

Cultivation, Utilization and Processing Of Fruits, Vegetables, Flowers, Coconut, Tea, Bamboo and Wood Derivatives

[Handbook on Fruits, Vegetables & Food Processing with Canning & Preservation \(3rd Edition\)](#)

Author: NPCS Board

Format: Paperback

Book Code: NI19

Pages: 688

ISBN: 9788178330839

Price: Rs. 1,475.00 **US\$** 39.86

Natural foods such as fruits and vegetables are among the most important foods of mankind as they are not only nutritive but are also indispensable for the maintenance of the health. India is the second largest producer of fruits and vegetables in the world. Fertile soils, a dry climate, clean water and abundant sunlight help the hard working farmers to produce a bountiful harvest. Although there are many similarities between fruits and vegetables, there is one important difference that affects the way that these two types of crop are processed like fruits are more acidic than vegetables. Food processing is the set of methods and techniques used to transform raw ingredients into food or to transform food into other forms for consumption. Food processing typically takes clean, harvested crops or butchered animal products and uses these to produce attractive, marketable and often long shelf-life food products. Canning is a method of preserving food in which the food is processed and sealed in an airtight container. Food preservation is the process of treating and handling food to stop or greatly slow down spoilage (loss of quality, edibility or nutritive value) caused or accelerated by micro organisms. One of the oldest methods of food preservation is by drying, which reduces water activity sufficiently to prevent or delay bacterial growth. Drying also reduces weight, making food more portable. Freezing is also one of the most commonly used processes commercially and domestically for preserving a very wide range of food including prepared food stuffs which would not have required freezing in their unprepared state. Fruits and vegetable processing in India is almost equally divided between the organized and unorganized sector, with the organized sector holding 48% of the share. The present book covers the processing techniques of various types of fruits, vegetables and other food products. This book also contains photographs of equipments and machineries used in fruits, vegetables and food processing along with canning and preservation. This book is an invaluable resource for new entrepreneurs, food technologists, industrialists etc.

The Complete Technology Book on Processing, Dehydration, Canning, Preservation of Fruits & Vegetables (Processed Food

Author: NIIR Board of Consultants & Engineers

Format: Paperback

Book Code: NI65

Pages: 608

ISBN: 9788193733929

Price: Rs. 1,995.00 US\$ 52.95

Fruits and vegetables are processed into a variety of products such as juices and concentrates, pulp, canned and dehydrated products, jams and jellies, pickles and chutneys etc. The extent of processing of fruits and vegetables varies from one country to another. The technology for preservation also varies with type of products and targeted market. Owing to the perishable nature of the fresh produce, international trade in vegetables is mostly confined to the processed forms. India is the second largest producer of fruits & vegetables in the world with an annual production of million tonnes. It accounts for about 15 per cent of the world's production of vegetables. Due to the short shelf life of these crops, as much as 30-35% of fruits and vegetables perish during harvest, storage, grading, transport, packaging and distribution. Hence, there is a need for processing technology of fruits and vegetables to cater the domestic demand. The major contents of the book are procedures for fruit and vegetable preservation, chemical preservation of foods, food preservation by fermentation, preservation by drying, canning fruits, syrups and brines for canning, fruit beverages, fermented beverages, jams, jellies and marmalades, tomato products, chutneys, sauces and pickles, vegetables preparation for processing, vegetable juices, sauces and soups, vegetable dehydration, freezing of vegetables etc. The book also contains sample plant layout and photographs of machinery with supplier's contact details. A total guide to manufacturing and entrepreneurial success in one of today's most food processing industry. This book is one-stop guide to one of the fastest growing sectors of the food processing industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of food processing products. It serves up a feast of how-to information, from concept to purchasing equipment.

Cultivation of Fruits, Vegetables and Floriculture

Author: NIIR Board

Format: Paperback

Book Code: NI95

Pages: 760

ISBN: 8186623752

Price: Rs. 1,100.00 **US\$** 29.73

Fruit and Vegetable Cultivation in India is a prominent business sector for exporting merchandise and shipping and thus earning a good amount of international revenue for India. Since its independence India has been trying keep pace with the dazzling prospects of exporting commercial business. India is essentially agrarian and rural, with ample scope for lands for farming and cultivation and it has also helped for the cultivation of a large variety of fruits as well as vegetables. The study of fruit and vegetable production is a subject of enormous scope. It involves the integration of wide spectrum of disciplines. As the new technologies and developments become available, cropping system and production practices changes. India has perhaps been renamed as the vegetable and fruit basket in the world, a factor that weighs fascinatingly upon the cultivation of fruits in the country. India serves as the home to various kinds of vegetable as fruits, and holds a vital position in the field of productions of fruits and vegetables amidst different countries of the world. Floriculture covers all the aspects related to the production and use of flowers and ornamental plants, flower seeds, bulbs etc. The scenario of floriculture is changing fast due to steadily widening export opportunities and large number of people earns their livelihood. Commercial floriculture however is of recent origin. A constituent increase in demand for cut and potted flowers has made floriculture as one of the important commercial trades in Indian agriculture. Floriculture has an annual growth potential of 25 to 30 percent. Of late, large scale commercial companies have started joint ventures with foreign companies to invest in the floriculture sector. The government has invited foreign investment in floriculture, particularly in the areas of refrigerated storage and transportation facilities essential to ensure that flowers do not perish to transit. Cultivation of fruits, vegetables and floriculture is capable of attracting/retaining a large number of progressive rural populations on in farming. This book majorly deals with integrated development of fruits, scope and importance of fruits, vegetable crops, integrated development of vegetables, floriculture, integrated development of floriculture etc. This publication deals with all the important and relevant aspects of floriculture including production technology, open cultivation in different climates. The book is written in such way that it can be used by commercial growers, home gardeners, professional floriculturists and environmentalists.

Cultivation of Tropical, Subtropical, Vegetables, Spices, Medicinal and Aromatic Plants

Author: NIIR Board

Format: Paperback

Book Code: NI119

Pages: 652

ISBN: 8186623876

Price: Rs. 1,075.00 US\$ 28.95

Plant spices grown in tropical countries on small scale family farms of commercial farms, to provide foods for human or live stock, in dry or humid regions are highly abundant and taxonomically diversified. Vegetables comprise of a large number of plants, mostly annual, of which different parts like leaf, stem, flowers, fruit, root etc. are eaten. They are rich in nutrients and are essential items of a balanced diet.

Vegetables are called protective food as their consumption can prevent several diseases. Many vegetables are important items of commerce and thus can play a major role in the economic development. Generally classification of horticulture plants are based on nature of growth climatic requirement continuation of growth types of fruit parts used botanical relationship, salinity tolerance, ripening behaviour, botanical relationship, hardness or temperature tolerance, cool season vegetables, warm season vegetables, parts used as food, methods of raising, etc. Medicinal and aromatic plants are important for human health. These plants have been used from the prehistoric times to present day. These plants based medicines are consumed in all civilizations. It is believed that the herbal medicine can give good effect to body without causing side effects to human life. Besides, the usage of medical plants has been increasing as an important role that can support the economic system. The medical and aromatic plants for health are used as herbal treatments and therapies that can be new habits for culture. Medicinal and aromatic plants constitute a large segment of the flora, which provide raw materials for use by various industries. They have been used in the country for a long time for their medicinal properties. The decision to cultivate medicinal herbs should only be made in response to demand for particular herbs. The market is very competitive and could easily be oversupplied. This book majorly deals with classification of horticultural plants, classification of flowers, classification of spices, soil and climatic requirements of horticultural plants, beet root, bottle gourd, harvesting and post harvest management, poly house vegetable production in temperate regions, vegetables growing in containers, tea, performance of plants from cutting, vegetative propagation, rubber, biofertilizers in vegetable cultivation, postharvest management of tropical tuber crops, etc. This is an informative resource of the cultivation, irrigation, manuring,

fertilization, harvesting and post harvest management of tropical, subtropical, vegetables, spices, medicinal and aromatic plants. This book is useful for entrepreneurs, ayurvedic institutes, libraries and consultants.

Tropical, Subtropical Fruits & Flowers Cultivation

Author: NIIR Board

Format: Paperback

Book Code: NI123

Pages: 600

ISBN: 8186623884

Price: Rs. 1,075.00 **US\$** 28.95

Tropical and subtropical plants grow in tropical jungles around the world. These plants often produce stunning blooms in a range of colors, and bring a unique and exotic feel to their growing environment. Although they hail from moist areas, many tropical and subtropical plants require warmth more than moisture. Some species of tropical plants are therefore quite easy to grow in warm, non tropical areas. One of the great characteristics of tropical plants is that they keep growing all season. There are thousands of tropical and subtropical fruits and flowers. The tropics have the capacity to produce large quantities of fruit and international trade is adding new kinds as rapid shipment possibilities increase. Some tropical fruits such as the banana, mango and pineapple are now as familiar as the apple and pear in temperate regions. Other examples of tropical fruits are grape, papaya, litchi, guava, coconut etc. In comparison with fruits of temperate regions, many tropical species have been much neglected in international markets. Citrus cultivation is carried out on a large scale. Citrus is grown worldwide although they are tropical plants so that most of the commercial groves are in subtropical regions. It is usually grown at sea level where sufficient moisture is readily available, or under irrigation. Any well drained soil, except an extremely sandy one, is suitable. The fruits ripen at different times of the year depending on the species and variety. There are various kind of tropical flowers; Aster (*Callistephus chinensis*), Jasmine (*Jasminum* sp.), Calendula (*Calendula officinalis*), Carnation (*Dianthus caryophyllus*), Lily (*Lilium* spp.), Narcissus (*Narcissus* spp.), Orchids and many more. Flowers require sincere, patient, soft, affectionate as well as expert handling. Most houseplants are tropical plants. That's why they do so well indoors, at temperature levels humans find comfortable in their homes, around 60 F to 90 F. More technically, tropical plants are defined as all vegetation growing in a wide band around the equator between the Tropic of Cancer and the Tropic of Capricorn. Just north and south of that band are the subtropical areas, also rich in plants of interest to our group. This book basically deals with seed propagation extraction and handling, effect of seed treatment and temperature on germination, vegetative propagation, effect of rootstocks on mineral composition, type of cutting, growth substances and season, postharvest

management of fruits and vegetables, factors affecting postharvest life of flowers, postharvest management of flowers, postharvest management of spices, postharvest management of plantation crops, control of ripening process, pelletization, transportation, storage etc. Plant propagation is an important aspect of agriculture in general and horticulture in particular. This book contains new methods for cultivation of tropical, subtropical fruits and flowers. The book is very useful for agriculture universities library, consultants, new entrepreneurs, plantation companies, farmers who wants to update their knowledge and adopt new cultivation techniques.

The Complete Technology Book on Wood and Its Derivatives

Author: NIIR Board of Consultants & Engineers

Format: Paperback

Book Code: NI146

Pages: 502

ISBN: 8186623922

Price: Rs. 1,100.00 **US\$** 29.73

Wood has been used for hundreds of thousands of years for both fuel and as a construction material. Wood is an organic material, a natural composite of cellulose fibers (which are strong in tension) embedded in a matrix of lignin which resists compression. In the strict sense wood is produced as secondary xylem in the stems of trees (and other woody plants). Wood is used for millennia for many purposes, primarily as a fuel or as a construction material for making houses, tools, weapons, furniture, packaging, artworks, and paper. Wood is composed of cells, and the cell walls are composed of micro fibrils of cellulose and hemicellulose impregnated with lignin. The derivation of chemicals from wood is carried out wherever technical utility and economic conditions have combined to make it feasible. In a living tree it performs a support function, enabling woody plants to grow large or to stand up for themselves. It also mediates the transfer of water and nutrients to the leaves and other growing tissues. Wood may also refer to other plant materials with comparable properties, and to material engineered from wood, or wood chips or fiber. Wood and man have coexisted on this planet from the beginning and wood, as a renewable resource, has provided man with tools, weapons and shelter. Wood, when dry, has unique physical properties in that its tensile strength, bending strength, compression strength, impact resistance and hardness per unit weight are the highest of all construction materials. Wood polymer composites (WPC) are materials in which wood is impregnated with monomers that are then polymerized in the wood to tailor the material for special applications. The resulting properties of these materials, from lightness and enhanced mechanical properties to greater sustainability, has meant a growing number of applications in such areas as building, construction and automotive engineering. Other uses of wood in furniture, buildings, bridges, and as a source of energy are widely known. Wood is perhaps the most used component in our daily life, from home building and furnishings to everything from the tables to the doors are made of wood, and for the people living in colder climates, wood holds even greater importance. Some of the fundamentals of the book are wood structure and chemical composition, chemical change in wood associated with wood fiberboard manufacture, chemical changes in wood effected

by furnish preparation processes, bark extracts as bonding agent for particle board , wood polymer composites and their industrial applications , chemical reactions of preservatives with wood, activation of wood surface and nonconventional bonding , chemistry of weathering and protection , weathering of chemically modified woods, energy and chemicals from wood, charcoal and other chemicals, etc. The developments in wood industry in the country are mainly attributed to the pioneering work carried in the field of wooden products. There are lots of chemicals and other products extracted from wood. This book contains processes of various wooden products and its derivatives. This is the first book of its kind which is invaluable resource to research scholars, entrepreneurs, technocrats, institutes, libraries and existing one.

Importers Directory of Food, Beverages & Tobacco Products (World Wide /International Buyers Database) 3rd Edition

Format: CD-Rom

Book Code: NID63

Price: Rs. 4,307.00 **US\$** 150.00

ABOUT: Today much of the world's economy is based on the ability of countries to import and export goods to each other. This global economy is vital to allowing the exchange of technology and goods and relies upon a network of importers and exporters to ensure that goods can flow freely and be available to meet the ever growing demand of the public. In order to keep track of the most reputable importers, we have created Database of Importers. Perhaps no other question is asked more frequently by exporters than "Where and how can I find importers?? Database of Importers is a perfect starting point for international exporters, manufacturers, traders and merchants looking to establish direct contacts with overseas customers. This Directory contains the latest and complete information about your potential business partners in several countries. The importers information listed in Buyers Directory has been collected from very reliable sources like electronic media, embassies and different association of concerned countries .Having in view the export promotional programme, our dedicated team has compiled Buyers Directory with hard work, efforts and devotion. The Directory contains the most comprehensive database of importer information. We at NPCS collect data from around the world, and then classify the raw data into the kind of intelligent categories that companies around the world use to:

- Find new importers, new markets and new business opportunities
- Enhance international trade
- Support sales & marketing.

Importers Directory of Food, Beverages & Tobacco Products (World Wide /International Buyers Database) 3rd Edition (Food Products, Dairy Products, Beverages, Milk, Chocolates, Cereal, Wheat, Bakery Products, Biscuit, Noodles, Pasta, Starch, Vegetables, Canned Food, Frozen Food, Seafood, Pulses, Spices, Pickles, Sauces, Fruits, Sugar, Juices, Honey, Eggs, Meat, Beer, Vinegar, Guar Gum, Wine, Soft Drink, Cigarettes, Liquor, Alcohol) Contains: Over 6,300 Importers / Foreign Buyers. Details include Company's Name, Contact Person (4,400), Address (6,200), Phone (6,300 Landline/ Mobile), E-Mail (3,400), Fax (4,500), Website (1,000) and Product Description. Note: All Records does not contain all fields of information. However, maximum information has been incorporated. Format: MS Excel, .xls

[Handbook on Mushroom Cultivation and Processing \(with](#)

Dehydration, Preservation and Canning)

Author: NIIR Board of Consultants and Engineers

Format: Paperback

Book Code: NI164

Pages: 544

ISBN: 9788178330341

Price: Rs. 1,275.00 US\$ 33.95

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*), factors determining the amount of spawn needed, fungicides for mushroom diseases insecticides for mushroom pests 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.

Potato and Potato Products Cultivation, Seed Production, Manuring, Harvesting, Organic Farming, Storage and Processing

Author: NPCS Board of Consultants & Engineers

Format: Paperback

Book Code: NI199

Pages: 560

ISBN: 9788190439893

Price: Rs. 1,275.00 US\$ 33.95

Potato ranks fourth position in the world after wheat, rice and maize as non cereal food crop. Potato is probably the most popular food item in the Indian diet and India is one of the largest producers of potato. It is used in many ways like vegetable, potato wafers/chips, powder, finger chips etc. Potato tubers constitute a highly nutritious food. It provides carbohydrates, vitamin C, minerals, high quality protein and dietary fiber. Potato is a rich source of starch and it is consumed mainly for its calorific value, also contains phosphorus, calcium, iron and some vitamins. Boiling potatoes increases their protein content and almost doubles their calcium content. It is vastly consumed as a vegetable and is also used in various forms such as starch, flour, alcohol, and dextrin and livestock fodder. It is estimated that about 25 % of the potatoes, which are spoiled due to several reasons, may be saved by processing and preservation of various types of processed products. The potatoes can be processed for preservation and value addition in the form of wafers/ chips, powder, flakes, granules, canned slices. Potato granules are used for the preparation of various recipes, to add to vegetable and non vegetable recipes and to enhance the quantity as well as to enrich the food value. There is a huge potential for processed potato products such as potato flakes, potato powder, frozen potatoes, frozen French fries, potato chips/wafers are one of the most popular snack items consumed throughout world. International trade in potatoes and potato products still remains thin relative to production, as only around 6 percent of output is traded. High transport costs, including the cost of refrigeration, are major obstacles to a wider international marketplace. The industry is still growing at a rapid pace where French fries are showing the highest growth followed by potato chips and potato powder/flakes. It is by far the largest product category within snacks, with 85% of the total market revenue. This book basically deals with origin, evolution, history and spread of potato, potato products, quality requirements for processing, morphological, size and shape, defects, biochemical, dry matter, reducing sugars, phenols, inheritance, morphological attributes, tuber shape, growth cracks, hollow heart, internal rust spots, greening, biochemical attributes, glycoalkaloids, dry matter, reducing sugars, enzymic browning, development of varieties for processing, areas suitable for growing

processing potatoes, processing quality of Indian potato varieties, processed potato products, dehydrated products at village level, potato chips, french fries and flakes commercial production, grading manual for frozen French fried potatoes for frozen French fried potatoes, areas of production, varieties, receiving, determining the quality and condition of raw potatoes for frying purposes, determining the quality and condition of raw potatoes for frying purposes, etc. The present book covers complete details of potato cultivation and processing in proper manner. This book is an invaluable resource for agriculture universities, students, technocrats and entrepreneurs.

Handbook on Rice Cultivation and Processing

Author: NPCS Board of Consultants & Engineers

Format: Paperback

Book Code: NI200

Pages: 544

ISBN: 9788190568524

Price: Rs. 1,075.00 US\$ 28.95

Rice is the staple food of over half the world population. Rice is normally grown as an annual plant, although in tropical areas it can survive as a perennial crop and can produce a ratoon crop for up to 30 years. The rice plant can grow to 1 to 1.8 m tall, occasionally more depending on the variety and soil fertility. Since its origin, the spread of rice cultivation is extensive and rice is now being grown wherever water supply is adequate and ambient temperature are suitable. The rice grain is covered with a woody husk or hull, which is indigestible and is to be removed in the first step during processing for making the rice edible. Rice cultivation is well suited to countries and regions with low labor costs and high rainfall, as it is labor intensive to cultivate and requires ample water. Rice can be grown practically anywhere, even on a steep hill or mountain. The traditional method for cultivating rice is flooding the fields while, or after, setting the young seedlings. This simple method requires sound planning and servicing of the water damming and channeling, but reduces the growth of less robust weed and pest plants that have no submerged growth state, and deters vermin. While flooding is not mandatory for the cultivation of rice, all other methods of irrigation require higher effort in weed and pest control during growth periods and a different approach for fertilizing the soil. Drying is an essential step in the processing and preservation of paddy; it is the process that reduces grain moisture content to a safe level for storage. Milling is a crucial step in post production of rice. The basic objective of a rice milling system is to remove the husk and the bran layers, and produce an edible, white rice kernel that is sufficiently milled and free of impurities. India is the second largest rice producing country of the world after China. India also grows some of the finest quality aromatic rice of which basmati is the most high quality rice. This book basically deals with history, origin and antiquity of rice, seed rice and seed production, harvest and post harvest operations, water management practices for rice, diseases and pests of rice and their control, application of biotechnology in aromatic rice improvement, traditional methods of parboiling, modernization of parboiling process, solvent extractive rice milling, general types of quick cooking rice processes, dry milled rice products in brewing, breakfast cereals, rice flakes, puffed rice, rice in multi grain cereals etc. The present book contains cultivation and processing of rice

in various ways. The book is very resourceful for the entrepreneurs, technocrats, research scholars etc.

Handbook on Citrus Fruits Cultivation and Oil Extraction

Author: NPCS Board of Consultants & Engineers

Format: Paperback

Book Code: NI223

Pages: 544

ISBN: 9788178331256

Price: Rs. 1,575.00 US\$ 42.56

Citrus fruits are produced all around the world. They contain healthy nutrition content that works wonders for the body. Citrus fruits act as a fabulous source of vitamin C and a wide range of essential nutrients required by the body. India only represents a mere 4% of global citrus fruit production. But now a day, there is a rise in its cultivation. This rise in citrus production is mainly due to the increase in cultivation areas & the change in consumer preferences towards more health & convenience food consumption & the rising incomes. Citrus fruits have long been valued as part of a nutritious and tasty diet. The flavours provided by citrus are among the most preferred in the world, and it is increasingly evident that citrus not only tastes good, but is also good for people. It is well established that citrus and citrus products are a rich source of vitamins, minerals and dietary fiber (non starch polysaccharides) that are essential for normal growth and development and overall nutritional well being. However, it is now beginning to be appreciated that these and other biologically active, non nutrient compounds found in citrus and other plants (phytochemicals) can also help to reduce the risk of many chronic diseases. Appropriate dietary guidelines and recommendations that encourage the consumption of citrus fruit and their products can lead to widespread nutritional benefits across the population. All citrus fruit is acid fruit. The acid fruits are the most detoxifying fruits and excellent foods. Lemon oil is obtained from the fruits of citrus Limonum, Risso (Rutaceae). Although the majority of commercially available essential oils are extracted from the original botanical material by use of steam distillation, most citrus essential oils are extracted by pressing the rinds of the citrus fruits. The oil of sweet orange is obtained from the fruits of citrus Aurantium Risso and the oil of bitter orange from fruits of citrus Bigaradia Risso (Auranciaceae). Orange Essential Oil is energizing and is usually well loved by men, women and children. Citrus fruit oils are cheaper than most other essential oils. Lemon or sweet orange oils that are obtained as by products of the citrus industry are even cheaper. Some of the fundamentals of the book are botanical classification, classification of genus citrus, criteria for citrus classification, information on important citrus fruits, subgenus fucitrus (edible citrus fruits), citrus cultivation, citrus fruits, kinnow mandarin, citrus fruit breeding, soil inspection for citrus family, nutrition for citrus world, proper

harvesting of citrus, post harvesting of citrus fruits, etc. This handbook on citrus fruits provides relevant information on most citrus crops, the basics of citriculture & production, pre & post harvest management, picking, storage etc. Selected topics on oil extraction of citrus fruits are also given to provide knowledge of the techniques used. This book will be helpful for technocrats, farmers, research scholar, institutions etc.

Fruits, Vegetables, Corn and Oilseeds Processing Handbook

Author: H. Panda

Format: Paperback

Book Code: NI226

Pages: 592

ISBN: 9788178331270

Price: Rs. 1,675.00 US\$ 44.95

Fruits & vegetables are an important nutritional requirement of human beings as these foods not only meet the quantitative needs to some extent but also supply vitamins & minerals which improve the quality of the diet & maintain health. Fruit, vegetables & oil seeds processing is one of the pillars of the food & edible oil industry. India is the second largest producer of both fruits and vegetables. Fruits and vegetables are the reservoir of vital nutrients. Being highly perishable, 20 to 40% of the total production of fruits and vegetables goes waste from the time of harvesting till they reach the consumers. It is, therefore, necessary to make them available for consumption throughout the year in processed or preserved form and to save the sizeable amount of losses. At present, about 2% of the total produce is processed in India mainly for domestic consumption. Fruits and vegetables have great potential for value addition and diversification to give a boost to food industry, create employment opportunities and give better returns to the farmers. Oil seeds also play an important role in the food sector & daily life. Edible oils constitute an important component of Indian households. Domestic edible oil consumption in India is increasing. Self sufficiency in edible oils today stands at in recent years, availabilities of non conventional oil, rice bran oil, soybean oil, palmolein oil and cottonseed have increased. Oils are essential components of all plants. However, commercial oil production facilities only utilize plants that accumulate large amounts of oil and are readily available In order to improve the nutritional status of the people & also to exploit the export potential of processed products there is need to increase the productivity of processed food in the country. Currently, India accounts for 7.0% of world oilseeds output; 7.0% of world oil meal production; 6.0% of world oil meal export; 6.0% of world veg. oil production; 14% of world veg. oil import; and 10 % of the world edible oil consumption. Some of the fundamentals of the book are preservation of pineapple, mango and papaya chunks by hurdle technology, effect of boiling on beta-carotene content of forest green leafy vegetables consumed by tribals of south India, process development for production of pure apple juice in natural colour of choice, physical refining of rice bran and soybean oils, anti nutrients and protein digestibility of fababean and ricebean as affected

by soaking, dehulling and germination, quality changes in banana (*musa acuminata*) wines on adding pectolase and passion fruit, essential oil composition of fresh and osmotically dehydrated galgal peels, development of cold grinding process, packaging and storage of cumin powder, bakery products and confections, etc. This book deals completely on the basic principles & methodology of fruits, vegetables, corn & oilseed processing & its preservation. This will be very resourceful to readers especially to technocrats, engineers, upcoming entrepreneurs, scientists, food technologists etc.

The Complete Book on Cultivation and Manufacture of Tea (2nd Revised Edition)

Author: H. Panda

Format: Paperback

Book Code: NI242

Pages: 574

ISBN: 9788178331683

Price: Rs. 1,625.00 **US\$** 42.95

Tea is one of the most popular beverages that are being consumed all over the world. Tea is known as a soothing drink and a way of life. Owing to its increasing demand, tea is considered to be one of the major components of world beverage market. Tea is very beneficial for health and is also known as anticarcinogenic properties. Green tea acts as an antiviral agent. Growing tea requires sufficient amount of work and there is additional level of work that must be incorporated to harvest it. Tea is cultivated in tropical and sub tropical regions. There are various kinds of tea such as black tea, green, oolong tea that can be obtained from real tea plant, *Camellia sinensis*. The making of different varieties of tea mainly depends upon plucking and rolling, spreading, storing process. The handbook describes aspects of tea cultivation, ranging from the history of old crop, machinery & equipment for various Tea, biological control, organic tea- and many more. This is a sincere attempt to open up the world of this wonderful beverage, its cultivation methods, types of tea available worldwide, manufacturing process, to the common man. Some of the fundamentals of the book are growth of tea in other countries, tea in Indian economy, biochemical constituents, pharmacological properties, selection, pollination and propagation, nutritional requirements, growth, photosynthesis and respiration, nursery management, water theory, oxidative degradation of protein, biological effect of polyphenols, analysis of tea, tea processing, green tea processing, tea bag production etc. This book will be a mile stone for its readers who are new to this sector, will also find useful for entrepreneurs, tea scientists and tea research establishments.

Bamboo Plantation and Utilization Handbook

Author: H. Panda

Format: Paperback

Book Code: NI243

Pages: 568

ISBN: 9788178331508

Price: Rs. 1,475.00 US\$ 39.86

Bamboo is an important non wood forest product. In India, bamboo, which is traditionally considered the Poor man wood, and labelled as Green Gold is being considered a major export item by the centre for the global market. Bamboo is perfectly suited to agro forestry as a woody grass. Bamboo has been exploited from natural stands from time immemorial. Bamboo is increasingly being cultivated like other agricultural crops, that is, in professionally managed plantations. The growth of industries utilizing bamboo requires the sustainable cultivation and management of bamboo resources. India is blessed with very rich bamboo resources. Bamboo can play an important role in raising forest cover and a major role in stabilization of the environmental problems. The annual yield in tonnes/ha depends on the environment as well as the species. It is estimated that almost 25% of the biomass in the tropics and 20% in the subtropics, come from bamboo. The cultivation of bamboo as a wood substitute helps to offset depletion of the rain forest. Its rapid growth ensures an effective reconstruction of damaged eco systems. Bamboo is one of many sustainable non wood resources that can generate income for a large forest dependent rural population and it needs to take further steps to realize its full potential. In India, the North East has the largest stock and diversity of bamboos. Though India has the largest area under bamboo, the yield per hectare is very low compared to other countries. Bamboo plantation rising should be encouraged & promoted due to their high value, productivity, uniformity of crop, choice of species linked to peoples' need and industrial need. Bamboo forest constitutes about 13% of the total forest area of the country. About 50% of bamboo produced in India grows in North Eastern region and West Bengal. India has the second largest bamboo reserves in the world after China. This book basically deals with bamboos in India, the bamboo plant harvesting, cultivating, silviculture and management, collection of material and preparation of cuttings treatment for root induction in cuttings, preparation of nursery and planting nursery management transplanting, pattern of biomass allocation in growing bambusa bamboos, biochemical characteristics of plantation bamboo leaf (bambusa bambos) with reference to organic productivity, economic analysis, bamboo plantation, problems and prospects, need for bamboo plantation, consumption pattern of bamboos in India, working and finishing qualities of

bamboo, bamboos for structural use, pipe water supply system and drainage, bamboo furniture weaving industry etc. This book provides a complete detail on Bamboo plantation and its utilization. This book contains chapters like types of bamboo in India, taxonomy, cultivation, harvesting, growth management, bamboo utilization, Bamboo products and many more. This book will be very helpful to all its readers, environmentalists, agronomists, entrepreneurs, industrialists, or anyone with a special interest in bamboo cultivation.

The Complete Book on Cashew (Cultivation, Processing & By-Products)

Author: Dr. H. Panda

Format: Paperback

Book Code: NI253

Pages: 640

ISBN: 9788178331560

Price: Rs. 1,775.00 US\$ 47.95

Cashew, scientifically known as *Anacardium occidentale*, is a unique nut with a fascinating story. This tropical nut is native to Northeastern Brazil but is now widely cultivated in countries like India, Vietnam, and Nigeria. The cashew tree thrives in warm and humid climates, with sandy soil being its preferred growing medium. The cashew nuts are located at the end of a kidney-shaped drupe called the cashew apple. This drupe contains a highly toxic substance known as urushiol, which can cause severe skin irritation. Farmers must take great care to protect themselves during the harvesting process.

Processing raw cashews involves several techniques and tools to transform the nuts into the delicious snack all love.

Once the cashews are harvested and separated from the cashew apple and kernel, they go through a series of steps to remove any impurities and enhance their flavor. The global cashew market size reached US\$ 7.2 Billion. The market to reach US\$ 9.3 Billion, exhibiting a growth rate (CAGR) of 4.14%. Cashews are kidney-shaped nuts that are a good source of protein and minerals. They are low in sugar and rich in oil, fiber, protein, healthy fats, antioxidants, magnesium, zinc, copper, and phosphorus. Cashews are commonly available in whole, roasted, and split form. They are obtained from fruit-producing trees and grow near the sea areas and are widely used in beverages, dairy products, cereals, bars, cosmetics, and bakery products. The book covers a variety of topics related to Organic farming, Cashew Processing, Production of CNSL Derivatives, Quality control of cashew kernels, Cashew Liquid, Purification of Cashew Nut Shell, additives from cashew nut shell liquid, Honey coated nuts, Volatile nut aroma and flavour compositions, producing cardanol, Bisphenol Compounds, Hydrophobically Modified Poly(acrylic acid) [PAA], Heat-curable epoxy resin composition, Adhesives for car body assembly, Preparation of Flavour or Fragrance Microcapsules and Silane-Modified Phenolic Resins. A thorough guide on Cashew manufacture and entrepreneurship. This book is a one-stop shop for everything you need to know about the Cashew, which is ripe with opportunity for producers, merchants, and entrepreneurs. This is the only book that covers the process of making commercial Cashew (Cultivation, Processing & By-Products). From concept through equipment procurement, it is a veritable feast of how-to information.

**The Complete Book on Onion & Garlic Cultivation with Processing
(Production of Onion Paste, Flakes, Powder & Garlic Paste, Powder,
Flakes, Oil)**

Author: NPCS Board of Consultants & Engineers

Format: Paperback

Book Code: NI290

Pages: 424

ISBN: 9788178331799

Price: Rs. 1,575.00 US\$ 42.56

Onion (*Allium cepa* L.) has been valued as a food and a medicinal plant since ancient times. It is also used in different forms of processed food, e.g. pickles, powder, paste, and flakes, and it is known for its medicinal values. Garlic belongs to the genus *Allium*, which comprises of approximately 600 known species distributed over the whole northern hemisphere. Characteristic for *Allium* species are herbaceous, perennial bulbous plants with a typical leek odour. Onion and Garlic are the spice commodities used for flavouring the dishes. These are considered as valuable medicinal plants offer variety of medicinal properties. Onion & garlic are important commercial crops with versatile applications. The demand for the processed products is increasing day by day due to its convenience to handle and use. Onion & Garlic can be processed into a wide variety of products. As per the estimate, approximately 6.75% of the onion produced is being processed. Besides fulfilling the constant demand of domestic population, India exports 13 to 18 lakh tons of onion annually worth around Rs. 2200 crores of foreign exchange revenue. Similarly in case of garlic, the production increased from 4.03 lakh tons to 12.26 lakh tons. In the world market, the demand for onion and garlic products is increasing as they are hygiene and easy to handle, able to avoid wastage. There are good prospects for these processed products to export to gulf countries and even Europe. Overall, global Garlic market continues to indicate a perceptible growth. After China, India is the second largest producer of onion and enjoys 19% share of the global onion production. Maharashtra and Karnataka are the chief onion producing states in India and contribute near about 45% of the total production of onion in India. Production of onion in India is about 15m tones a year. Proper placement of onion & garlic products (like; onion pickle, onion chutney, onion paste, garlic oil, garlic paste, garlic powder, garlic flakes, onion flakes, onion powder) in the departmental stores, super markets, shopping malls backed-up by publicity is the key to success. It is also possible to have tie-up with exclusive restaurants, star hotels, renowned caterers for their regular requirements. This handbook is designed for use by everyone engaged in the Onion & Garlic products manufacturing. Major contents of the book are Varieties of Onion, Onion Production, Onion Dehydration, Types of Garlic, Garlic

Growing, Garlic Dehydration, Onion Pickle, Onion Chutney, Onion Paste, Garlic Oil, Garlic Paste, Garlic Powder, Garlic Flakes, Onion Flakes, Onion Powder, Pest Species and Pest Control of Garlic and Onion, Integrated Weed Management, Packaging, Product Advertising and Sales Promotion, Marketing, Plant & Machinery Photographs, Addresses of Plant & Machinery Suppliers, Sample Plant Layouts etc. It will be a standard reference book for professionals, entrepreneurs, food technologists, those studying and researching in this important area and others interested in the field of Onion & Garlic products manufacturing.

The Complete Book on Tomato & Tomato Products Manufacturing (Cultivation & Processing)(2nd Revised Edition)

Author: NPCS Board of Consultants & Engineers

Format: Paperback

Book Code: NI294

Pages: 344

ISBN: 9789381039687

Price: Rs. 1,400.00 **US\$** 37.83

Tomato is one of the most popular fruit in the world. The products of tomato like paste, juice, ketchup, etc. are widely used in kitchens all around the world. Tomatoes and tomato-based foods are considered healthy for the reason that they are low in calories, but possess a remarkable combination of antioxidant micronutrients. Tomato industry has been growing significantly over the past several decades. Changing life style and taste of consumers in different countries will motivate the growth of the tomato products market. The industries can retain maximum market share by differentiating their products in the market, by coming up with innovative products and by focusing on different packaged tomato products. India is one of the largest consumers of tomatoes, as well as the second largest tomato producing country in the world followed by China. Although raw tomato consumption is the mainstream means of consumption in today's India, the market for processed tomato is expected to expand in the near future considering the remarkable economic growth and dietary culture changes. Tomatoes are widely grown commodity with 136 mt production in the world. There is a big market for tomato products. The market scenario has revealed a positive indication for the specially packed tomato products in local as well as outside market. It is estimated that the total production of processed fruit & vegetable in India is about 15.0 lakh tonne. The major content of the book are varieties of tomato, select the best seeds and seedlings, growing preparation, canning of tomatoes, how to store & preserve tomatoes, basis for successful cultivation of tomato, crop husbandry, tomato pruning, dehydration/drying of tomatoes, canning of tomatoes, preserving by heating, tomato pulp, tomato paste, tomato ketchup, tomato juice, tomato powder, hazard analysis and critical control points, FPO and Agmark, products packaging, marketing. The purpose of this book is to present the elements of the technology of tomato preservation. The book explains raw material requirement, manufacturing process with flow diagrams of various tomato products with addresses of plant & machinery suppliers with their photographs. It deals with the products prepared from tomato commercially. It will be a standard reference book for professionals, entrepreneurs, food technologists, those studying and researching in this important area and others interested in the field of tomato products manufacturing.

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.

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.

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