



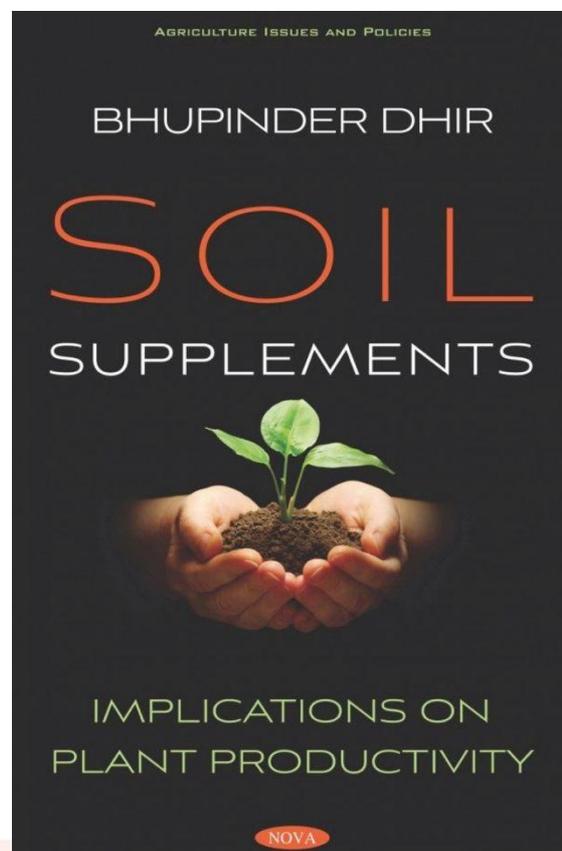
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AGRICULTURE, FORESTRY & FOOD



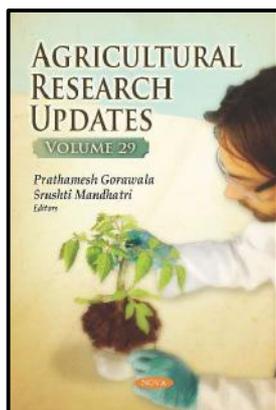
TITLES PUBLISHED BY NOVA SCIENCE

- Agricultural research updates
- Agricultural issues & policies
- Horticulture, viticulture & viniculture
- Plant science research & practices

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Agricultural Research Updates



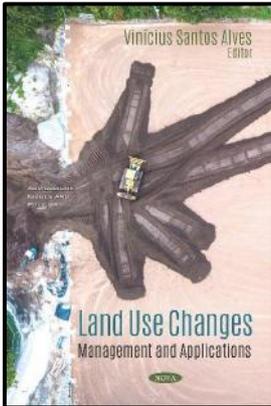
Agricultural Research Updates

Edited by Prathamesh Gorawala

Agricultural Research Updates. Volume 29 opens with information on wild edible plants commonly consumed by Jordanians and people of other neighboring countries. The presented plant spp. are among hundreds of wild edible species recorded in Jordan, are regarded as partially or totally consumable, and are usually used in food and medicine. The authors discuss various aspects of species complications among *Phytophthora*, and discuss the way these complications could be addressed through a better understanding of the biology, diversity, ecology, and taxonomic relationships between species. In one study, thirty African yam bean genotypes were evaluated for grain yield in a randomized complete block design of three replications in four agroecologies of Nigeria. Across the four locations, a mean yield of 1019Kg/ha was obtained. A mixed model was employed to access variability among the 30 genotypes and four locations. Lastly, this collection reviews the applications of size-exclusion chromatography in the fractionation of fructans and in the determination of their molecular weight, size, intrinsic viscosity and degree of branching.

Volume 29 - HB 9781536174182 £229.99 March 2020 Nova Science Publishers 273 pages

Volume 30 - HB 9781536187199 £229.99 October 2020 Nova Science Publishers 241 pages

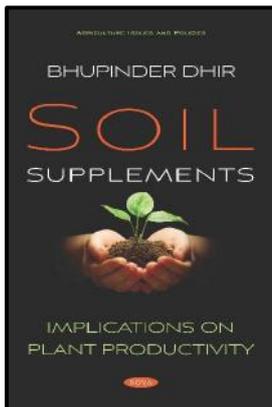


Land Use Changes Management and Applications

Edited by Vinicius Santos Alves

Land use is one of the most important aspects of the study of natural resources management and environmental change. Today, recognizing these changes is possible by comparing the differences between images taken in several specified periods in a specific region. The details of these changes are understandable by mapping the components of land resources into more than one period. Next, agricultural land use in Ukraine is explored. Providing general characteristics of processes in the Ukrainian agrarian sector witnessed over the past two decades, the authors estimate long-term trends and recent changes in agricultural land use and describe their drivers. A framework is provided which addresses sustainable land management through ecosystem services provided by healthy soils. This conceptual tool is designed to support policy makers in the management of five selected soil functions and demands: productivity, water availability, nutrients, carbon sequestration and biodiversity. In the closing study, the authors design a statistical model using atmospheric forcing to predict soil water storage for spring. The analysis of the efficiency of different models takes into account the adjusted squared correlation coefficient and cross-validation coefficient values.

PB 9781536170320 £75.99 January 2020 Nova Science Publishers 128 pages



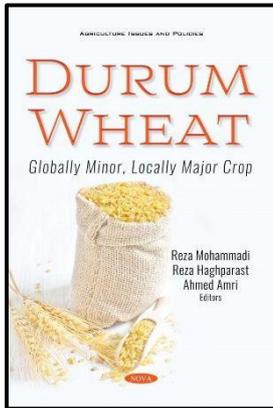
Soil Supplements Implications on Plant Productivity

Bhupinder Dhir

The need for more food to sustain the growing human population has led to the conversion of forests to croplands. Excessive input of chemical fertilizers has exerted pressure on soil resulting in the deterioration of its quality and productive potential. The changing environmental conditions and climatic transformations have also adversely affected the properties of soil. Realizing the negative effects of chemical fertilizers on soil quality, various organic substances, waste materials and other substances were explored for their potential to be used as soil supplements. This book provides detailed information about various inorganic, organic, biological and other non-conventional soil supplements with emphasis to the role they play in maintaining soil fertility and increasing agricultural productivity. The soil supplements contribute a lot in restoring the productive potential of soil to a great extent. Each soil supplement possesses certain advantages and limitations in restoring the fertility of soil. Integrated fertilizer treatment proves beneficial in restoring soil fertility for various types of soils. The book provides latest information on the topic and describes advances in soil science.

About the Author: The author is a botanist. Her research has been focused on studying the harmful effects of heavy metals on plants, their removal from contaminated waters, and wastewater treatment using phytoremediation technology. She also been associated with research groups working on environmental and toxicity aspects of medicinal plants. The years of research experience has given her the expertise in the subject area. Plant physiology, Stress physiology, Toxicity, Plant biochemistry has been her interests areas. She has contributed a lot to this field through publications in journals of national and international repute.

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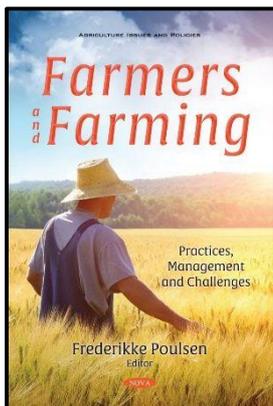
Durum Wheat **Globally Minor, Locally Major Crop**

Reza Mohammadi

In this book, experienced scientists in the field describe the importance of durum wheat as an adapted cash crop for drylands in detail, as well as a valuable food crop that must be paid more attention in relation to climate change, global warming, world population growth rate and declining food production resource. It is a ready valuable reference on the subject and reinforces the understanding for durum wheat production promotion as an environmentally sustainable and profitable crop and also its health benefits for its consumers. Various elements of durum wheat are described, highlighting associated breeding and analyzing the experiences and challenges.

It proposes some practical innovations and new areas of research for promotion of durum production in drylands and also its consumption instead of major food crops that are not as water-use efficient and have lower nutritional value than durum wheat, such as rice that are over consumed by people in dryland areas. This book also describes the trends in grain yield and quality of durum wheat and its importance as main sources of calories and proteins in many developing countries. It also reports genetic gains achieved by plant breeding in the last decades; and gathers known functional information on the genes conferring biotic and abiotic stresses in durum wheat to cope with climate variable environmental conditions. This book is an invaluable source of information for scientists, teachers, students, agricultural policy makers, and pasta and other durum products companies. Moreover, nutritionists must read the chapter about the importance of durum as a valuable food crop, to realize that in their food recommendation to people they must take into consideration the Earth and its diminishing food production resources.

PB 9781536178821 £75.99 July 2020 Nova Science Publishers 142 pages



Farmers and Farming **Practices, Management and Challenges**

Edited by Frederikke Poulsen

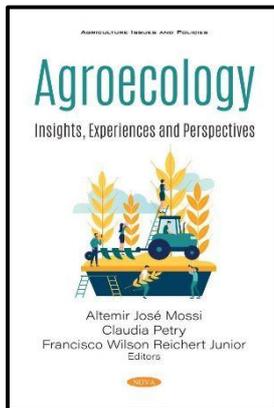
Farmers and Farming: Practices, Management and Challenges opens with a focus on livelihood, which refers to the way people make a living. Livelihoods are the means people use to support themselves, to survive and to prosper.

Next, the authors aim to analyze the socio-economic features of farmers involved in organic cultivation, exploring landholding patterns in the northern part of Karnataka state.

They also explore how gender-based farming systems analysis could be used to simulate the effects of a change in agricultural practices on gender relations, either with the aim to do no harm or with the objective to achieve more gender equality.

In closing, an overview on the potential and setbacks of intercropping in maintaining crop yields in changing climate in smallholder farmers in ESA set-up.

PB 9781536184631 £87.99 October 2020 Nova Science Publishers 177 pages



Agroecology Insights, Experiences and Perspectives

Edited by Altemir Mossi

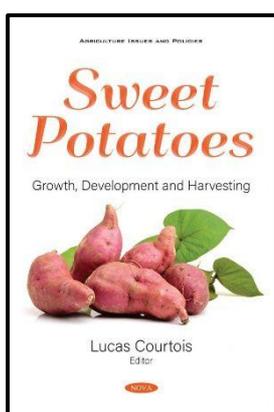
It is known that conventional agriculture with the use of inputs and agrochemicals is not sustainable in time, causing numerous problems such as contamination of food, people and environment. Thus, agriculture must adapt to cause the least possible impact to the environment and to human beings. In this context, agroecology enters as an alternative to conventional production, being a production system more ecologically correct, not allowing the use of pesticides and chemical fertilizers. Agroecological and organic systems are responsible for the production of food with less use of inputs external to the property, requiring a more efficient management of the vegetation cover and nutrient cycling.

In addition, the use of genetically modified organism (GMO) is not allowed in agroecology, and crops of commercial interest such as corn are widely sold with these technologies, in this sense landraces seeds are an interesting option for this type of agriculture. Agroecology allows the production of safer food, resulting in more food security for the producer and consumer. Even though agriculture is more environmentally friendly, many challenges are faced by producers, fragile legislation, lack of products and specific technical assistance and marketing. In this sense, this book will seek to discuss the main aspects related to agroecology and the challenges it faces such as commercialization, certification, the importance of agrobiodiversity for agroecology, on crops and food security, social organizations that promote and encourage this type of agriculture, biological control in agroecology, homeopathy and food security.

Reviews: “It was a great pleasure to know about the present work that seeks to re-establish the link between human life and living soil, its ecological relations, bringing experiences of family producers from southern Brazil and other Brazilian regions, populations linked to land and nature. As well as current legislation, the important activities of NGOs, organic certifications, biodiversity, agroforestry systems, the use of microorganisms, homeopathy. Surely this work will interest readers who have already realized that they need to improve their way of seeing and practicing agricultural activity in an ecosystemic, syntropic, holistic, resilient, natural context, with its numerous environmental services essential to ensure superior life, including ours.”

Ana Primavesi, Agronomist, Retired Teacher at the Federal University of Santa Maria, Agroecological Consultant Patron of Agroecology in Brazil

HB 9781536175189 £178.99 May 2020 Nova Science Publishers 346 pages



Sweet Potatoes Growth, Development and Harvesting

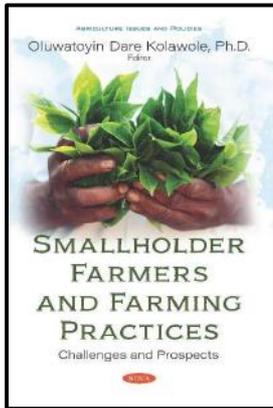
Edited by Lucas Courtois

Sweet Potatoes: Growth, Development and Harvesting introduces the potential benefits of sweet potato as a promising food crop for processing into baked foods and snacks, thus reducing production costs and providing economic efficiency for sweet potato producing countries.

The development of flour from sweet potato through the application of special technology, particularly bioprocessing (fermentation) and physical treatment, is discussed.

The concluding study evaluates the agronomic performance of eight selected sweet potato cultivars obtained from Embrapa Hortalíça's germplasm bank, including Brazlândia Branca, Brazlândia Rosada, Brazlândia Roxa, Beauregard, BRS Amélia, BRS Cuia, BRS Rubissol and Princesa.

PB 9781536186116 £75.99 October 2020 Nova Science Publishers 128 pages



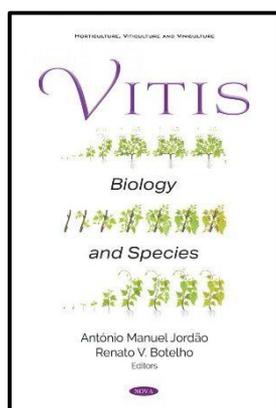
Smallholder Farmers and Farming Practices Challenges and Prospects

Edited by Toyin Kolawole

This book emanated from the research outputs of different authors whose diverse academic traditions and wide geographic spread play a major role in enriching its contents. The volume is mainly a compilation on smallholder farmers and their practices. The book also highlights the challenges, which small farmers frequently encounter, and the opportunities or prospects, which abound in their farming operations. Compartmentalized into three major sections, this 10-chapter volume provides an account of thought-provoking scenarios and narratives, which are rich and well suited for policy development and praxis. The book, therefore, compels policy-makers to see opportunities in every challenge associated with smallholder agriculture rather than see challenges in every opportunity therein. While some of the chapters present the results of field experimentations that highlight the impacts of certain geographic features and fertilizer use on root tuber cultivars' production, some explore the effect of climate change on smallholder farming practices and how small farmers counteract the vagaries of weather conditions, which might impede their livelihoods.

Nonetheless, most of the chapters largely rely on sociological methodologies to identify pertinent issues affecting the smallholder agriculture. While some of the issues underscore the advocacy for organic farming and its associated benefits or opportunities, others emphasize the uniqueness of certain agro-ecological farming systems and the opportunities, which they might offer resource-poor, smallholder farmers. A number of the chapters specifically provide some historical perspectives on the political economy of smallholder agriculture and identify the motivating and demotivating factors influencing young farmers' affection for farming while some accentuate the pertinent role of research in determining small farmers' response to the adoption of improved biotechnology in achieving food security. Throughout the book, authors' findings and viewpoints converge in many places on topical issues relating to environmental sustainability, mitigation of climate change, ethics of the agri-food systems and agricultural policy.

HB 9781536168921 £146.99 March 2020 Nova Science Publishers



Vitis Biology and Species

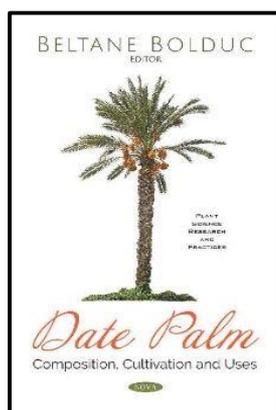
Edited by António Manuel Santos Tomás Jordão

The vine is one of the oldest plants on the planet, whose remotes fossils date back more than 120 million years ago. It has been part of human civilization since ancient times, with many indications of its use for consumption and cultivation in various archaeological and historical sites. Until today, the vine is very present in modern society, with great socio-economic and cultural importance in many countries. The taxonomy of the genus *Vitis* has been the subject of a lot of discussion, however it is generally considered to comprise two distinct sections: *Muscadinia* and *Euvitis*. It is clear that genus *Vitis* shows an impressive genetic variability for many agronomic characteristics being strongly conditioned by the climatic and soil conditions where the plants are implanted.

Thus, written by a group of international viticulture researchers, “*Vitis: Biology and Species*” is a book that provides up-to-date reviews, overviews and summaries of current research on the most recent developments in *Vitis* species characterization, biology and composition.

This book is composed by thirteen chapters that provide current research on different topics of recent knowledge about native grape varieties from different origins, the impact of different climatic and soil conditions on vine managements, the description of the main grapevines disease and their control, grape varieties composition and the use of modern digital technologies on viticulture. By reading this book, readers can find an excellent description of the state-of-the art information and perspectives regarding to the most recent studies on the different dimensions of *Vitis* plants production. This new book is an important publication, which will be of great use to winegrowers, vine and wine scientists, students and other professionals that might be interested in reading and learning about some fascinating areas of vine research and discovery the most recent tendencies of vine biology and species.

HB 9781536183085 £211.99 September 2020 Nova Science Publishers 395 pages



Date Palm Composition, Cultivation and Uses

Edited by Beltane Bolduc

Date Palm: Composition, Cultivation and Uses first summarizes the bioaccessibility of bioactive compounds in several Phoenix species, *P. dactylifera*, *P. reclinata*, *P. sylvestris* and *P. loureiroi*, to foster the integration of herbal and modern medicine.

Date palm propagation means by conventional techniques, biotechnology tools, and maintenance of plant material in the greenhouse prior to field transfer are presented. An overview of field transfer of date palm vitro-plants is also provided.

Following this, the authors discuss how experiments show that fertilizer addition is necessary for the improvement of date palm growth and increase of date fruits production. Date palm requires relatively great amounts of macro and micro nutrients to achieve good growth and give reasonable and economical production. Therefore, fertilization is one of the important practices that increases dates production and improves fruits quality.

Artificial pollination is a distinguished and vital practice in commercial production of the date palm fruit. As such, the authors discuss how safe transfer of pollen grains to the female flower stigma at the proper condition is necessary in order for the ovule to be fertilized and the proper fruit set achieved.

Date palm genetic resources have been preserved using in vitro micropropagation, and new elite cultivars are being produced using certain molecular breeding and biotechnological approaches. However, such measures are insufficient sustainable date palm production. This compilation proposes that it is time to introduce newly developed approaches such as high-throughput sequencing technologies, -omics technologies and CRISPR/Cas based approaches to revolutionize the date palm genetic improvement.

Continuing, farm-level production, productivity and income of date farms in Nefzaoua, southern Tunisia is examined. The self-selection bias was mitigated due to the adoption of multilayer farming.

Next, the authors discuss the most suitable irrigation water management strategy to minimize the effects of irrigation practices and future climate change on soil properties and on productivity of date palms.

In the closing study, the effects of light and darkness on the germination and conversion of date palm somatic embryos to plants is studied. The observed results indicate that darkness is associated with increased proliferation and germination of somatic embryos.

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