Trickle Irrigation For Crop Production Design Operation And Management Developments In Agricultural Engineering

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Management Strategies for Water Use Efficiency and Micro Irrigated Crops - Megh R. Goyal 2019-02-01

Management Strategies for Water Use Efficiency and Micro Irrigated Crops presents new research and technologies for making better use of water resources for agricultural purposes. The chapters focus on better management to improve allocation and irrigation water efficiency and look at performance factors as well. Chapters look at irrigation technology, environmental conditions, and scheduling of water application. One section of the book focuses on water management in the cultivation of sugarcane, a very important industrial crop used in many fields. Other sections are devoted to principles and challenging technologies, water use efficiency for drip-irrigated crops, performance of fertigated rice under micro irrigation, and evaluation of performance of drip-irrigated crops. This valuable book is a must for those struggling to find ways to address the need to maintain efficient crop production in the midst of water shortages. With chapters from hands-on experts in the field, the book will be an invaluable reference and guide to effective micro irrigation methods.

Closed Circuit Trickle Irrigation Design - Megh R. Goyal 2015-08-03

Closed circuit trickle irrigation is a form of micro irrigation that increases energy and water efficiency by using closed circuit drip irrigation systems designs. Modifications are made to traditional micro irrigation methods to reduce some of the problems and constraints, such as low compressor water at the end of irrigation lines. This approach has proved successful for the irrigation of fruit trees and some vegetable and field crops. Closed circuits of drip irrigation systems require about half of the water needed by sprinkler or surface irrigation. Lower operating pressures and flow rates result in reduced energy costs, and a higher degree of water control is attainable as well. Plants can be supplied with more precise amounts of water, and disease and insect damage is reduced because plant foliage stays dry. Fertilizers can also be applied through this type of system, which can result in a reduction of fertilizer and fertilizer costs. This new volume in the Research Advances in Sustainable Micro Irrigation book series presents a diverse collection of research on closed circuit irrigational technology and design and provides studies of its use on such crops as wheat, maize, yellow corn, soybeans, rice, and snap peas. The book explores: • Soil moisture and salinity distributions under modified sprinkler irrigation • Performance of sprinkler irrigation • Design considerations for closed circuit drip irrigation systems • Performance of bubbler irrigation • Energy and water savings of drip irrigation systems • Automation of mini-sprinkler and drip irrigation systems • Water and fertilizer use efficiencies for drip irrigated maize • Evaluation of emitter clogging for drip irrigated systems This book will be valuable for those interested in irrigation planning and management, namely, researchers, scientists, educators, upper-level students, agricultural extension services, and others.

Transforming Coastal Zone for Sustainable Food and Income Security - T.D. Lama 2022-08-09

Coastal areas are commonly defined as the interface or transition areas between land and sea, including large inland lakes. Overall, about 50–70 % of the global population live within 100 km of the coastline covering only about 4 % of earth’s land, thereby drawing heavily on coastal and marine habitats for food, building sites, transportation, recreational areas, and waste disposal. The people of these zones depend mainly on low productive agriculture due to several constraints such as prolonged water logging and drainage congestion in predominantly low-lying areas with heavy soils during the wet season, preponderance of saline and acid sulphate soils, scarcity of good quality irrigation water, particularly in the dry season, seawater intrusion into adjoining lands, and water pollution due to eutrophication, and others affecting the aquatic habitats, etc. Carbon sequestration in coastal areas, such as, marshes, lagoons, etc. has significant influence on soil quality, and the carbon pool in soils as well as their impacts on the environment. Over and above these, the coastal areas are prone to disasters due to climate change leading to colossal loss of lives and properties in many areas. Forestry and mangrove dynamics, in particular, because of their continuing diminishing nature, are also subjects of interest affecting the ecology of coastal zones requiring appropriate attention. The international symposium held in this context on ‘ Transforming Coastal Zones for Sustainable Food and Income Security ’ in virtual mode in March, 2021 offered scope to present and discuss various thematic areas by eminent scientists from all over the world. The proceedings of selected papers presented reflect cross-sectoral views of the areas highlighting, wherever necessary, a fusion of technologies, with the ultimate target to suggest livelihood security and sustainable development for the sensitive coastal zones. The book intends to share the knowledge with researchers, academicians, and various other stakeholders to address the complex problems of coastal regions, production constraints, social, economic, technical and environmental issues to draw out strategies for resilient agricultural technologies and improving livelihood security in coastal agro-ecosystems.

Landscape Irrigation - Stephen W. Smith 1997

Irrigation methods and components Drawing techniques and presentation Sprinkler and drip irrigation methods and hardware Pipe characteristics and hydraulics Control systems CSI irrigation specifications

Sustainable Micro Irrigation Management for Trees and Vines - Megh R. Goyal 2014-08-19

This valuable book, the third volume in the Research Advances in Sustainable Micro Irrigation series, focuses on sustainable micro irrigation management for trees and vines. It covers the principles as well as recent advances and applications of micro irrigation techniques. Specialists throughout the world share their expertise on: • Automation of micro irrigation systems • Service and maintenance of micro irrigation systems • Evaluation of micro irrigation systems • Scheduling of irrigation • Using municipal wastewater for micro irrigation • Micro-jet irrigation and other systems • The effect of potassium, acid lime, and other elements

Trickle Irrigation for Crop Production - F.S. Nakayama 2012-12-02

An entirely new agricultural technology, trickle or drip irrigation, began its development in the early 1960's. Initial progress was sporadic even though the advantages in water management with trickle systems were recognized. Operators were reluctant to use the system because of its high initial cost and questions regarding its reliability. Once the main problems were isolated and solutions developed to make the system reliable, rapid acceptance by the growers resulted. Today, trickle irrigation is being used on crops that were earlier considered to be uneconomical. This multi-purpose handbook brings together current knowledge from various engineering and scientific disciplines (crop, hydraulic, irrigation and soil sciences) needed for understanding the trickle irrigation system for crop production. The two dozen contributors are experts on the various subjects, which range from the basic to the more practical aspects of trickle irrigation. Major topics include design, operation and management - with individual chapters covering historical development, emitter construction and clogging, system design, water and salt distribution, automation, water treatment, irrigation scheduling, maintenance, fertilization and salinity. The book greatly expands the scope of research papers, reviews, extension bulletins, and updates earlier text with new information on trickle systems. A multi-disciplinary approach has been taken on a multi-faceted subject. The material contained in the book is the most comprehensive yet developed on the

topic. Illustrative sample problems and solutions provide field operators and extension personnel with information needed to install and maintain trickle systems. As it is up-to-date, it is useful as a teaching and reference source for students, manufacturers and irrigation system operators as well as irrigation and crop specialists, and consultants.

Water Use in Crop Production - M.b. Kirkham 2000-04-05

Make the best use of available water for your crops! Water Use in Crop Production explores innovative methods that determine how much water certain crops need, in certain climates, in order to ensure adequate plant growth and help eliminate water waste. Through this informative book, agronomists, growers, researchers, and graduate students will find methods and techniques for effective water management that will save money and conserve water. Water Use in Crop Production will enable you enhance crop quality and quantity and save one of the earth's most important resource. Comprehensive and thorough, this essential book combines two vital needs, food and water, and examines what must be done in order to keep up with the ever-growing human population. Explaining conservation techniques used in Argentina, Australia, Israel, Morocco, New Zealand, the Philippines, Spain, and the United States, Water Use in Crop Production will help you achieve this goal as it discusses water management measures including: avoiding excessive deep percolation reducing runoff lessening water evaporation through methods such as reducing the capillary water flow to the surface of the soil determining the rates at which water is demanded and can be supplied in a specific area to create a plan for limiting water loss studying the root structure of plants to calculate how much water they need using deficit irrigation to help plants save water for future use evaluating citrus water use through the Penman-Monteith model Containing charts, tables, and examples of the concepts it discusses, this book is the culmination of the latest studies on water storage. Water Use in Crop Production provides you with reliable strategies and methods that will help you lessen water expenditures and improve the vitality of crops anywhere in the world.

Quick Bibliography Series - 1976

Irrigation Systems and Practices in Challenging Environments - Teang Shui Lee 2012-03-28

The book Irrigation Systems and Practices in Challenging Environments is divided into two interesting sections, with the first section titled Agricultural Water Productivity in Stressed Environments, which consists of nine chapters technically crafted by experts in their own right in their fields of expertise. Topics range from effects of irrigation on the physiology of plants, deficit irrigation practices and the genetic manipulation, to creating drought tolerant variety and a host of interesting topics to cater for the those interested in the plant water soil atmosphere relationships and agronomic practices relevant in many challenging environments, more so with the onslaught of global warming, climate change and the accompanying agro-meteorological impacts. The second section, with eight chapters, deals with systems of irrigation practices around the world, covering different climate zones apart from showing casing practices for sustainable irrigation practices and more efficient ways of conveying irrigation waters - the life blood of agriculture, undoubtedly the most important sector in the world.

Selected Water Resources Abstracts - 1987

Journal of Maharashtra Agricultural Universities - 1991

Management of Drip/Trickle or Micro Irrigation - Megh R. Goyal 2012-07-19

This important book—the only complete, one-stop manual on microirrigation worldwide--offers knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. The simplicity of the contents facilitates a technician to develop an effective micro irrigation system. Management of Drip/Trickle or Micro Irrigation includes the basic considerations relating to soil-water-plant interactions, with topics such as methods for soil moisture measurement; evapotranspiration; irrigation systems; tensiometer use and installation; principles of drip/ micro/ trickle irrigation; filtration systems; automation; chloration; service and maintenance; design of drip irrigation and lateral lines; the evaluation of uniformity of application; and an economical analysis for selecting irrigation technology.

Sustainable Micro Irrigation - Megh R. Goyal 2014-07-14

This new book, Principles and Practices of Sustainable Micro Irrigation, is the first in the new series on micro irrigation, which offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. Written by experienced scientists from various parts of the world, the chapters in this book offer basic principles, knowledge, and techniques of micro irrigation management, which are essential in designing, developing, and evaluating an agricultural irrigation management system. The methods and techniques have worldwide applicability to irrigation management in agriculture. The book includes coverage of many important topics in the field, including: • An historical review of micro irrigation • The current global status of the field and its potential • Basic principles and applications • New research on chemigation and fertigation • Technologies for specific crops, such as sugar cane • Irrigation software for micro irrigation design • Affordable and low-cost micro irrigation solutions for small farms and farms in developing countries • Micro irrigation design using Hydrocalc software This book is a must for those interested in irrigation planning and management, namely, researchers, scientists, educators, and students.

Wastewater Management for Irrigation - Megh R. Goyal 2016-01-05

The reuse of wastewater in irrigation is being practiced only recently to solve water scarcity problems in agriculture. Management of water, soil, crop, and operational procedures, including precautions to protect farm workers, play an important role in the successful use of sewage effluent for irrigation. Appropriate water management practices must be followed to prevent salinization. If salt is not flushed out of the root zone by leaching and removed from the soil by effective drainage, salinity problems can build up rapidly. Leaching and drainage are, thus, two important water management practices to avoid salinization of soils. One of the options that may be available to farmers is the blending of treated sewage with conventional sources of water to obtain a blended water of acceptable salinity level. This important book focuses on the use of wastewater as a valuable resource for agricultural micro irrigation purposes. It covers effective wastewater management practices in a variety of climates, including semi-arid regions and others; how to perform effective evaluations to gauge the quality of the water on plants, including potatoes, maize, and eggplant; and the cost–benefit of using wastewater. It addresses the sources of wastewater for irrigation and the problems along with challenges, including water quality, clogging, soil quality, and more. The mission of this compendium is to serve as a reference manual for professionals in biological and civil engineering, horticulture, soil and crop science, and agronomy, as well as for graduate and undergraduate students in related fields. It will be a valuable reference for professionals who work with micro irrigation/wastewater and water management, for technical agricultural centers, irrigation centers, agricultural extension services, and other agencies that work with micro irrigation programs.

Sprinkle and Trickle Irrigation - Jack Keller 2001-03

This book, first published in 1990 and reprinted here, is a comprehensive, state-of-the art reference on the design principles and management techniques of two primary agricultural irrigation methods. The book presents a systematic approach to the optimal design, management and operation of these two systems. Focusing on the synthesis of the entire design process, the authors present the chapters in the sequence used to design systems with the analytical material presented and demonstrated in a concise manner. For the first time in any book, Sprinkle and Trickle Irrigation offers complete design strategies and presentations for all of the major types of sprinkle and trickle systems: - Periodic-move - Center-pivot - Traveling sprinkler - Linear-moving - Set sprinkler - Drip, spray and line-source Sequential sample calculations that involve the steps in the design of typical irrigation systems are used extensively. As the book progresses, these calculations become more comprehensive and are linked together to form complete design packages for the various types of pressurized systems. The book also presents a section on selecting pressurized irrigation systems, a review of soil-plant-water relationships, unique insight into pipeline hydraulics and economics, design specifications for fertilization and frost control, a glossary and an annotated bibliography of ASAE Standards for Pressurized Irrigation Systems. Sprinkle and Trickle Irrigation is an important practical reference for agricultural engineers, irrigation system designers and agricultural managers, as well as a vital text for professors and researchers in agricultural engineering. "Sprinkle and Trickle Irrigation presents beginning-to-end coverage of the processes and computations needed in the planning and design of sprinkle and trickle irrigation systems. The textbook is created for the thinking person who desires more than cookie-cutter recipes or simple, routine "rule-of-thumb" designs. Rather, the authors of Sprinkle and Trickle Irrigation present concise rationale and philosophy behind each computation formula, figure and table. They decouple "recommended" design parameters into underlying components that can be recoupled at the time

of the design to apply to specific cases and situations. In the process, the reader gains visualization skills that allow him/her to peer "inside" an irrigation system, both hydraulically, economically, and operationally. Sprinkle and Trickle Irrigation is a classic design text and reference that should be on every practitioner's desk. The chapters on center-pivot, linear-move and travelling sprinklers go well beyond other current texts. Solid and encompassing economics are infused into all design topics, including application, distribution, and pumping systems. I have lectured out of Sprinkle and Trickle Irrigation for twelve years at the university-senior level. I am confident that all students who completed this design course know not only how to design efficient and effective pressurized irrigation systems, but also know why they use the procedures that they use." Dr. Richard G. Allen, Professor, University of Idaho

Encyclopedia of water Science - Stanley W. Trimble 2007-12-26

Filled with figures, images, and illustrations, Encyclopedia of Water Science, Second Edition provides effective concepts and procedures in environmental water science and engineering. It unveils a wide spectrum of design concepts, methods, and solutions for enhanced performance of water quality, treatment, conservation, and irrigation methods, as well as improved water efficiency in industrial, municipal, and agricultural programs. The second edition also includes greatly enhanced coverage of streams and lakes as well as many regional case studies. An International Team Addresses Important Issues The only source to provide full coverage of current debates in the field, the encyclopedia offers professional expertise on vital issues including: Current laws and regulations Irrigation management Environmental water economics Agroforestry Erosion control Nutrient best management practices Water sanitation Stream and lake morphology and processes Sharpen Your Skills — Meet Challenges Well-Armed A direct and reliable source for best practices in water handling, preservation, and recovery, the encyclopedia examines challenges in the provision of safe water supplies, guiding environmental professionals as they face a worldwide demand for sanitary and affordable water reserves. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

Advances in Water Resources & Hydraulic Engineering - Changkuan Zhang 2010-07-28

"Advances in Water Resources and Hydraulic Engineering - Proceedings of 16th IAHR-APD Congress and 3rd Symposium of IAHR-ISHS" discusses some serious problems of sustainable development of human society related to water resources, disaster caused by flooding or draught, environment and ecology, and introduces latest research in river engineering and fluvial processes, estuarine and coastal hydraulics, hydraulic structures and hydropower hydraulics, etc. The proceedings covers new research achievements in the Asian-Pacific region in water resources, environmental ecology, river and coastal engineering, which are especially important for developing countries all over the world. This proceedings serves as a reference for researchers in the field of water resources, water quality, water pollution and water ecology. Changkuan Zhang and Hongwu Tang both are professors at Hohai University, China.

Management of Water Use in Agriculture - Kenneth K. Tanji 2012-12-06

As the world population increases, there is increasing competition for waterquantity as well as quality. Provided here is an up-to-date perspective on Available Water Resources (Part I), Water Conservation and Technology inAgricultural Systems (Part II), Problem Water Uses and Treatment (Part III),and Management and Policy Evaluation (Part IV). The book is an invaluable source of information for water resource planners, managers and policy makers, researchers and students, and irrigationists.

Advances in Life Sciences - Arvind Kumar 2004

Pleads For Science To Be Studied With An Integrated Approach. Presents 75 Research Papers In Different Fields Of Science-The Aims Is To Help The Scholars To Overtake Research, Training And Consultancy In Proverty Areas Of Science And Technology And Evolve Relevant Data Bases, Methodologies And Policy Frameworks In The Science And Technology Areas.

Management, Performance, and Applications of Micro Irrigation Systems - Megh R. Goyal 2014-08-19

Management, Performance, and Applications of Micro Irrigation Systems, the fourth volume in the Research Advances in Sustainable Micro Irrigation series, emphasizes sustainable and meaningful methods of irrigation to counter rampant water scarcity. In many parts of the world, this scarcity significantly affects crop yield, crop quality, and, conseq

Technological and Modern Irrigation Environment in Egypt - El-Sayed E. Omran 2020-03-26

This book gathers contributions on modern irrigation environments in Egypt from an environmental and agricultural perspective. Written by leading experts in the field, it discusses a wide variety of modern irrigation problems. In the context of water resources management in Egypt, one fundamental problem is the gap between growing water demand and limited supply. As such, improving irrigation systems and providing farmers with better control over water are crucial to increasing productivity. The book presents state-of-the-art technologies and techniques that can be effectively used to address a range of problems in modern irrigation, as well as the latest research advances. Focusing on water sensing and information technologies, automated irrigation technologies, and improved irrigation efficiency. It brings together a team of experts who share their personal experiences, describe the various applications, present recent advances, and discuss possibilities for interdisciplinary collaboration and implementing the techniques covered

Glossary of Terms in Crop Production - S. Ramamoorthy 2004-05-01

Agronomy deals with the principles and practices of crop production and soil management. In its broader sense, it includes crop ecology, crop production, crop nutrition, soil fertility, water management, weed control, seed technology etc. To be a good agronomist, one needs to have a sound knowledge of all these agronomic aspects as also some related aspects from other sciences. The task of selecting the terms to be included in any branch of science offers many difficulties particularly in Agronomy, which draws upon from several diverse fields of agriculture. How far, it is advisable to include terms from those over lapping science which lie on the borderland is a question on which no two people might think alike. A compilation of available information has been a felt need of students, teachers, research workers and administrators in Agronomy. This book makes an attempt to present the available information on Agronomy in an easily understandable manner. It would be useful not only to graduate and post graduate students and those appearing in the competitive examinations, but also to the teachers and researchers of the Agricultural Universities / research organizations.

Sustainable Irrigation and Drainage IV - Henning Bjornlund 2012

"Wessex Institute of Technology's Sustainable Irrigation 2012 Conference held at University of South Australia in Adelaide"--Preface.

The Literature of Agricultural Engineering - Carl W. Hall 1992

The second of a seven-volume series, The Literature of the Agricultural Sciences, this book analyzes the trends in published literature of agricultural engineering during the past century with emphasis on the last forty years. It uses citation analysis and other bibliometric techniques to identify the most important journals, report series, and monographs for the developed countries as well as those in the Third World.

Micro Irrigation Scheduling and Practices - Megh R. Goyal 2017-09-07

Many countries around the world are struggling with the challenges of water scarcity, including water for crops. Micro irrigation methods are an effective means to make the most efficient use of available water. This volume, Micro Irrigation Scheduling and Practices, continues the efforts of the book series Innovations and Challenges in Micro Irrigation to provide informative and comprehensive knowledge on micro irrigation methods and practices. This new book presents some of the latest information and research on micro irrigation and covers the area of performance, practices, and design, focusing particularly on the performance of vegetable, fruit and row crops in conjunction with different scheduling and practices. Irrigation scheduling is an important water management strategy, and this book addresses scheduling methods and issues. Design aspects of micro irrigation systems have also been discussed in the book. The authors present their research and studies on scheduling practices and design micro irrigation systems with a variety of fruits and vegetables, including peppers, chili, watermelon, oranges, banana, litchi, rice, sugarcane, sorghum, and marigolds. Micro Irrigation Scheduling and Practices will serve as a valuable reference for researchers, water resources professionals, agricultural extension agencies, farmers, and faculty and students.

Sustainable Practices in Surface and Subsurface Micro Irrigation - Megh R. Goyal 2016-04-19

This new book, Sustainable Practices in Surface and Subsurface Micro Irrigation, offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. The

information covered has worldwide applicability to irrigation management in agriculture. Focusing on both subsurface and surface micro irrigation, chapters in the book cover a variety of new research and information on: • Irrigation water requirements for tanier, vegetables, bananas, plantains, beans, and papaya • Irrigating different types of soils, including sandy soils, wet soils, and mollisols • New applications for micro irrigation using existing technology, such as meteorological instruments and MicroCAD • Meteorological instruments for water management

Green Agriculture - 2012-08-02

Green Agriculture: Green agriculture is a sort of system which carries out agricultural production with "green technology". It's basic content is based on biological diversity; keeping harmony between nature and economy during the course of agricultural development, by producing agricultural products in a pollution-free and nuisance-free environment. Methods and technologies to cater with climate change, droughts, floods etc is also dealt in detail in the book. The book "Green Agriculture: Newer Technologies" carries 18 s and covers most of the on farm adopted technology developed by our distinguished scientist mainly focusing, how to save the planet earth during agricultural activities through modern technology. The attempt is to highlight the recent agro-based development through newer technologies to make agriculture productive and eco-friendly.

Agricultural Engineering Soil Mechanics - E. McKyes 2012-12-02

This book provides an introduction to classical soil mechanics and foundation engineering, and applies these principles to agricultural engineering situations. Theoretical design formulae are given, plus tables and graphs dealing with bearing capacity factors, wall pressure factors, soil cutting numbers and soil mechanical properties. Many example problems of design and analysis are solved in the text, and there are unsolved problems given for each chapter. The text begins with descriptions of soil origins and classification systems, including agricultural classification schemes, and then introduces classical concepts of soil strength and strength measurement techniques in the laboratory and in the field. Soil mechanics is applied to the design of shallow foundations, and the design formulae as well as tables of bearing capacity factors for design use are provided. New research and design findings in the specialized area of tall and heavy farm silos are also given, in addition to deep pile foundation design for heavy structures on very soft soils. Water flow in soils is treated, together with stability of ditch bank slopes and small earth dams, design of retaining walls and pressure pressures in bins and silos, soil erosion and protection methods, soil cutting and tillage design methods, soil compaction analysis, the use of geotextiles and problems of soil freezing. The book is directed primarily at professional university students in Agricultural Engineering, but will also be of interest to scientists working in other engineering branches, landscape architecture, soil physics and the like.

Innovations in Micro Irrigation Technology - Megh R. Goyal 2016-03-30

The tenth and final volume in the series Research Advances in Sustainable Micro Irrigation, this valuable book focuses on new and recent innovations in technology, methods, and applications for micro irrigation. The book covers a wide variety of topics, including successes in micro irrigation in India, how new methods have helped the local economies in several areas, ways to enhance crop yield through new building programs, and new technology and systems. It looks at different aspects of these new innovations in micro irrigation, including economic impact, evaluation methods, bubbler systems, success with particular crops, scheduling, and more. This book is sure to be a helpful resource for professionals and practitioners in the field as well as for students pursuing the field of agriculture.

Subsurface Drip Irrigation - G. S. Jorgensen 1993

Managing water in plant nurseries - Michelle Smith 2021-09-27

Managing water in plant nurseries is the preeminent technical manual for irrigation, drainage and water recycling in Australia nursery production, and a benchmark text internationally. This 3rd edition is testimony to the ongoing value the industry places in achieving world-leading best practice in container irrigation, water management, recycling and reuse. CONTENTS Foreword Chapter 1. Water supply Chapter 2. Water quality and testing Chapter 3. Disinfestation: water and irrigation as a source of disease Chapter 4. Pumps and other irrigation equipment Chapter 5. Nursery filtration system Chapter 6. Top-watering irrigation systems Chapter 7 Bottom-watering irrigation systems Chapter 8. Misting and fogging systems Chapter 9. Growing media and irrigation management Chapter 10. System design, operation and maintenance Chapter 11. Fertigation in nurseries Chapter 12. Drainage systems Reference and further reading

Sustainable Micro Irrigation Design Systems for Agricultural Crops - Megh R. Goyal 2015-08-20

This new book, Sustainable Micro Irrigation Design Systems for Agricultural Crops, brings together the best research for efficient micro irrigation methods for field crops, focusing on design methods and best practices. Covering a multitude of topics, the book presents research and studies on: Indigenous alternatives for use of saline and alkali waters Hydraulic performance Distribution of moisture Fertigation technology Buried micro irrigation laterals Drip irrigation scheduling Rainwater harvesting Adoption and economic impact of a micro irrigation model This book is a must for those interested in irrigation planning and management, namely, researchers, scientists, educators, and students.

Encyclopedia of Water Science (Print) - Bobby A. Stewart 2003-07-31

PRINT/ONLINE PRICING OPTIONS AVAILABLE UPON REQUEST AT e-reference@taylorandfrancis.com

Simulation Models, GIS and Nonpoint-source Pollution - David Holloway 1992

Soil Compaction in Crop Production - B.D. Soane 2013-10-22

This book provides a global review of the mechanisms, incidence and control measures related to the problems of soil compaction in agriculture, forestry and other cropping systems. Among the disciplines which relate to this subject are soil physics, soil mechanics, vehicle mechanics, agricultural engineering, plant physiology, agronomy, pedology, climatology and economics. The volume will be of great value to soil scientists, agricultural engineers, and all those involved with irrigation, drainage and tillage. It will help to facilitate the exchange of information on current work throughout the world, as well as to promote scientific understanding and stimulate the development, evaluation and adoption of practical solutions to these widespread and urgent problems.

Microirrigation for Crop Production - 2006-09-28

Microirrigation has become the fastest growing segment of the irrigation industry worldwide and has the potential to increase the quality of food supply through improved water fertilizer efficiency. This book is meant to update the text "Trickle Irrigation, Design, Operation and Management". This text offers the most current understanding of the management criteria needed to obtain maximum water and fertilization efficiency. * Presents a detailed explanation of system design, operation, and management specific to various types of MI systems * Analyzes proper use of irrigation technology and its effect to increase efficiency * Provides an understanding to the basic science needed to comprehend operation and management * Over 150 figures of designs and charts of systems including, surface drip, subsurface drip, spray/microsprinkler, and more

Modern and Traditional Irrigation Technologies in the Eastern Mediterranean - Ozay Mehmet 2002

Modern and Traditional Irrigation Technologies in the Eastern Mediterranean

Irrigation Theory And Practice - 2Nd Edn - A M Michael 2009-11

It is a comprehensive treatise on Water Resources Development and Irrigation Management. For the last 30 years the book has enjoyed the status of an definitive textbook on the subject. It has now been thoroughly revised and updated, and thus substantially enlarged. In addition to the wholesale revision of the existing chapters, three new chapters have been added to the book, namely, Lift Irrigation Systems and their Design, Water Requirement of Crops and Irrigation Management, and Economic Evaluation of Irrigation Projects and Water Pricing Policy.

Stress in Swine - Janice C. Swanson 1990

Nonlinear Dynamics and Chaos in Agricultural Systems - K. Sakai 2001-06-21

An introduction to the analysis of chaos for readers majoring in agricultural science and an introduction to agricultural science for readers majoring in mathematical science and other fields. Hopes some readers will pursue further studies on the chaos of arable land. (Pref.)