

Plant Resource Utilization And Conservation

Before the concept of history began, humans undoubtedly acquired life benefits by discovering medicinal and aromatic plants (MAPs) that were food and medicine. Today, a variety of available herbs and spices are used and enjoyed throughout the world and continue to promote good health. The international market is also quite welcoming for MAPs and essential oils. The increasing environment and nature conscious buyers encourage producers to produce high quality essential oils. These consumer choices lead to growing preference for organic and herbal based products in the world market. As the benefits of medicinal and aromatic plants are recognized, these plants will have a special role for humans in the future. Until last century, the production of botanicals relies to a large degree on wild-collection. However, the increasing commercial collection, largely unmonitored trade, and habitat loss lead to an incomparably growing pressure on plant populations in the wild. Therefore, medicinal and aromatic plants are of high priority for conservation. Given the above, we bring forth a comprehensive volume, "Medicinal and Aromatic Plants: Healthcare and Industrial Applications", highlighting the various healthcare, industrial and pharmaceutical applications that are being used on these immensely important MAPs and its future prospects. This collection of chapters from different areas dealing with MAPs caters to the need of all those who are working or have interest in the above topic.

Plants as Medicines. Collection and Cultivation. The Role of Plants in Traditional Medicine. Medicinal Plants in International Herbal Markets. The Role of Planta in the Pharmaceutical Industry. Links between Medicinal Plants and Conservation: Prospects and Pitfalls.

Over the past decade the importance of natural resources for sustainable agricultural development has been increasingly discussed at international forums and conferences. Aside from the sustainable management of soil, water, and air, it now seems to be accepted that the sustainable management of genetic resources is one of the four indispensable preconditions for a sustainable agriculture. The discussion on conservation of plant genetic resources for food and agriculture (PGRFA), however, has to reflect the costs of conservation as well. These have not yet been discussed intensively. The study analyzes the conservation costs of plant genetic resources; it also assesses the effectiveness of conservation and the efficiency of the different conservation instruments. It is based on extensive surveys in relevant countries. Following the detailed cost and impact analysis, the results show that the effectiveness of conservation strategies may be increased.

The in situ approach

"The %conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture and Agriculture October 17-20, 2019, Nanjing, China": Final Program

Genetic Resources in Plants Conservation and Utilization of Horticultural Genetic Resources Managing Global Genetic Resources This book "Biodiversity Conservation and Utilization in a Diverse World" sees biodiversity as management and utilization of resources in satisfying human needs in multi-sectional areas including agriculture, forestry, fisheries, wildlife and other exhaustible and inexhaustible resources. Its value is to fulfill actual human preferences and variability of life. It is measured by amount of genetic variation available. In viewing diversity as an ultimate moral value, one is faced with a situation in environmental preservation in order to allow components of total diversity to flourish and constitute a threat to continuous existence and decrease total diversity. The overall importance described economic benefits from bio-diversity, though difficult to measure and varying, but are limited on a local scale, increase on a regional or national scale and become potentially substantial on a transnational or global scale.

This volume brings together a collection of papers by some experts in medicinal plants. It is presented as a contribution to clarifying the many policy and technical issues associated with the conservation, use, production and trade of medicinal plants. This publication draws attention to the huge contribution of medicinal plants to traditional and modern health care systems, but also alert the readers on the many problems and challenges facing their sustainable development, such as: assessment and management of the medicinal plant resource base; best harvesting and processing practices; trade issues and aspects dealing with the intellectual property rights on traditional medicine by indigenous peoples. The use of this document will help raise the awareness on medicinal plants as an important forest resource, and will help ensure that medicinal plants are adequately included in forest conservation and utilization programmes.

Local health traditions cannot be revitalized without ensuring the health of their medicinal plants resources base. For along term and sustainable utilization programme for medicinal plants, it is imperative that medicinal plants are not only domesticated and put under cultivation, but also conserved in the wild. This book is first of its kind thereby adding a new dimension to the cultivation, conservation and utilisation of medicinal plants. According to current estimates about three fourth of the herbal drugs produced in India are used for curing human ailments. Based on different researchers, strategies on conservation, cultivation and utilization on medicinal plants, the book profiles over 100 of such type of plants, which have been reported by different scientists, researchers, academicians and scholars of the country. The book highlights the current status of important medicinal plants of India and also has some interesting and vital tips. The book will be useful for research institutions, agencies, NGOs, scientists, academicians, importers and exporters, growers, suppliers, medicinal garden owners and all those working in the allied fields. Contents Chapter 1: Traditional Health Care in a Remote Area of District Chamoli (Garhwal), Uttaranchal: What Could Do With? by Hemlata, Chandra P Kuniyal and Y P S Pantyeg; Chapter 2: Medicinal Plants of India: Need for Their Preservation by Maya Ram Uniyal; Chapter 3: Angiospermous Seeds of Medicinal Importance in Gujarat State by Premendra Singh, S Sisodia and Jinesh Shah; Chapter 4: Management of Viral Diseases of Ashwagandha by I P Awasthi, R V Singh, Pardeep Kumar and Shyam Singh; Chapter 5: Ayurvedic Garden: A Novel Concept in Society for Education and Popularization of Medicinally Important Plants by Niraj N Upadhyay, Mitesh B Panchal and Vishal K Mulya; Chapter 6: Isolation of Larvicidal Ingredient from the Leaves of Catharanthus roseus for Mosquito Control by M F Alam, A K Chopra and V K Das; Chapter 7: Phenological Study of Naturalised Medicinal Herbs of Agra by Manjari Kumari and A K Singh; Chapter 8: An Ethnomedicinal plants in Melghat of Amravati District: A Need for Conservation and Utilization by Mahesh Measaram and V K Joshi; Chapter 9: Ethnomedicinal Plants of West Nimar (Kharagone) District, M.P. India by S K Pathak and Smita Pathak; Chapter 29: Makoi (solomon nigrum) and Punarnava (Boerhavia diffusa): Effective Herbal Drug in Liver and Kidney Disorders by D R Khanna, Pradeep Sharma and Pramod Kumar; Chapter 36: Isolation of New Isoflavonoids from

Influence of SO2 Pollution on Biochemical and Antioxidant Defense System of Medicinal Plant (Azadiracta indica): A Case Study by D R Khanna and Neetu Saxena; Chapter 14: Distribution Patterns of Coecionellids and Their Role in Biological Control of Mustard Aphids by Pushpa Singh and Sachin Srivastava; Chapter 15: Pharmaceutical Products and Anti-microbial Activity of Bryophytes: Uses of Green Brain by Kajal Srivastava and Shivom Singh; Chapter 16: Effect of Alcoholic Extract of Three Adiantum Species of Ferns Formulation for Stamina in Male and Female Albino Mice Subjected to Forced Swim Stress by D K Bhatia and R K Pandey; Chapter 17: Phytochemical, Antifungal and Antibacterial Studies of Premna cordifolia (Stem) by J S Jangwan, N K Agarwal and J S Kathait; Chapter 18: Phytochemical Examination of Pittosporum nepalense and its Effect on Microorganism as an Antibiacterial Agent by J S Kathait, Veenaa Joshi, N K Agarwal and J S Jangwan; Chapter 19: Isolation of Active Chemical Constituents and Study of Active Anticancer Alkaloid from the Root Extract of Pongamia pinnata (Vent) by Pawan Kumar Sagar; Chapter 20: Antibacterial Activity of Medicinal Plants Against Dental Infections by Prabhat and Navneet; Chapter 21: Conservation of Some Useful Medicinal Plants of Haridwar District in Uttaraanchal State by Anil Kumar Dhiman; Chapter 22: Medicinal Plant Diversity in Pindari Glacier Reserve (NDBR), Uttaraanchal by Laxmi Rawat, H B Vashista, Deepak Kholya and S K Kamboj; Chapter 23: Effect of Three Different Boiling Times for Extraction of Aqueous Extract of Peepal Leaf on Growth of Myrothecium oridium Tode ex Fr by Vishal K Mulya and Arun Arya;

Chapter 24: Rare Medicinal Plants in Use of the Folklore of Garhwal Himalaya by P P Baidoni, A K Dobral, P K Bahuguna, H K Joshi and G S Negi; Chapter 25: Antifedant Activity of Neem (Azadiracta indica) Juss) on Spilopsoma obliqua Walker by Dinesh Kumar Bhardwaj, M P Tyagi and Ashish Panwar; Chapter 26: Modern Dosage Forms in Ayurveda: A Study from Aaryabhishaj by Vishal K Mulya; Chapter 27: Development of a Database for Identification of Powdered Crude Drugs by S P Bhatnagar and V Kaushik; Chapter 28: Ethnomedicinal Flora of West Nimar (Kharagone) District, M.P. India by S K Pathak and Smita Pathak; Chapter 29: Makoi (solomon nigrum) and Punarnava (Boerhavia diffusa): Effective Herbal Drug in Liver and Kidney Disorders by D R Khanna, Pradeep Sharma and Pramod Kumar; Chapter 36: Isolation of New Isoflavonoids from Bowdichia virgillatae by C P Singh, Ashutosh Sharma, C Shekhar and Alok Gupta; Chapter 31: Ayurvedic Quick Remedies by Arun Chugh; Chapter 32: Approach to Cure Tamak Shwas (Asthma) by Panchkarma by Arun Chugh; Chapter 33: Status of Medicinal Plants Found in a Montane Forest of Garhwal Himalaya by Asha Dobhal, Pramod Kumar, G S Rajwar and Manisha Dobhal; Chapter 34: Biodiversity of Cultivated Fruits Plants in Jaunpur Development Block of District Tehri Garhwal, Uttaraanchal by Pramod Kumar, Suman Bisht and Asha Dobhal; Chapter 35: Physico-Chemical Screening of Abutilon indicum Roots by Shri Krishna, Amit Kumar and Navneet; Chapter 36: Comparative Growth Pattern in Nine Cultures of Ash Gourd by Miti Rani and R K S Rathore; Chapter 37: Medicinal Plants of Rigveda by Deepika Chauhan, Navneet and Prabhat; Chapter 38: Utilization and Conservation of Medicinal Plants by Sudha Dubey and Jyotsana Bhoraskar; Chapter 39: Antimicrobial Properties of Herbal Tooth Powders by Sanjay, Navneet, Murali Manohar and Prabhat; Chapter 40: Conservation Practices and Utilization Strategies of Medicinal Plants in Bhandara District of Vidharha Region by Deepak D Ramteke, Nitin Dongarwar, S B Zade and C J Khune; Chapter 41: Industrial Utilization and

Promotion of Medicinal Plants in India by Shikha Singhal and Amit Agarwal; Chapter 42: Biodegradation of Amla (Embia officinalis) and Their Products by Anjma Bhatti, Manisha, Divya Goyal and Seema Bhadauria; Chapter 43: Studies on In vitro Antimicrobial Activity of Essential Oil of the Nardostachys jatamansi and Zanthoxyflum armatum by Anupama Gautam, Shaibu Dalal and G R S Bisht; Chapter 44: Clinical Evaluation of the Effect of Capsula sativica on Cerebral Higher Functions by Uttam Kumar Sharma, Ajay Kumar Sharma and C M Sharma; Chapter 45: Green Tea and Benefits by Shaibu Dalal and Anupama Gautam; Chapter 46: Medicinal Plant Conservation by Rekha Sharma; Chapter 47: Antibacterial Activity of Polar Fraction of Callistemon lanceolatus and Callistemon viminalis by Harish Chandra, Arun Pratap Singh, Jatin Kumar Srivastava, Gyanendra Awasthi and Ajay Singh; Chapter 48: Optimization of Procedure for Dyeing of Cotton and Wool Fibres with Bark of Natural Dyes by S C Sati, J S Jangwan and Manisha Dobhal; Chapter 49: Optimization of Procedure for Dyeing of Wool, Cotton and Silk Fibres by S C Sati, Manisha Dobhal and J S Jangwan; Chapter 50: Medicinal Plant: Utilization and Conservation by Sudha Dubey; Chapter 51: Demographic Dispersion of Weed Flora of Rice, Maize and Wheat in Doon Valley (Uttaraanchal) by Arun Gupta, S P Joshi, Pramod Uniyal and Asha Dobhal; Chapter 52: A Survey of Wound Healing Plants used by the Tribal People of Kharagone District of Madhya Pradesh by K M Mahajan, Virendra Mandloi and Anil Raghuvanshi; Chapter 53: Angiospermic Diversity, Conservation and Documentation of Some Interesting and Rare Angiospermis of West Nimar District of M P by S K Mahajan, C I Dulkar, M M Keshare and Chelna Sawale; Chapter 54: Healthy Herb by V K Pandey and Reemas Pandey; Chapter 55: An Approach to Cure Paralysis and Arthritis Using Sida cordifolia by Panchakarma by Harish Chauhan, D R Khanna and R B Bhatnani.

Conservation of Tropical Plant Species

A Sustainable Strategy for the Biotechnological Utilization and Conservation of a Plant Resource : the Sage Model

Medicinal and Aromatic Plants

Applied Ethnobotany

Conservation and Utilization of African Plants

Plant Resources Utilization

This volume provides an enlightening and pragmatic approach to preserving biological diversity by gathering a wide range of peer-reviewed scientific content from biodiversity researchers and conservators from around the world. It brings comprehensive knowledge and information on the present status of conservation of biological diversity including floral, faunal, and microbial diversity. A detailed account of recent trends in conservation and applications under changing climate conditions, focusing mainly on agriculturally and industrially important microbes and their sustainable utilization, is presented as well. Over the past few decades, the use of MAPs caters to the need of all those who are working or have interest in the above topic. The book also discusses the various issues, concepts, benefits and values for economic and sustainable development; explores applications and strategies for biodiversity preservation; and considers the role of biodiversity conservation in public awareness services and cultural significance. The volume also examines the process of evolution and the future of biodiversity in conjunction with climate change factors, with special reference to infectious diseases.

Medicinal and aromatic plants (MAPs) are invaluable natural resources of use to human race, without which the survival of human/ animal race is incredible. There is an enormous diversity of plants which are put into medicinal, beauty care and culinary purposes. Cultivation of commercially important medicinal plants is in high demand as the global community is growing towards a green and herbal oriented approach. India as a country has thousands of years old traditional medicinal systems which rely solely on medicinal plants. There is a gradual loss of medicinal plants with the increasing demand of plant derived drugs. Majority of medicinal plants are still collected from the wild. This doesn't meet the demand and thereby pave ways to adulterants. The over extraction and ignorant activities cause biodiversity loss. Farm production of MAPs in these days is extremely vulnerable to underlying climate risk. Sustainable management of these resources requires urgent attention in order to increase variety of climate and altitudinal conditions coupled with varied ecological habitats. We from the humid tropical Western Ghats to the hot deserts of Rajasthan, from the cold desert of Ladakh to the icy mountain of Himalaya to the warm coast of peninsular India. The country is very important Vavilovian center of biodiversity and origin of over 167 important cultivated plant species and some domesticated animals. The present books contains articles by eminent scientists of the country on different aspects related to the subject. It contains up-to-date information about the application of biotechnology to meet the ever increasing demand of food, medicine, crop plants and management of environments. The articles related to Botanic Gardens aims to help quantify the global strategy for plant conservation (GSPC) adopted by the convention of Biological Diversity (CBD) in 2002. This will help to reaffirm the commitment of Botanic Gardens to plant conservation, education awareness, implementation of the International Agenda for Botanic Gardens in conservation and the promotion of sustainable development and sustainable living. Scholars and students of Botany, Ethnobotany, Agriculture, Forestry,

Conservation, Ecology and Environment will find this book very useful and informative.

The Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture

Bioprospecting of Plant Biodiversity for Industrial Molecules

Plant Resource Utilization and Conservation

Conservation and Utilization of Plant Genetic Resources

Conservation, Cultivation and Utilization

Agricultural Crop Issues and Policies

How plant genetic resources conservation became a global issue: Breeding strategies and conservation strategies. Establishing a global ex situ conservation network.

The first development of ideas on biodiversity conservation was already being considered almost three-quarters of a century ago for crop plants and the wild species related to them, by the Russian geneticist N.I. Vavilov. He was undoubtedly the first scientist to understand the impor tance for humankind of conserving for utilization the genetic diversity of our ancient crop plants and their wild relatives from their centres of diversity. His collections showed various traits of adaptation to environmental extremes and biotypes of crop diseases and pests which were unknown to most plant breeders in the first quarter of the twentieth century later. Later, in the 1940s-1960s scientists began to realize that the pool of genetic diversity known to Vavilov and his colleagues was beginning to disappear. Through the replacement of the old, primitive and highly diverse land races by uniform modern varieties created by plant breeders, the crop gene pool was being eroded. The genetic diversity of wild species was equally being threatened by human activities: over-exploitation, habitat destruction or fragmentation, competition resulting from the introduction of alien species or varieties, changes and intensification of land use, environmental pollution and possible climate change.

Plant Resource Utilization and Conservation

Determinants of Sustainable Utilization of Plant Resources in the Former Kakamega District, Kenya

Biodiversity Utilization and Conservation

Can Utilization and Conservation Coexist?

Volume 1: Africa and the Americas

Medicinal Plants

Conservation of Plant Genes III

This book covers a range of important topics on crop and animal genetics, breeding and genomics, as well as biodiversity and genetic resources conservation and utilization reflecting three thematic sections of working groups of the Biotechnology Society of Nigeria. The topics range from agricultural biotechnology, including genetically modified organisms and gene-editing for agronomically important traits in tropical crops, to Nigeria's mega biodiversity and genetic resources conservation. This book will engender a deeper understanding of underpinning mechanisms, technologies, processes and science-policy nexus that has placed Nigeria as a leader in biotechnology in Africa. The book will be useful reference material for scientists and researchers working in the fields of food and agricultural biotechnology, bioinformatics, plant and animal genetics, breeding and genomics, genetic resources conservation and enhancement. Emphasizes recent advances in biotechnologies that could ameliorate the high-level global food and nutrition insecurity through plant and animal genetics, breeding, as well as genomics Provides detailed information towards harnessing indigenous bioresources for food and nutrition security and climate change adaptation Introduces new frontiers in the area of genomics, most especially their relevant applications in crop and animal breeding Reviews biotechniques that could enhance plant genetic resources conservation and utilization Discusses current biotechnological approaches to exploit genetic resources including the development of synthetic hexaploid wheat (SHW) for crop adaptation to the increasingly changing global climate Olawole O. Ojembe, Ph.D., is a Professor of Plant Biotechnology and UNESCO Chair, Plant Biotechnology, Covenant University, Ota, Nigeria. Emmanuel Oluofemi Ekundayo, Ph.D., is Associate Professor of Medical Microbiology and Microbial Genetics, Michael Okpara University of Agriculture, Umuakike, Nigeria. Arinze Stanley Okoli, Ph.D., is Associate Professor at Genoeek - Centre for Biosafety, Universitetet II, Breivika, Tromsø, Norway. Abubakar Gidado, Ph.D., is Professor of Biochemistry and Director North-East Zonal Biotechnology Centre of Excellence at the University of Maiduguri, Nigeria. Charles Oluwaseun Adetunji, Ph.D., is Associate Professor of Microbiology and Biotechnology and Director of Intellectual Property and Technology Transfer, Edo State University, Uzairue, Nigeria. Abdulrazak B. Ibrahim, Ph.D., is a Capacity Development Expert at the Forum for Agricultural Research in Africa (FARA) and Associate Professor of Biochemistry, Ahmadu Bello University, Zaria, Nigeria. Benjamin Ewa Ubi, Ph.D., is a Professor of Plant Breeding and Biotechnology and Director, Biotechnology Research and Development Centre, Ebonyi State University Abakaliki, Nigeria.

Its wide and sensitive approach to working with local people will be relevant in situations throughout the world.' ECOS "The numerous diagrams, tables of data, information flow charts, fieldwork sketches etc. give a great vibrancy to the work... It deserves a wider readership. 'TEG News Wild or non-cultivated plants are crucial to the lives of a large portion of the world's population, providing low-cost building materials, fuel, food supplies, medicines, tools and sources of income. Despite their importance, their vulnerability to harvesting and other social impacts is not well understood. Applied Ethnobotany is the first practical guide to be published on how to manage wild plant species sustainably. This detailed manual on wild plant resources sets out the approaches and field methods involved in participatory work between conservationists, researchers and the primary resource users. Supported by extensive illustrations, it explains how local people can learn to assess the pressures on plant resources and what steps to take to ensure their continued availability. For all those involved in resource management decisions regarding fauna, this richness in biodiversity is due to immense variety of climate and altitudinal conditions coupled with varied ecological habitats. We from the humid tropical Western Ghats to the hot deserts of Rajasthan, from the cold desert of Ladakh to the icy mountain of Himalaya to the warm coast of peninsular India. This important 2-volume reference book is the first comprehensive resource reflecting the current global status and prospects of date palm cultivation by country. This volume covers Asia and Europe. The Asian countries included are: Iran, Saudi Arabia, Iraq, Pakistan, Oman, Yemen, Israel, Kuwait, Qatar, Bahrain, Syria, Palestine and India. Europe is represented by Spain. Topics discussed are: cultivation practices; genetic resources and breeding; conservation and germplasm banks; cultivar classification and identification based on morphological and molecular markers; micropropagation and progress toward scale-up production; and advances in dates processing and marketing. Chapters are supported by tables and color photographs. Appendixes summarize traits and distribution of major cultivars, commercial resources of offshoots and in vitro plants; and institutions and scientific societies concerned with date palm.

Conservation and Utilization of Threatened Medicinal Plants

Estrategia mundial para la conservación : la conservación de los recursos vivos para el logro de un desarrollo sostenido

A History of the Plant Genetic Resources Movement

Scientists, Plants and Politics

Agricultural Biotechnology, Biodiversity and Bioresources Conservation and Utilization

Plant Biodiversity and Genetic Resources

The Rich Biological Diversity in The Hotspot Region Of The Indian Eastern Himalaya Has Been Degraded Due To Various Human Activities (E.G. Shifting Agriculture, Commercial Logging) And Also Due To Frequent Landslides In The Hills And Floods In The Valleys. In This Region, Most Forested Lands Are Owned By Indigenous People. But Lack Authentic Policies For Land Use Management Patterns Vary Among The Tribal Groups And Have A Tremendous Bearing On The Resource Economics. Further, Concerns Have Increased On The Linkages Between Biological Diversity And Climate Change. Therefore, Assessment And Monitoring Biodiversity Has Been Crucial. Both In Terms Of Dimensions And Scale Of The Problem. Nevertheless, There Has Management Of Ecosystem Based Or The Traditional Ecological Knowledge Of The Indigenous People And/Or Intergrating Such Knowledge Into Policy Interventions. This Synthesis Volume Is An Attempt To Consume The Ecological Issues Of Biodiversity Utilization And Conservation With That Of Socio-Cultural And Economic D Views On Natural Resources Management For Biological Conservation. In The Present Book 23 Chapters Covering Broad Aspects Of Biodiversity Utilization, Traditional Land Use Systems And Their Conservation Have Been Presented By Various Experts Based On Case Studies Carried Out In Different Parts Of The Himalyan Region. Traditional Bio-Resource Utilization And Tribes Inhabiting In Northeast India Have Also Been Documented In This Book Apart From The Status Of Biological Diversity In Different Habitat Conditions Ranging From Agroforest And Cropland To Wetlands And Protected Areas. This Book Will Be Of Invaluable Resource For Students, Teachers, Researchers, Development Practitioners And Conservation Workers Interested In Commercialization Of Biodiversity, Livelihoods And Natural Resources Conservation.

BIOPROSPECTING OF PLANT BIODIVERSITY FOR INDUSTRIAL MOLECULES A comprehensive collection of recent translational research on bioresource utilization and ecological sustainability Bioprospecting of Plant Biodiversity for Industrial Molecules provides an up-to-date overview of the ongoing search for biodiverse organic compounds for use in pharmaceuticals, bio commercial applications. Bringing together work from a panel of international contributors, this comprehensive monograph covers natural compounds of plants, endophyte enzymes and their applications in industry, plant bioprospecting in cosmetics, marine bioprospecting of seaweeds, and more. Providing global perspectives on bioprospecting of plant biodiversity, it nutrients, biopesticides, algal biomass, and other bioactive molecules. In-depth chapters assess the health impacts and ecological sustainability of the various biomolecules and identify existing and possible applications ranging from ecological restoration to production of essential oils and cosmetics. Other topics include, bio-energy crops as alternative fuel resources and the industrial applications of endophyte enzymes. This comprehensive resource includes a through introduction to plant biodiversity and bioprospecting Will further the knowledge of application of different plants and improve research investigation techniques. Summarizes novel approaches for researchers in food science, microbiology, biochemistry, and biotechnology in an introductory and practical way for scientists, researchers, graduate and postgraduate students, and academics in the areas of microbiology, food biotechnology, industrial microbiology, plant biotechnology, and microbial biotechnology.

The conservation of crop genetic resources is one of the important elements in efforts to sustainably increase agricultural production in low-income countries, and to guarantee long-term food security, especially for the low-income population groups in these countries. Horticultural crops, as high-value crops, have an important role to play in revitalizing rural economies. Moreover, horticulture provides more than twice the number of jobs compared to traditional cereal crop production, and the shifting of conventional agriculture towards high-value horticulture has increased employment opportunities in developing countries. To exploit this potential, researchers need a vast array of horticultural genetic resources and information on PGRFA (Plant Genetic Resources for Food and Agriculture), are characterized by a wide and varied range of species. In fact, there are five major horticultural crop groups: fruit and nut crops, vegetables, food legumes, roots and tubers, and lastly the ornamental and medicinal group. In this context, the present book provides a comprehensive overview of the current resources, addressing contemporary approaches to conservation in connection with different technologies, including biotechnological approaches as practised in India and in some cases, globally. It includes a brief chapter on the unique nature of horticultural genetic resources, providing a rationale for viewing them as being distinct from field crop genetic resources conservation of selected horticultural crops ex situ, and focus on the increased need to complement these efforts with in situ conservation approaches. Geospatial tools are also briefly described, emphasizing their utility with regard to mapping and managing resources. The book also explores the wild gene pool in horticulture crops; discusses legal aspects related to and describes the key aspects of sustainable management and replenishment. Given its scope, the book offers a valuable resource for all horticulturists, graduate students, researchers, policymakers, conservationists, and NGOs engaged in horticulture in particular and biodiversity in general.

Medicinal Plants for Forest Conservation and Health Care

Conservation of Plant Genetic Resources for Food and Agriculture

Carbohydrate Resources Within the Perennial Plant

Conservation of Genetic Resources

Costs and Implications for a Sustainable Utilization

Costs and Implications for a Sustainable Utilization of Plant Genetic Resources for Food and Agriculture

A growing worldwide realization that biodiversity is fundamental to agricultural production and food security, as well as a valuable constituent of environmental conservation have been clearly observed. The importance of biodiversity and its conservation can not be overemphasized. The present text book "Plant Resource Utilization and Conservation" covers the syllabi of M.Sc. Botany final year students of most of the Indian Universities and particularly the syllabus recently recommended by the University Grants Commission. Book covers chapters on Biodiversity; Sustainable development; Origin of agriculture and Worlds centres of primary diversity of domesticated plants. Economic importance of food; Forage and fodder crops; Medicinal plants; Aromatic and essential oils; vegetable oils and fats; Plant fibres; Timber yielding plants; Tannin and dyes yielding plants; Gums and resins; Pulp and paper etc. have been given in detail. Chapters on Green revolution; Avenue trees and Plants in pollution control have been dealt with clarity and recent information. Book also includes chapters on Principles of conservation; Strategies for in-situ and ex-situ conservation and General account of national agencies (ICAR, CSIR, BSI, NBPG & DBT). This book will definitely serve as an excellent reading and reference material for students of Botany, researchers environmentalists, Agriculture scientists and forest personnels. We hope that students preparing for competitive examinations may also find the book useful.

This anchor volume to the series Managing Global Genetic Resources examines the structure that underlies efforts to preserve genetic material, including the worldwide network of genetic collections; the role of biotechnology; and a host of issues that surround management and use. Among the topics explored are in situ versus ex situ conservation, management of very large collections of genetic material, problems of quarantine, the controversy over ownership or copyright of genetic material, and more.

The papers included in this Special Issue address a variety of important aspects of plant biodiversity and genetic resources, including definitions, descriptions, and illustrations of different components and their value for food and nutrition security, breeding, and environmental services. Furthermore, comprehensive information is provided regarding conservation approaches and techniques for plant genetic resources, policy aspects, and results of biological, genetic, morphological, economic, social, and breeding-related research activities. The complexity and vulnerability of (plant) biodiversity and its inherent genetic resources, as an integral part of the contextual ecosystem and the human web of life, are clearly demonstrated in this Special Issue, and for several encountered problems and constraints, possible approaches or solutions are presented to overcome these.

International Symposium on Plant Resources Conservation and Sustainable Utilization:

Plant Genetic Conservation

Their Utilization and Conservation

Their Exploration and Conservation

Utilization and Conservation

Healthcare and Industrial Applications

Medicinal plants are globally valuable sources of herbal products. Plant-based remedies have been used for centuries and have had no alternative in the western medicine repertoire, while others and their bioactive derivatives are in high demand and have been the central focus of biomedical research. As Medicinal plants move from fringe to mainstream with a greater number of individuals seeking treatments free of side effects, considerable attention has been paid to utilize plant-based products for the prevention and cure of human diseases. An unintended consequence of this increased demand, however, is that the existence of many medicinal plants is now threatened, due to their small population size, narrow distribution area, habitat specificity, and destructive mode of harvesting. In addition, climate change, habitat loss and genetic drift have further endangered these unique species. Although extensive research has been carried out on medicinal and aromatic plants, there is relatively little information available on their global distribution patterns, conservation and the associated laws prevailing. This book reviews the current status of threatened medicinal plants in light of increased surge in the demand for herbal medicine. It brings together chapters on both wild (non-cultivated) and domestic (cultivated) species having therapeutic values. Thematically, conventional and contemporary approaches to conservation of such threatened medicinal plants with commercial feasibility are presented. The topics of interest include, but not limited to, biotechnology, sustainable development, in situ and ex situ conservation, and even the relevance of IPR on threatened medicinal plants. We believe this book is useful to horticulturists, botanists, policy makers, conservationists, NGOs and researchers in the academia and the industry sectors.

The book is designed to provide a review on the methods and current status of conservation of the tropical plant species. It will also provide the information on the richness of the tropical plant diversity, the need to conserve, and the potential utilization of the genetic resources. Future perspectives of conservation of tropical species will be discussed. Besides being useful to researchers and graduate students in the field, we hope to create a reference for a much wider audience who are interested in conservation of tropical plant diversity.

Ethnobotanical knowledge is a major component of indigenous knowledge systems which refers to a cumulative body of traditional knowledge about the interaction between human societies and the plant kingdom, and more specifically, how local people perceive, manage, and utilize the plant resources around them. This study examines the utilization of indigenous botanical plant resources in the former Kakamega District, Kenya. The study focuses on creating an inventory of indigenous botanical plant resources, their use, gender dynamics, impact of new technology, conservation measures and the quest for sustainable development.

Date Palm Genetic Resources and Utilization

Biodiversity and Sustainable Utilization of Biological Resources

Utilization and Conservation Techniques

The Global Plan of Action, the State of the World Report

Biodiversity and Conservation

The Global Plan of Action : the State Fo the World Report

*This volume is a collection of papers by experts in medicinal plants, presented to help clarify the many policy and technical issues associated with the conservation, use, production and trade of medicinal plants. The publication draws attention to the huge contribution of medicinal plants to traditional and modern health care system. It also alerts readers on the many problems and challenges facing their sustainable development. Subjects covered include assessment and management of the medicinal plant resource base; best harvesting and processing practices; trade issues; and intellectual property rights regarding traditional medicines of indigenous peoples. This documents will help raise awareness of medicinal plants as an important forest resource and will help ensure that medicinal plants are adequately included in forest conservation and utilization programmes. Contents Chapter 1: Introduction by G C Bodeker; Part I: General Articles covering Global Issues: Forest based medicines in traditional and cosmopolitan health care by A P Van Soest, Ethnobotanical research and traditional health care in developing countries by M Bolick and P A Cox, Between a rock and a hard place: Indigenous peoples, nation states and the multinationality by G Dwyer; Industrial utilisation of medicinal plants in developing countries by T de Silva, Trade in Medicinal Plants by S Kaper, Medicinal plant formulation database by K K S Bhat; Part II: Articles on Regional Aspects of Medicinal Plants Use: Biodiversity, People Interface in Nepal by N Bhattarai, Beyond the Biodiversity convention: the challenges facing the bio-cultural heritage of India's medicinal plants by D Shankar and B Majumdar, A bio-cultural medicinal plants conservation project in Sri Lanka by L de Abait, utilization and conservation of medicinal plants in China with special reference to *Atrocyldes lancea* by S-A He and N Sheng, An Africa-wide overview of medicinal plant harvesting, conservation and health care by A B Cunningham, Biodiversity conservation and the application of Amazonian medicinal plants in the control of malaria by W Milliken, Bulgarian model for regulating the trade in plant material for medicinal and other purposes by D Lange and M Mladenova.*

Phytomedicinal forest harvest in the United States by J A Duke.

This important 2-volume reference book is the first comprehensive resource reflecting the current global status and prospects of date palm cultivation by country. This volume covers Africa and the Americas. Countries included are: Egypt, Algeria, Sudan, Tunisia, Libya, Morocco, Mauritania, Niger, Cameroon, Djibouti, Chad, Mali, Somalia, Ethiopia, Burkina Faso and Senegal, as well as the United States of America and the South American countries Chile and Peru. Topics discussed are: cultivation practices; genetic resources and breeding; conservation and germplasm banks; cultivar classification and identification based on morphological and molecular markers; micropropagation and progress toward scale-up production; and advances in dates processing and marketing. Chapters are supported by tables and color photographs. Appendixes summarize traits and distribution of major cultivars, commercial resources of offshoots and in vitro plants; and institutions and scientific societies concerned with date palm.

Biodiversity Conservation and Utilization in a Diverse World

Volume 2: Asia and Europe

Carbohydrate Resources Within the Perennial Plant: Their Utilization and Conservation with Foreword by F. R. Tubbs

People, Wild Plant Use and Conservation

Carbohydrate Resources Within the Perennial Plant. Their Utilization and Conservation, Etc