health, population control, fuel & fodder, waste etc. Comprehensive in scope, the book provides solutions that are directly applicable to the properties, manufacturing technology and other specific details of enzymes, antibiotics, biofertilizer, insulin and growth hormone, aqua culture, floriculture, tissue culture, bulk drug intermediate. Research scholars, professional students, scientists, new entrepreneurs, and present manufacturers will find valuable educational material and wider knowledge of the subject in this book.

Biotech & Pharmaceutical Handbook

Author: P.K.Chattopadhyay
Format: Hardcover
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Pages: 231
ISBN: 8186623019
Price: **Rs.** 1,895.00 **US$** 50.95
**********Limited Edition- available in Photostat Version Only********** Pharmaceutical industry has close linkages with imports of material and technology or processes know how and therefore with international economics. Modern pharmaceutical manufacturing techniques frequently rely upon biotechnology. The emergence of biotechnology over the past several decades has transformed the drug business and ushered in a host of new participants and several novel business models. Biotechnology (Biotech) is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Biotechnology also utilizes these products for manufacturing purpose. Modern use of similar terms includes genetic engineering as well as cell and tissue culture technologies. The concept encompasses a wide range of procedures (and history) for modifying living organisms according to human purposes, going back to domestication of animals, cultivation of plants, and improvements to these through breeding programs that employ artificial selection and hybridization. As understanding of biological systems has forged ahead, pharmaceutical companies have made increasing use of biotechnology in discovering and manufacturing new medicines. Biotechnology helps the pharmaceutical industry to develop new products, new processes, methods and services and to improve existing ones. Drug & pharmaceutical industry is one of the basic industries in India. Recent moves in globalisation and liberalisation have affected this industry perhaps the highest. Modern biotechnology can be used to manufacture existing medicines relatively easily and cheaply. The first genetically engineered products were medicines designed to treat human diseases. To cite one example, in 1978 Genentech developed synthetic humanized insulin by joining its gene with a plasmid vector inserted into the bacterium Escherichia coli. The domestic pharmaceutical industry could attain a size of USD 25 bn (Rs 1200 bn) by focusing on two areas: first, innovation-led research, development and new drug discoveries; and second, information technology-led remote sales and mar-keting. Incidentally, according to another report by Associated Chamber of Commerce (ASSOCHAM) in India, the market is estimated to grow to more modest level of USD 9.5 bn. India has the world's third largest active pharmaceutical ingredients

(API) for the industry valued at a little less than USD 2 bn. Top 5 API producers account for approximately 6.5 %. The leading APIs are anti-infective, gastrointestinal, cardiovascular and respiratory drugs. The Chemical Pharmaceutical Generic Association (CPA) projects that India's share of the world API market will grow by 10.5% as patented blockbuster drugs lose their patent protection. The CPA also expects that the domestic Indian market for APIs, both generic and branded, will rise from USD 755 mn to USD 1.9. Indian pharmaceutical companies now supply nearly all the country's demand for formulations and nearly 70% of its demand for bulk drugs. The Indian firms produce nearly 60,000 generic brands in 60 therapeutic categories and between 350 and 400 bulk drugs. India's drug market consists mainly of second and third generation drugs no longer subject to patent protection in the developed world. The content of the book includes information about bio-tech and pharmaceuticals. The major contents of this book are project profiles of projects like enzymes, antibiotics, bio fertilizer, insulin and growth hormone, aqua culture, floriculture, tissue culture, bulk drug intermediate. Project profile contains information like introduction, manufacturing process, process flow sheet, uses and applications, suppliers of raw materials, suppliers of plant and machinery, cost analysis. This book is very useful for new entrepreneurs, technical institutions, existing units and technocrats.

Author: NIIR Board
Format: Paperback
Book Code: NI82
Pages: 682
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Price: **Rs.** 1,100.00 **US$** 29.73

Biotechnology is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Biotechnology also utilizes these products for manufacturing purpose. Modern use of similar terms includes genetic engineering as well as cell and tissue culture technologies. Biotechnology draws on the pure biological sciences and in many instances is also dependent on knowledge and methods from outside the sphere of biology. Conversely, modern biological sciences are intimately entwined and dependent on the methods developed through biotechnology and what is commonly thought of as the life sciences industry. It has a major application in modern brewing technology which includes the production of whisky, traditional fermented soybean foods bacterial biomass, cheese starters, cheese technology, L glutamic acid fermentation etc. Biotechnology and cell molecular biology have developed and emerged in to a major discipline during last two decades. Biotechnology is also used to recycle, treat waste, microbial treatment and utilization a waste. The growing global demand for biotechnology products, India has rich biodiversity that drives its clinical trials industry and forms a strong base for pharmaceutical research. In recent years, the worldwide biotechnology based products market has grown at an annual average rate of 15%. This book majorly deals with introduction to basic biotechnology, downstream processing in biotechnology, modern brewing technology, industrial chemicals, biochemical and fuels, microbial flavours and fragrances, biodegradation of non cellulosic wastes for environmental conservation and fuel production, landfills for treatment of solid wastes etc. This book also consists of addresses of machinery suppliers, addresses of chemical suppliers, list of universities, conducting Biotechnology courses in the directory section. This is a unique book, concise, up to date resource offering an innovative, adoptive and valuable presentation of the subject. It covers all important biotechnological topics of industrial and academic interests. This book will be very use full for industry people, students, and libraries and for those who want to venture in to manufacturing of biotechnological products.

Author: NIIR Board of Consultants and Engineers
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Industrial biotechnology is the practice of using cells to generate industrially useful products. An enzyme is a protein that catalyzes, or speeds up, a chemical reaction. Enzymes are the focal point of biotechnological processes, without them biotechnology as a subject would not exist. The main advantage of enzymes compared to most other catalysts is their stereo, region and chemo selectivity and specificity. Enzymes are responsible for many essential biochemical reactions in micro organisms, plants, animals, and human beings. Biotechnology processes may have potential in energy production, specifically in the substitution of renewable plant biomass for fossil feedstock. This will depend on the development of enzymes able to degrade cellulose in plant biomass and designing methods to recycle or dispose of spent biomass. With time, research, and improved protein engineering methods, many enzymes have been genetically modified to be more effective at the desired temperatures, pH, or under other manufacturing conditions typically inhibitory to enzyme activity (e.g. harsh chemicals), making them more suitable and efficient for industrial or home applications. Enzymes are used in the extraction of natural products, as catalysts in organic chemistry, in clinical analysis, in industrial processes, and so on. The application of enzymes is found in many different fields and it is one of the good sectors to venture. In coming few years it is estimated that world enzyme demand will average annual increases of 6.3 percent. This book basically deals with principles of industrial enzymology, basis of utilization of soluble and immobilized, enzymes in industrial processes, principles of immobilization of enzymes, enzymes in clinical analysis principles, practical aspects of large-scale protein purification, the applications of enzymes in industry, use of enzymes in the extraction of natural products, data on techniques of enzyme immobilization and bio affinity procedures etc. In this book you can find all the basic information required on the fundamental aspects of the enzymes, their chemistry, bio chemistry as well as detailed information of their applications a wide variety of industrial processes etc. The book is very useful for research scholars, technocrats, institutional libraries and entrepreneurs who want to enter into the field of manufacturing of enzymes.

Handbook on Biogas and Its Applications(from Waste & Renewable Resources with Engineering & Design Concepts)(2nd Revised Edition)

Author: NIIR Board of Consultants & Engineers
Format: Paperback
Book Code: NI114
Pages: 384
ISBN: 9789381039779
Price: **Rs.** 1,175.00 **US$** 31.75

Bio Gas typically refers to a gas produced by the biological breakdown of organic matter in the absence of oxygen. Organic waste such as dead plant and animal material, animal dung, and kitchen waste can be converted into a gaseous fuel called Bio Gas. Bio Gas is basically a mixture of methane and carbon dioxide; it originates from biogenic material and is a type of bio fuel. It is a low cost form of energy derived from renewable waste resources: animal manures, agricultural residues, industrial wastewater, human waste and other organic materials. Bio Gas has been used widely as a source of energy and waste treatment, and as liquid fertiliser for soil enhancement, since long time. Digestion the underlying biological process of Bio Gas technology leads to a renewable energy service that ensures a distributed energy production, in which the energy is produced at the point of consumption or demand. A Bio Gas digester, which produces the Bio Gas, also provides an excellent agricultural waste management solution, most notably animal manures. Also, capturing methane generated in a Bio Gas digester has an immensely important role to play with respect to rural energisation, poverty alleviation and development, increased industrial and agricultural efficiency and competitiveness, and improved management of our greenhouse gas emissions. The major applications of Bio Gas are as fertilizer, fuel gas, methane production, mechanical and electrical power production, diesel engine operation, etc. Bio Gas technology is one of the fastest growing renewable energy sectors worldwide, with the annual market growth exceeding 30% each year. This book majorly deals with Bio Gas plants, raw materials for Bio Gas generation, utilization of Bio Gas and slurry, engineering design of Bio Gas units for developing countries, engineering aspects of small scale Bio Gas plants, a village scale Bio Gas pilot plant study using high rate digester technology, structural behaviour and stress conditions of fixed dome, simplified anaerobic digesters for animal waste, mechanical and electrical power from Bio Gas in developing countries, fuel gas production from organic wastes by low capital cost batch digestion, the toxicity effect of pesticides and herbicides on the anaerobic digestion process, the toxicity effect of pesticides and herbicides on the anaerobic digestion process, Bio Gas manure as a complete fertilizer, feasibility for Egyptian farmers etc. The book

contains technology of Bio Gas generation with its applications. This book will be an invaluable resource for researchers, consultants, entrepreneurs, institutional libraries, students etc.

The Complete Technology Book on Biofertilizer and Organic Farming (Potash, Greenhouse Farming, Hydroponic Farming, Pellet Fertilizer, Seaweed Fertilizer, Biogas with Manufacturing Process, Machinery Equipment Details) 3rd Edition

Author: Dr. Himadri Panda
Format: Paperback
Book Code: NI115
Pages: 480
ISBN: 9789381039076
Price: **Rs.** 1,895.00 **US$** 48.00

Organic fertilisers derived from natural sources such as plants, animals, and microorganisms are known as biofertilizers. They are high in nutrients such as nitrogen, phosphorus, and potassium. Biofertilizers are environmentally friendly, long-lasting, and less expensive than synthetic fertilisers. Biofertilizers can be applied directly to the soil to improve fertility and crop yield. They are also used in conjunction with other organic farming practises to improve soil health, such as composting and mulching. Biofertilizers contribute to a reduction in the use of chemical fertilisers, which can pollute water sources and harm the environment. Biofertilizers improve crop quality by increasing nutrient content and improving taste, in addition to their environmental benefits. They also improve plant resistance to diseases and pests. Organic farming is a subset of agriculture that emphasizes natural methods such as composting, crop rotation, and the use of organic fertilisers and pest control. Organic farmers grow their crops without the use of synthetic fertilisers, pesticides, or genetic engineering. Instead, they rely on naturally occurring nutrients in the soil and organic matter, such as compost and manure, to provide essential nutrients and minerals to their plants. Organic farmers also use traditional farming methods that promote biodiversity, soil fertility, and water conservation. Organic farming focuses on producing food in an environmentally friendly manner while also respecting animals and nature. The global biofertilizers market is expected to grow at a CAGR of 12.04% during the forecast, from $2.02 billion to $4.47 billion. Organic farming is one of the fastest-growing agricultural methods in the world, with 72.3 million hectares of agricultural land under organic agriculture management globally, according to the Research Institute of Organic Agriculture. The use of synthetic fertilisers contaminated the soil and killed microorganisms. Organic farming is rapidly becoming popular in order to reduce soil pollution. Organic agriculture makes the best use of local resources to improve soil fertility while avoiding agrochemicals, GMOs, and many synthetic compounds used as food additives. The growing demand for organic food motivates farmers to use bio-based fertilisers that are compatible with organic food production. Higher product appreciation and adoption among farmers in developing and developed economies are expected to positively influence the

growth of the Biofertilizers Market in the coming years. Furthermore, agricultural producers' active participation in ramping up their biological agriculture, such as bio-origin fertilisers, is expected to boost the growth of the Biofertilizers Market in the coming years. Furthermore, the rise in food product demand and per capita income has created enormous opportunities for the growth of the Biofertilizers Market in various regions and countries around the world. The book's main contents are Biofertilizer, Organic Farming, Potash, Greenhouse Farming, Hydroponic Farming, Pellet Fertilizer, Seaweed Fertilizer, Biogas, Anaerobic Digesters, Biopesticides, and Organic Manure. The Manufacturing Process, Machinery Equipment Details, and Photographs with Suppliers Contact Details are also given. A total guide to manufacturing and entrepreneurial success in today’s most demandable Biofertilizer and Organic Farming industry. This book is one-stop guide to one of the fastest growing sectors of the Biofertilizer and Organic Farming industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of Biofertilizer. It serves up a feast of how-to information, from concept to purchasing equipment.

The Complete Technology Book on Vermiculture and Vermicompost (Earthworm) with Manufacturing Process, Machinery Equipment Details & Plant Layout 2nd Edition

Author: Dr. Himadri Panda
Format: Paperback
Book Code: NI116
Pages: 368
ISBN: 9788195370146
Price: **Rs.** 1,275.00 **US$** 33.95

Advantage of vermicomposting is that it composts the wastes of rural areas. They clean our villages by using unnecessary organic and non-organic materials. Improves the texture of the soil and its ability to store water. Improves root growth and the multiplication of beneficial soil microorganisms by providing optimum aeration to the soil. Vermicompost (vermi-compost) is a mixture of decomposing vegetable or food waste, bedding materials, and vermicast created by the decomposition process using various species of worms, usually red wigglers, white worms, and other earthworms. This is known as vermicomposting, and the practise of raising worms for this purpose is known as vermiculture. Sewage treatment can also be done with vermicomposting. The Global Vermicompost Market is reach growing at a CAGR of 16.74%. The Growth of the global vermicompost market is caused by various factors, such as improved soil aeration, improved water holding capacity, better nutrient cycle, and enriched soil with micro-organism, helps in plant root growth and structure, enhanced germination. The vermicomposting method is used in organic farming. Increasing the use of sustainable agricultural practices, such as vermicomposting along with Government support for organic farming is significantly contributing to the global vermicompost market growth. Vermicompost offers plants with necessary nutrients and helps in plant diseases suppression. Worm castings often comprise 7 times more phosphorus, 11 times more potassium, and 5 times more nitrogen than ordinary soil, which are crucial minerals required for plant growth. Vermiculture and Vermicompost (Earthworm), as well as their manufacturing methods, are all covered in depth in this book. It also offers photos of equipment as well as contact information for industrial providers. This book is a one-stop shop for everything you need to know about the Vermiculture and Vermicompost (Earthworm) industry, which is ripe for manufacturers, merchants, and entrepreneurs. This is the only book that goes into great detail about Vermiculture and Vermicompost. It's a genuine feast of how-to material, from concept to equipment buying.

Plant Biotechnology Handbook

Author: NIIR Board
Format: Paperback
Book Code: NI117
Pages: 550
ISBN: 8186623833
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Plant biotechnology is a precise process in which scientific techniques are used to develop molecular and cellular based technologies to improve plant productivity, quality and health; to improve the quality of plant products; or to prevent, reduce or eliminate constraints to plant productivity caused by diseases, pest organisms and environmental stresses. It can be defined as human intervention on plant material by means of technological instruments in order to produce permanent effects, and includes genetic engineering and gene manipulation to obtain transgenic plants. Plant genetic engineering is used to produce new inheritable combinations by introducing external DNA to plant material in an unnatural way. The results are genetically modified plants (GMPs) or transgenic plants. The key instrument used in plant biotechnology is the plant tissue culture (PTC) technique which refers to the in vitro culture of protoplasts, cells, tissues and organs. Plant biotechnology in use today relies on advanced technology, which allows plant breeders to make precise genetic changes to impart beneficial traits to plants. The application of biotechnology in agriculture has resulted in benefits to farmers, producers and consumers. Plant biotechnology has helped make both insect pest control and weed management safer and easier while safeguarding plants against disease. The worldwide demand for food, feed and modern textile fibers can only be met in the future with the help of plant biotechnology. It has the potential to open up whole new business areas that will totally redefine the current market scope and perception. This book majorly deals with the organisms of biotechnology, herbicide resistant plants, transgenic plants with improved storage proteins, engineering for preservation of fruits, enhancing the photosynthetic efficiency, basic requirements for nitrogen fixation, animal and plant cell cultures , insecticides, cellular characteristics which influence the choice of cell , the growth of animal and plant cells immobilized within a confining matrix, virus free clones through plant tissue culture , microbial metabolism of carbon dioxide , organisms involved in the conversion of hydrogen, hydrogen utilization by aerobic hydrogen oxidizing bacteria, overproduction of microbial metabolites, regulation of metabolite synthesis etc. The book contains measurement of plant cell growth, plant tissue culture, initiation of embryo

genesis in suspension culture, micro propagation in plants, isolation of plant DNA and many more. This is very helpful book for entrepreneurs, consultants, students, institutions, researchers etc.

Handbook on Food Biotechnology (Extraction, Processing of Fruits, Vegetables and Food Products) 2nd Revised Edition

Author: NIIR Board of Consultants & Engineers
Format: Paperback
Book Code: NI153
Pages: 400
ISBN: 9789381039816
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Modern biotechnology refers to various scientific techniques used to produce specific desired traits in plants, animals or microorganisms through the use of genetic knowledge. Since its introduction to agriculture and food production in the early-1990, biotechnology has been utilized to develop new tools for improving productivity. Biotechnology is a broad term that applies to the use of living organisms and covers techniques that range from simple to sophisticated. In contrast, modern agricultural biotechnology techniques, such as genetic engineering, allow for more precise development of crop and livestock varieties. The potential benefits of biotechnology are enormous. Food producers can use new biotechnology to produce new products with desirable characteristics. These include characteristics such as disease and drought-resistant plants, leaner meat and enhanced flavor and nutritional quality of foods. This technology has also been used to develop life-saving vaccines, insulin, cancer treatment and other pharmaceuticals to improve quality of life. It is estimated that in the next 20-30 years demand for food will increase by 70%. Biotechnology will be key to meeting this demand. This handbook is designed for use by everyone engaged in thefoodtechnologysuch as fermentation, developing and testing of food and students who are pursuing their career in food biotechnology. It provide all information on modern cooking, food processing and preservation methods, juice preparation methods, etc. The major content of the book are Fermenter and Bio-Reactor Design, Development and Testing of a Milled Shea Nut Mixer, Production of Pure Apple Juice in Natural Colour, Drying of Ginger using Solar Cabinet Dryer, Roasting of Coffee Beans, Processing of Guava into Pulp Guava Leather, Processing and Preservation of Jack Fruit, Quality Changes in Banana, Processing and Quality Evaluation of Banana Natural Colour, Large Scale Separation and Isolation of Proteins, Preparation and Storage Studies on Onion-Ginger-Garlic Paste, Bitterness Development in Kinnow Juice, Effect of Incorporation of Defatted Soyflour, Gum from Ber Fruits, Juice Extraction of Aonla (EmblicaOfficinalisGaertn.) Cv. ‘Chakaiya’, Defatted Mucuna Flour in Biscuits, Detoxifying Enzymes, Processing Methods and Photographs of Machinery with Suppliers Contact Details. This book will be a mile stone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.

Author: NIIR Board of Consultants & Engineers
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Book Code: NI157
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Plants cell tissue culture is a rapidly developing technology which holds promise of restructuring agricultural and forestry practices. During the last two decades cell culture have made considerable advanced in the field of agriculture, horticulture, plant breeding, forestry, somatic cell genetics, phytopathology etc. Plant cells can be grown in isolation from intact plants in tissue culture systems. The cells have the characteristics of callus cells, rather than other plant cell types. These are the cells that appear on cut surfaces when a plant is wounded and which gradually cover and seal the damaged area. Plant cells and tissue culture are often used for the production of primary and secondary metabolites. Plant tissue cultures can be initiated from almost any part of a plant. The physiological state of the plant does have an influence on its response to attempts to initiate tissue culture. The parent plant must be healthy and free from obvious signs of disease or decay. The source, termed explant, may be dictated by the reason for carrying out the tissue culture. Younger tissue contains a higher proportion of actively dividing cells and is more responsive to a callus initiation programme. The plants themselves must be actively growing, and not about to enter a period of dormancy. Plant tissue culture is used widely in plant science; it also has a number of commercial applications. Tissue culture is employed in; micropropagation, elimination of pathogens from plant materials, germoplasm storage, production of somaclonal varients, embryo rescue, production of haploids, production of artificial seeds, production of secondary metabolities, production of transgenic plants etc. Some of the fundamentals of the book are plant tissue culture, basic requirements for tissue culture laboratory, surface sterilization of explant materials, development of tissue culture techniques, principles of cell culture cell, special factors influencing growth and metabolism, media for culturing cells and tissues, sterilisation procedures, design and equipment of a tissue culture laboratory, isolation method for microorganisms for culture, culture preservation and stability, genetic modification of industrial microorganisms mutation etc. The present book discuss about the methods, culture preservation and stability procedures, storage and transportation of plant cell tissue culture. This book is an invaluable resource for research workers, students, technocrats, entrepreneurs, institutional libraries etc.

Author: NIIR Board of Consultants and Engineers
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Pages: 544
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Mushrooms are the health food of the world. These are that fast growing basidiomycetous fungi which produce fleshy fruit bodies. They are rich in proteins, vitamins and minerals, so they are consumed as energy rich food. Mushroom has been attracting attention of mankind since ancient times and use of mushroom, as food is as old as human civilization. Mushrooms are superior to many vegetables and beans in their nutritive value. It is very rich in protein, vitamins and minerals. Fresh mushrooms contain about 85% water and 3.2% protein. But dried mushrooms water content is low and protein level is high as 34 to 44% and the fat content is less than 0.3%. There are about 100 species of edible mushrooms all over the world. But only three of them are cultivated in India which are Agaricus bisporus, Volvariella volvacea and pleurotus sajor caju. Unfortunately, it is realized that mushrooms did not receive universal acceptance over the years since a number of naturally growing mushrooms are poisonous. Now the situation has been changed because the cultivated edible mushrooms are totally safe for human consumption. Mushroom cultivation fits in very well with sustainable farming and has several advantages: it uses agricultural waste products, a high production per surface area can be obtained, after picking; the spent substrate is still a good soil conditioner. They have less carbohydrate so they are believed to be suitable for diabetic patients. Fresh mushrooms have very limited life and hence they need to be consumed within few hours. But processing and canning increases their shelf life to few months. Osmotic dehydration is one of the important methods of processing mushroom which involves drying technology of mushroom. Mushrooms are very popular in most of the developed countries and they are becoming popular in many developing countries like India. Applications and market for mushrooms is growing rapidly in India because of their nice aroma, nutritious values, subtle flavour and many special tastes. Mushroom cultivation has been declared as a major thrust area by Government of India. Mushroom dish is a common item in all the big hotels. Mushroom production has increased many folds during the recent past. Mushrooms have found a definite place in the food consumption habits of common masses and there is a constant demand for it throughout the year. Some of the fundamentals of the book are nutritive value of edible

mushrooms, medicinal value of mushrooms, advantages of mushrooms, symptoms of mushroom poisoning, morphology of common edible mushrooms, classification of fungi a brief survey, chemical composition, anti nutritional factors and shelf life of oyster mushroom , osmotic dehydration characteristics of button mushrooms, mushroom cultivation, cultivation of white button mushroom (agaricus bisporus), actors determining the amount of spawn needed, fungidues for mushroom diseases insectides for mushroom pets etc. The present book contains cultivation, processing, dehydration, preservation and canning of various species of mushrooms. It is resourceful book for agriculturists, researchers, agriculture universities, consultants etc.

Author: NPCS Board of Consultants & Engineers
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Pages: 488
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Biotechnology has played an essential role in the development of the healthcare chemical industries. The range of product includes diagnostic, prophylactic and therapeutic agents. The discovery of a potentially active compound starts a sequence of exhaustive chemical and biological testing that may culminate in manufacture of the agent or an improved analog. The role of biotechnology in this complex path to regulatory approval and marketing is diverse. Biotechnology is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Biotechnology also utilizes these products for manufacturing purpose. Some of the examples of drugs produced through biotechnology are penicillin, lincomycin, streptomucin, tylosin, peptide antibiotics, cephalosporins, etc. Modern use of similar terms includes genetic engineering as well as cell and tissue culture technologies. Biotechnology draws on the pure biological sciences and in many instances is also dependent on knowledge and methods from outside the sphere of biology. Conversely, modern biological sciences are intimately entwined and dependent on the methods developed through biotechnology and what is commonly thought of as the life sciences industry. The development of biotechnology is taking place in almost all fields of human life. The recent advances in the field of basic genetics have opened up new vistas, potentials and possibilities. Some of the fundamentals of the book are the pharmaceutical industries, marketing strategy, common features in the evolution of products and processes, process technology fermentation, product recovery, new trends in biotechnology, penicillins, biosynthesis and regulation of thienamycin, olivanic acids and epithienamycins, aminoglycoside antibiotics, streptidine and deoxystreptamine, streptomycin, neomycin, paromomycin, ribostamycin and,butirosin gentamicin, micronomicin and sisomicin, tylosin, peptide antibiotics, current applications of peptides, blasticidin S: an agricultural antibiotic bleomycin and bestatin: peptides used in anticancer therapy etc. The present book contains process of biotechnology based bulk drugs like penicillin, B lactam antibiotics, aminoglycoside antibiotics, peptide antibiotics, anti cancer agents, lincomycin etc. This is very resourceful book for entrepreneurs, technocrats, research scholars, libraries etc.

The Complete Book on Beekeeping and Honey Processing (2nd Revised Edition)

Author: NPCS Board of Consultants & Engineers
Format: Paperback
Book Code: NI203
Pages: 544
ISBN: 9788190568555
Price: **Rs.** 1,475.00 **US$** 39.86

Beekeeping is the maintenance of honey bee colonies, commonly in hives, by humans. Bees are accommodated in artificial lives where they live comfortably within easy reach of the bee keeper for examination and extraction of surplus lovely, after keeping of sufficient lovely in the combs for the bees. Honey is a part of bees, which gather sugar containing nectars from flowers. Honey should be processed as soon as possible after removal from the hive. Honey processing is a sticky operation, in which time and patience are required to achieve the best results. Careful protection against contamination by ants and flying insects is needed at all stages of processing. Bee honey is natural, unrefined food consumed as much in fresh or canned state. It is readily assimilated and is more acceptable to the stomach, particularly in the case of ailing persons, than cane sugar. It is an antiseptic and is applied to wounds and burns with beneficial results. Honey collection and its marketing in India are still not fully organised. The main uses of honey are in cooking, baking, as a spread on breads and as an addition to various beverages such as tea and as a sweetener in commercial beverages. Honey is the main ingredient in the alcoholic beverages mead, which is also known as honey wine or honey bear, honey is also used in medicines. A number of small scale industries depend upon bees and bee products. Honey and bees products finds use in several industries which are under; pharmaceuticals, meat packing, bees wax in industries, bee venom, royal jelly, bee nurseries, bee equipments and hives etc. There is considerable demand for the honey and other products. Outside the thousands of homemade recipes in each cultural tradition, honey is largely used on a small scale as well as at an industrial level. Some of the fundamentals of the book are history of beekeeping in India present, all India co ordinate research project on honey bee research and training, future plan for development, the pattern of beekeeping today, development of beekeeping equipments, beekeeping industry and honeybee species, bee hive products, medicinal properties of honey, bees and agriculture, pesticidal poisoning to honeybees, handling bees, queen rearing and artificial queen, beekeeping and ancillary industries, honey based industries, honey in pharmaceuticals, honey in meat packing, beeswax in industries, bee stings precautions and treatment. The book contains the steps of

bee keeping in proper manner and details of honey processing. This book is an invaluable resource for new entrepreneurs, technocrats and also for established enterprises.

Author: NPCS Board of Consultants & Engineers
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Book Code: NI210
Pages: 544
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Price: **Rs.** 1,575.00 **US$** 42.56

Biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals. Agricultural pesticides, properly used, are essential in supplying the food requirements of the world ever growing population. The use of synthetic pesticides affects the health of human being. The indiscriminate use of pesticides has adversely affected the health of the soil. The residual pesticides in the soil not only affect the soil quality but also the water quality, as they get leached into the ground water. Due to these reasons, role of biopesticides are very important for sustainable agriculture. The use of biopesticides for sustainable agriculture is a complex issue that at times is difficult to comprehend and plan. Biopesticides are usually inherently less toxic than conventional pesticides. They generally affect only the target pest and closely related organisms, in contrast to broad spectrum, conventional pesticides that may affect organisms as different as birds, insects, and mammals. They often are effective in very small quantities and often decompose quickly, thereby resulting in lower exposures and largely avoiding the pollution problems caused by conventional pesticides. Biopesticides, key components of integrated pest management (IPM) programmes, are receiving much practical attention as a means to reduce the load of synthetic chemical products being used to control plant diseases. In most cropping systems, biological pesticides should not necessarily be viewed as wholesale replacements for chemical control of plant pests and diseases, but rather as a growing category of efficacious supplements that can be used as rotation agents to retard the onset of resistance to chemical pesticides and improve sustainability. In organic cropping systems, biopesticides can represent valuable tools that further supplement the rich collection of cultural practices that ensure against crop loss to diseases. Some of the examples of biopesticides are triazino benzimidazol, thiophene sar, pyrazoles, hydroxyacetophenones, benzoylphenylureas, thiadiazolo S triazine etc. It is observed that India occupies a comparatively better position in the arena of biopesticides; in terms of growth of usage, percentage share of the total pesticide market and also in research publications. The driving forces behind this progress are identified as huge research infrastructure (universities and bio control labs) and favourable public support system/policies. Subsequently, it delves on strategies to incorporate the promotion of biopesticides into rural development efforts like

recognition of the huge traditional knowledge base and use of biopesticides developed using indigenous technologies. Some of the fundamentals of the book are synthesis of triazino benzimidazol as 1 biopesticides, synthesis and pesticidal activities of thiadiazolo S triazine and imidazol, synthesis and antimicrobial activities of pyrazoles, effects of penconazole on plasma membrane, metabolism of diclofop methyl , bleaching herbicides stimulate maize HMGR activity, soil transformation of acetochlor, propanil degrading amidase activity, inhibition of BTX B binding by RH 3421, KDR type resistance in German cockroach etc. This is the first book of its kind which provides different parameters about biopesticides. The book will not only be resourceful for new entrepreneurs but will also help the technocrats, research scholars and those who willing to know more about biopesticides.

The Complete Book on Organic Farming and Production of Organic Compost (2nd Revised Edition)

Author: NPCS Board of Consultants & Engineers
Format: Paperback
Book Code: NI213
Pages: 448
ISBN: 9788194099529
Price: **Rs.** 1,575.00 **US$** 42.56
Organic farming, composed of organic fertilizers as an integral virtue, continues to remain a lucrative bet for the expanding agricultural industry, in line with growing organic food appeal to consumers as a healthy and ethical choice.

Nanotechnology Handbook

Author: H. Panda
Format: Paperback
Book Code: NI222
Pages: 680
ISBN: 9788178331249
Price: **Rs.** 1,675.00 **US$** 44.95

Nanoscience is an interdisciplinary field that have encompassed physics, biology, engineering chemistry and computer science, among others, the prefix nano appears with increasing frequency in scientific journals and the news. Thus, as we increase our ability to fabricate computer chips with smaller features and improve our ability to cure disease at the molecular level, nanotechnology is at the doorstep. Scientists and engineers believe that the fabrication of nanomachines, nanoelectronics, and other nanodevices will help to sole numerous problems faced by mankind today related to energy, health, and materials development. In nanoelectronics there are two opposing developments: the lithographic scaling down of semiconductor components tending towards the sub10 nanometer region to supramolecular self assembling macroscopic structure with new properties. Currently the trends are mixed and one can build a variety of structures of all scales. For example one can build large scale supramolecular structures serving as templates for building circuits with nanoscale components. On the nanoelectronics architecture side, there have also been many interesting developments trying to cope with the increasing density and smallness of components and the needs of self assembly and fault tolerance. In the emerging field of nanotechnology, the production of nanostructures having special physical and chemical properties with respect to those of bulk materials is an objective due to their limited size and high density of corner or edge surface sites. Metal nanoparticles have received significant scientific and technological interest because of their use in applications such as catalysis, electronics, optics, optoelectronics, biological and chemical sensing and SERS. Nanotechnology is now creating a growing sense of excitement in the life sciences, especially biomedical devices and biotechnology, as there is an immense opportunity to arrange and rearrange molecular structures. The global market for nanotechnology products is worth an estimated compound annual growth rate (CAGR) of 11.1% from 2010 to 2015. The largest segment of the market, made up of nanomaterials, is expected to increase at a 5 year CAGR of 14.7% The book contains polymeric nanofibres, synthesis of nanostructure, analysis of electron currents through nanojunctions, water soluble carbon nanotubes, nanoelectronic switching networks, growth of

silica nanorods, magnetic nanostructures, nanomachining of microscope tips and carbon nanotubes, nanocrystalline semiconductors and many more. The present book is a sincere attempt to make the readers aware of the evolutionary trends underlying modern engineering practice which are grounded not only on the tried & true principles & techniques of the past, but also on more recent & current advances. This book will be an invaluable resource to technocrats, researches new entrepreneurs, technical institutions & introduction to this field.

Author: H. Panda
Format: Paperback
Book Code: NI225
Pages: 608
ISBN: 9788178331263
Price: **Rs.** 1,675.00 **US$** 44.95

Nanotechnology is the engineering of functional systems at the molecular scale. In its original sense, nanotechnology refers to the projected ability to construct items from the bottom up, using techniques and tools being developed today to make complete, high performance products. In this rising world of rapid technological developments, the role of state of art materials & composites is pivotal in frontier applications like aerospace, aviation, automobile, defense, electronics, chemical, biomedical, energy & nuclear sectors etc. with the advent of 21st century & initiation of Nanotechnology the atomic & molecular structures of materials is redefined. This shall result in new smart materials namely nanoparticles, powder, wires, rods, carbon nano tubes & so on. Nanotechnology is very diverse, ranging from novel extensions of conventional device physics, to completely new approaches based upon molecular self-assembly, to developing new materials with dimensions on the nanoscale, even to speculation on whether we can directly control matter on the atomic scale. Potential of nanotechnology to manipulate and program matter with atomic precision has invited the attention of scientists to explore innumerable applications of nanotechnology was an inspiration for the benefit of researchers, academicians and industries associated with this field. The global market for nanotechnology products is worth an estimated compound annual growth rate (CAGR) of 11.1% from 2010 to 2015.The largest segment of the market, made up of nanomaterials, is expected to increase at a 5 year CAGR of 14.7%. This book basically deals with design of protein based nanomachines, metastabilities in nanocrystalline, nanoscale characterization of nanowires, thermopower measurements on nickel nanowires, a nanoporous tio2 electrode, nanoscale in investigation of ultrathin, silicone oxide thermal decomposition, cylindrical nanodot arrays, nanocrystalline silicon films, dispersion of carbon nanotubes, electrical conductivity study of nanocomposite films, magnetic properties of nanospheres, generation spectroscopy of nanoparticle monolayer, au nanoparticles on light emitting polymers, etc. This handbook deals with the technology frontiers, its applications, the current & future challenges etc. This book will be an invaluable resource to all academicians, industrialists, scientists, upcoming entrepreneurs &

technocrats.

Author: NPCS Board of Consultants & Engineers
Format: Paperback
Book Code: NI233
Pages: 672
ISBN: 9788178331379
Price: **Rs.** 1,875.00 **US$** 50.67

Numerous foods are prepared by fermentation processes in which one or more kinds of microorganisms are responsible for the characteristic flavour or texture, and sometimes for the keeping quality of the product. The manufacture of fermented food products is carried out on a small scale in homes in every country. Fermented products are more palatable and are not as easily spoiled as the natural products. The microorganisms that produce the desirable changes may be the natural flora on the material to be fermented, or may be added as starter cultures. The yield of organic acids principally lactic, serve as a preserving agents. Lactic acid fermentation is an anaerobic intramolecular oxidation reduction process. Both homofermentative and heterofermentative lactic acid bacteria participate in food fermentations. In some fermented food products, yeasts and moulds also participate along with lactic acid bacteria. Most of the reactions in living organisms are catalyzed by protein molecules called enzymes. Enzymes can rightly be called the catalytic machinery of living systems. The real break through of enzymes occurred with the introduction of microbial proteases into detergents. Most of the enzymes are produced by microorganisms in submerged cultures in large reactors called fermentors. In choosing the production strain several aspects have to be considered. Industrial enzyme market is growing steadily. The reason for this lies in improved production efficiency resulting in cheaper enzymes, in new application fields. Tailoring enzymes for specific applications will be a future trend with continuously improving tools and understanding of structure-function relationships and increased search for enzymes from exotic environments. This field deals with how are the enzymes used and applied in practical processes. A lot of fungal, bacterial and actinomycete strains with potential for producing novel industrial enzymes have been identified. This book contains sterilization, fermentation processes, aeration and agitation, use of yeast, yeast production, fermentation raw materials, production of bacterial enzymes, bread making methods, effluent treatment, production of actinomycete protease, lactic acid, citric acid. This handbook will be very helpful to its readers who are just beginners in this field and will also find useful for upcoming entrepreneurs, existing industries, food technologist, technical institution etc.

Author: H. Panda
Format: Paperback
Book Code: NI239
Pages: 336
ISBN: 9788178331461
Price: **Rs.** 975.00 **US$** 25.95

With the introduction of green revolution technologies, the modern agriculture is getting more and more dependent upon the steady supply of synthetic inputs. Intensive agriculture with the use of chemical fertilizers in large amount has, no doubt, resulted in manifold increase in the productivity of farm commodities but the adverse effect of these chemicals are clearly visible on soil structure, micro flora, quality of water, food and fodder. At this critical juncture, biofertilizers are useful supplement to chemical fertilizers. Organic farming has emerged as the only answer to bring sustainability to agriculture and environment. Biofertilizers is also an ideal for practicing organic farming. Biofertilizers are the most advanced biotechnology necessary to support developing organic Agriculture, sustainable agriculture, green agriculture and non-pollution agriculture. Bio Fertilizer are natural and organic fertilizer that helps to keep in the soil with all the nutrients and live microorganisms required for the benefits of the plants. Today product like biofertilizers using the biotechnology techniques have proved that biological control is widely regarded as a desirable technique for controlling insects and pests, due to its minimal environmental impact and its avoidance of problems of resistance in the vectors and agricultural pests. The increasing demand for biofertilizers and the awareness among farmers and planters in the use of biofertilizers have paved way for the fertilizer manufacturers and new entrepreneurs to get into biofertilizers production. It is one of the important components of integrated nutrient management, as they are cost effective and renewable source of plant nutrients to supplement the chemical fertilizers for sustainable agriculture. This book gives a detailed process on manufacture of biofertilizers & organic farming. It contains chapters on biofertilizers, role of biofertilizer in crop production, production and distribution of biofertilizer, organic farming, method of organic farming, weed and pest management, and many more. This book will be very helpful to soil scientists, microbiologists, biologists, students, new entrepreneurs, fertilizer industry, organization engaged in biofertilizers production, training centres and to all those interested in the efficient use and recycling of wastes, resource management and sustainable farming.

The Complete Book on Biological Waste Treatment and their Utilization

Author: Dr. H. Panda
Format: Paperback
Book Code: NI251
Pages: 504
ISBN: 9789381039236
Price: **Rs.** 1,675.00 **US$** 44.95

The organic waste stream is composed of waste of a biological origin such as paper and cardboard, food, green and garden waste, animal waste and biosolids and sludges. Organic waste is usually generated as a component of most waste streams. For information on the treatments for managing organic wastes click on the links to the right. Four significant components of this organic, biodegradable stream are from food preparation, agricultural production, livestock manures, and municipal sewage sludge. Organic waste from food sources includes vegetables, fruits, grains, meats, fish, dairy products, etc., and constitutes some 18% of the typical municipal organic waste stream. An average of 1 kg per person per day of organic waste is produced, originating from households, wholesalers & processors, restaurants, and institutions. Urban centers are the major generators of organic food waste. Agricultural waste includes waste made up of those materials such as manure and animal output, in either solid or liquid form from poultry or other livestock operations. It also includes harvest remains from grain, oilseed, vegetable, and orchard crops. Increase in biological waste has led to the increase in biological waste management technology. Waste management is the collection, transport, processing or disposal, managing and monitoring of waste materials. The book includes organic waste for biological treatment, organic waste forms and treatment strategies, transformation of liquid manure into a solid, modeling of agricultural waste treatments, utilization of Indian waste in livestock feeds etc. This book also explains the different types of organic wastes like waste from tomato, jute, cotton, agro-industries, dehydration process of onion, piggeries, poultry, milk parlour etc. This book describes the methods how organic waste can be converted into useful products like oxalic acid, oxytetracycline, humic acids etc. The book is highly recommended to new entrepreneurs, existing units who wants to get more information of organic waste treatment.

Emerging Opportunities in Booming Indian Beer Industry (Why to Invest, Core Project Financials, Potential Buyers, Market Size & Analysis)

Author: NPCS Team
Format: Paperback
Book Code: NI272
Pages: 33
ISBN: 9789381039441
Price: **Rs.** 29,500.00 **US$** 500.00

The research report titled ‘Emerging Opportunities in Booming Indian Beer Industry (Why to Invest, Core Project Financials, Potential Buyers, Market Size & Analysis)’ released by Niir Project Consultancy Services aims at providing a detailed analysis of the investment opportunities prevalent in the Indian beer industry. The report covers crucial aspects like reasons for investment in the sector, core project financials, glimpse of the regulatory environment of the industry, potential buyers and analysis of the industry as a whole. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product: • Good Present/Future Demand • Export-Import Market Potential • Raw Material & Manpower Availability • Project Costs and Payback Period We at NPCS, through our reliable expertise in the project consultancy and market research field, have identified beer project, in the alcoholic beverages segment, which satisfies all the above mentioned requirements and has high growth potential in the Indian markets. And through this report we aim to help you make sound and informed business decision. The report contains all the data which will help an entrepreneur find answers to questions like: • Why I should invest in beer project? • Who are the customers of the product? • What will drive the growth of the product? • What are the costs involved? • What will be the market potential? The report begins by providing an overview of the beer industry in India and then proceeds to enhance the product knowledge of the entrepreneur. The report discusses beer as a product in various lights like product definition and product classification. The report further enlightens the entrepreneur about the potential buyers of the product, beer, which will help him identify his customers and place his product correctly. It provides a profound analysis of the investment factors of the project along with graphical representation and forecasts of key investment indicators which can help an entrepreneur assess the market potential of the product. The report further helps in enhancing the assessment of market potential by listing the export-import market of the product coupled with market size & outlook of the Indian beer industry as a whole. It also helps an entrepreneur in keeping abreast of the recent developments as well as the regulatory environment prevalent in the industry. The report

then turns its path towards the project insights of the beer plant. It includes core project financials of a model project with specified product list and plant capacity. It enumerates project information like raw materials required for manufacturing beer, manufacturing process, list of machinery and basic project financials. Project financials like plant capacity, costs involved in setting up of project, working capital requirements, payback period, projected revenue and profit are listed in the report. It also lists down the key players in the beer segment along with their contact details. This report helps an entrepreneur gain meaningful insights into the Indian beer sector and make informed and sound business decision. Reasons for buying the report: • This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, demand of the product and reasons for investing in the product • This report provides vital information on the product like its definition, characteristics and segmentation • This report helps you market and place the product correctly by identifying the target customer group of the product • This report helps you understand the viability of the project by disclosing details like raw materials required, manufacturing process, project costs and snapshot of other project financials • The report provides a glimpse of important taxes applicable on the product • The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions Our Approach: • Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years. • The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players • We use reliable sources of information and databases. And information from such sources is processed by us and included in the report

Author: Dr. H. Panda
Format: Paperback
Book Code: NI301
Pages: 480
ISBN: 9788178331713
Price: **Rs.** 1,695.00 **US$** 44.95

The Indian biotechnology industry is one of the fastest growing knowledge-based sectors in India and is expected to play an important role in small & medium enterprises industries. Biotechnology is not just one technology, but many. There are a wide variety of products that the biotechnology field has produced. Biotechnology as well all know, is the field of combination of various fields such as genetics, environmental biology, biochemistry, environmental, general, agriculture, fermentation, etc. Biotechnology has a long history of use in food production and processing. It has helped to increase crop productivity by introducing such qualities as disease resistance and increased drought tolerance to the crops. Biotechnology used in processing of wines, beers, Coffee, Tea, Cabbage and Cucumber, etc. Fermentation is biotechnology in which desirable microorganisms are used in the production of value-added products of commercial importance. The products of fermentation are many: alcohol and carbon dioxide are obtained from yeast fermentation of various sugars. Lactic acid, acetic acid and Organic acid are products of bacteria action; citric acid, D-Gluconic acid, Coffee, Tea, Cabbage & Cucumber and Yeasts are some of the products obtained from fermentation. The worldwide demand for biotech products is the only indication; the speed of its advance is the only set to accelerate. Indian Biotechnology industry is considered as one of the sunrise sectors in India. The industry is divided into five major segments: Bio-Pharma, Bio-Services, Bio-Agri, Bio-Industrial and Bio-Informatics. Biotechnology industry's growth in India is primarily driven by vaccines and recombinant therapeutics. The biotechnology sector of India is highly innovative and is on a strong growth trajectory. The sector, with its immense growth potential, will continue to play a significant role as an innovative manufacturing hub. The high demand for different biotech products has also opened up scope for the foreign companies to set up base in India. Today in India there are more than 350 Biotechnology companies in India providing employment for over 20,000 scientists. The authors cover different aspects of biotechnology such as production of fermented foods, functional foods, enzymes in food processing. The Book contains production of Wines and Beers, Production of Amino Acids, Lactic Acid, Acetic Acid and Organic Acid, Processing of Coffee, Tea, Cabbage,

Cucumber, Yeasts and Photographs of Plant & Machinery with Supplier's Contact Details. The book provides a better understanding about biotechnology production of value-added products, improve productivity, and enhance product quality in the agro food processing sector. The book is highly recommended to new entrepreneurs, professionals, existing units who wants to start manufacturing business of biotechnology products.

Manufacture of Pan Masala, Tobacco and Tobacco Products. 2nd Revised Edition

Author: P. K. Chattopadhyay
Format: Paperback
Book Code: NI317
Pages: 448
ISBN: 9788194737971
Price: **Rs.** 2,225.00 **US$** 59.95

Manufacture of Pan Masala, Tobacco and Tobacco Products (Tobacco Cultivation, Chewing Tobacco, Cigarettes, Bidi, Cigars, Khaini, Zarda, Katha, Mouth Freshener, Pan Chatni, Kimam, Sweet Supari, Nicotine Sulphate, USP Nicotine, Nicotine Tartarate, Nicotine, Polacrilex Resin) Tobacco comes from a leafy plant that tends to grow in warm tropical areas. It is famously grown all over the Caribbean, where the warm, sunny conditions make for a perfect growing climate. Tobacco is usually smoked as a nicotinic stimulant and is mostly processed, rolled and dried before being smoked. Different geographies produce different types of the plant. The taste and flavor of the leaves are the characteristic trademarks of different types. The process of curing also determines the type of tobacco. Tobacco products include cigarettes, cigars, loose pipe tobacco, chewing tobacco and snuff. These products contain the dried, processed leaves of the tobacco plant nicotiana rustica or nicotiana tabacum. All tobacco contains nicotine, an addictive drug. Today's tobacco also contains thousands of other chemicals designed to make the products more user-friendly and addictive. Nicotine is a nitrogen-based compound which dissolves in organic compounds. Tobacco leaves contain plenty of nicotine which evaporates on burning. This nitrogen-based compound is addictive in low amounts and toxic in high doses. Nicotine Sulfate is a potent pesticide, known for its high toxicity. A large proportion of Indian economy is agro based in which Tobacco is one of the principal cash crops. The tobacco production and its allied products' sales in the country have played a prominent role in the development of nation's economy. India is the largest tobacco market in the world in terms of tobacco consumption. The smokeless tobacco has historically been served as a tradition in India for many decades. Tobacco Waste or dust is generated at various stages of post-harvest processing of tobacco and also while manufacturing various tobacco products mainly during manufacture of tobacco products like cigarette and Beedi. The types of wastes generated during pre and post-harvest practice of tobacco include suckers, stems, mid ribs, leaf waste and dust. The main contents of the book are Tobacco Cultivation, Tobacco Diseases and Pests, Organic Tobacco Production, Chewing Tobacco, Cigarettes, Bidi, Cigars, Readymade Khaini, Chewing Tobacco (Khaini), Zarda, BIS

Specifications, Katha, Mouth Fresheners, Pan Chutney, Pan Masala, Kimam, Tobacco of Various Grade, Sweet Supari, Nicotine Sulphate, USP Nicotine, Nicotine Tartarate, Nicotine Polacrilex Resin, Smokeless Tobacco (SLT), Hookah, Tobacco Products Manufacturing Processes, E-Liquid (Main Chemicals, Compounds, Components), Additives in Tobacco Products, Additives Products, Packaging & Labeling (Design Trends & Technologies), Plastics in Food Packaging, Packaging Laws and Regulations and Photographs of Machinery with Supplier's Contact Details. This book is one-stop guide to one of the fastest growing sector of the Pan Masala, Tobacco and Tobacco Products, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on Pan Masala, Tobacco and Tobacco Products. It serves up a feast of how-to information, from concept to purchasing equipment.

Author: P. K. Chattopadhyay
Format: Paperback
Book Code: NI328
Pages: 456
ISBN: 9788195370184
Price: **Rs.** 1,875.00 **US$** 50.67

Handbook on Biofuel, Ethanol and Bioenergy Based Products (Ethanol as Biofuel, Methane Gas, Biodiesel, Biogas, Biomass Gasification, Bio-Chemical, Renewable Energy, Clean-Energy, Activated Carbon, Agricultural Residues, Forestry Residues, Animal Waste, Wood Wastes, Industrial Wastes, Municipal Solid Wastes and Sewage with Machinery, Manufacturing Process, Equipment Details and Plant Layout)

Bioenergy is biofuel-derived energy. Biofuel is any fuel made from biomass, such as plant or algal matter or animal waste. Biofuel is considered a renewable energy source since the feedstock material can be easily renewed, unlike fossil fuels such as petroleum, coal, and natural gas. Ethanol is a naturally occurring result of plant fermentation that may also be made by hydrating ethylene. Ethanol is a widely used industrial chemical that is employed as a solvent, in the production of other organic compounds, and as a fuel additive (forming a mixture known as a gasohol). Many alcoholic beverages, such as beer, wine, and distilled spirits, include ethanol as a psychoactive element. Transportation fuels generated from biomass resources, such as ethanol and biomass-based diesel, are known as biofuels. Using ethanol or biodiesel reduces the use of crude oil-based gasoline and diesel, potentially lowering the amount of crude oil imported from other nations. The global biofuels market is expected to reach growth at 7.3% CAGR. Increasing demand for biofuels as automobile fuel owing to their environment friendly characteristic to mitigate greenhouse gas emission is expected to propel industry growth. The global ethanol fuel market is expected to reach growing at a CAGR of 6.7%. The demand for the product is driven by growing usage of the product as a biofuel. The bioenergy market is expected to register a CAGR of over 6% during the forecast period. Bioenergy is one of the renewable energy sources globally. Increasing demand for energy, advancements in bioenergy conversion technologies, and increasing investment in bioenergy, and declining electricity generation costs from bioenergy facilities are expected to drive the market during the forecast period. The book covers a wide range of topics connected to Biofuel, Ethanol and Bioenergy Based Products, as well as their manufacturing processes. It also includes contact information for machinery suppliers, as well as images of equipment and plant layout. A complete guide on Biofuel,

Ethanol and Bioenergy Based Products manufacture and entrepreneurship. This book serves as a one-stop shop for everything you need to know about the Biofuel, Ethanol and Bioenergy Based Products manufacturing industry, which is ripe with opportunity for manufacturers, merchants, and entrepreneurs. This is the only book that covers commercial Biofuel, Ethanol and Bioenergy Based Products in depth. From concept through equipment procurement, it is a veritable feast of how-to information.

Author: Dr. Himadri Panda
Format: Paperback
Book Code: NI369
Pages: 328
ISBN: 9788195744794
Price: **Rs.** 1,195.00 **US$** 49.00

Manufacture of Biofertilizer and Organic Farming (2nd edition) The book "Manufacture of Biofertilizer and Organic Farming" offers an extensive overview of the biofertilizer industry, touching on all aspects from production techniques to the application within organic farming practices. The table of contents reveals a comprehensive structure, guiding the reader through a thorough exploration of biofertilizer types, production methods, manufacturing processes, and applications in organic farming. This book appears to serve as an invaluable resource for those interested in sustainable agriculture, providing insights into the benefits and challenges associated with biofertilizers and organic farming methods. Starting with an introduction to biofertilizers, the book classifies them based on their types and sources of nitrogen fixation, further detailing the components and characteristics of common biofertilizers. It also outlines the application methods, limitations, and production processes for bio powder and granulate fertilizers. This foundation sets the stage for a deeper dive into the biofertilizer manufacturing business, providing a step-by-step guide on starting and running such a venture, including business planning, technology sourcing, manufacturing processes, and marketing strategies. The classification section further delves into biofertilizers based on the microorganisms used and their functions, offering a detailed look at the types of biofertilizer and their uses in agriculture. The production sections discuss various methods, including the use of fermenters, tea waste, and even bird excreta, showcasing the diversity in raw materials that can be utilized in biofertilizer production. It also covers the manufacturing of phosphate-rich organic manure (PROM), highlighting its importance and benefits. The later chapters focus on organic farming, outlining its advantages, types, and nutrient management techniques. It emphasizes weed, pest, and disease management within organic farming systems, presenting methods and practices to enhance sustainability. Additionally, it discusses the regulatory framework, certification processes, and government schemes promoting organic farming, particularly in the Indian context. The book concludes with an exploration of future challenges and opportunities in the biofertilizer industry and organic farming, suggesting areas for further research and development. "Manufacture of Biofertilizer and Organic

Farming" is designed to be a detailed resource for entrepreneurs, startups, farmers, researchers, and students interested in sustainable agriculture. It provides a comprehensive understanding of the biofertilizer production process and its critical role in supporting organic farming practices. Through its detailed explanations and practical guidelines, this book aims to promote the adoption of sustainable agricultural practices that benefit the environment, enhance soil health, and contribute to food security.

About NIIR

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes varies process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

Our Detailed Project report aims at providing all the critical data required by any entrepreneur vying to venture into Project. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.

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