

James Hardie Irrigation Manual

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; chlorination; service and maintenance; design of drip irrigation and lateral lines; the evaluation of uniformity of application; and an economical analysis for selecting irrigation technology.

Covering New York, American & regional stock exchanges & international companies.

The Second Edition of this best-selling academic guide to irrigation design has been completely rewritten so you can understand it easily. Created for the irrigation designer and installer, as well as students, Simplified Irrigation Design clearly explains irrigation design and related hydraulics, without the need for interpretation by teachers. Each chapter builds on the other, presenting all the fundamentals of irrigation design before getting into the more complicated aspects of irrigation, such as: * basic hydraulics * pipe sizing * friction loss calculations * determining water pressure. Photos and illustrations show exactly how every concept and piece of equipment works. In addition, you'll learn how to estimate costs and write specifications. Pipe sizes are described according to ASTM to help you fully understand the limits of irrigation pipe use. The expanded Second Edition of this popular guide to landscape irrigation includes all the latest equipment and techniques. Just a few of the new features include: * Methods of conserving water to help you anticipate your clients' environmental concerns * Computerized methods for managing labor and irrigation systems that will help you save money on labor and water costs * Metric values for every Imperial (U.S.) measurement, enabling you to meet federal metric guidelines and better communicate with an international audience. Another bonus: the author has combed the minds of irrigation designers, contractors, and equipment manufacturers to help you avoid costly mistakes that even veterans make. Whether you're just learning or brushing up on the latest technology, you'll want to read the Second Edition of Simplified Irrigation Design from cover to cover.

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.

"Soil and water edition of Transactions of the ASAE contains all articles approved by the ASAE Soil and Water Division editor for publication in the general edition," and constitutes the Division's Transactions.

Microirrigation history and research trends; Non-traditional uses of microirrigation; Hydraulic design and analysis of microirrigation systems; Microirrigation with saline water; Subsurface drip irrigation; Fertigation and management of microirrigation systems; Sensors and controls in microirrigation; Chemigation and water treatment for microirrigation; Microirrigation alternatives to limited water supplies; Microirrigation of turf and landscapes; Standards and international developments; International status and experiences with microirrigation; Subsurface drip irrigation; Design and management of microirrigation systems; Design and management of microirrigation systems; International status and experiences with microirrigation; Microirrigation of fruit crops; Microirrigation in vegetable crop systems; Water and energy conservation with microirrigation; Microirrigation in container and greenhouse production; Water filtration for microirrigation; Soil, plant and water relationships with microirrigation; Microirrigation of row crops; Products and developments in microirrigation; Microirrigation for crop production; Uniformity in microirrigation systems; Scheduling of microirrigation system; One-on-one poster presentations.

An immensely helpful guide, *Diagnostic Techniques for Improving Crop Production* presents and discusses diagnostic procedures that growers, production managers, and consultants need to know in order to optimize conditions for growing crops and realizing maximum economic yields. This book gives readers diagnostic techniques that include both field methods and laboratory procedures, while its instructor's manual helps professors of agriculture prepare growers for implementing techniques that lead to higher crop quality and yield, lower unit costs, and less pollution from agricultural chemicals. Field procedures and sample selection for laboratory procedures are given in detail, while those techniques run in a laboratory are briefly outlined and evaluated in terms of effectiveness and cost. *Diagnostic Techniques for Improving Crop Production* helps you learn how to provide ideal conditions for growth while eliminating or reducing stresses that can impair crop production. The book's instructor's manual helps you manage vast amounts of information and bring to life for your students key diagnostic procedures for evaluating chemical and physical characteristics of soil, seed vigor and purity, plant composition, crop maturity, water quality and timing of water applications, climatic conditions, and pest control. While most of the procedures deal with providing ideal conditions which help avoid problems, the final chapter discusses procedures useful in determining causes of poor crop performance, allowing you to correct problems before serious losses are sustained. By the end of this book, you will be much more skillful at determining the need and timing of fertilizers, water, and pesticides and able to reduce cost, waste, and harmful effects on the environment. *Diagnostic Techniques for Improving Crop Production* is unique in that it provides not only useful

diagnostic techniques but also norms for the various components responsible for optimum crop production. It emphasizes measurement of the components that affect crop yield and quality so the components can be altered when necessary to provide economical, ideal conditions for producing and marketing the crop. The book is a complete reference and guide for growers, farm and production managers, consultants, and extension personnel.

Landscape Irrigation Design provides information and approaches to assist the successful irrigation designer. Beginning with basic concepts, the text discusses the soil, plants, water and their interactions, sprinkler selection and spacing, water supply and distribution, controllers, electrical wiring, pumps and pump selection, and drip irrigation and ends with completed irrigation designs. Although the focus is on residential irrigation design, larger designs such as golf courses are also discussed. Careful presentation of a wealth of resource material allows this work to serve as both an introductory text as well as an independent learning aid and makes Landscape Irrigation Design a valuable reference for first and subsequent design projects.

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.

Buku Ilmu Tanah: Dasar-dasar dan Pengelolaan ini berisi tentang konsep mutakhir tentang sifat, ciri, dan proses dalam tanah sebagai dasar untuk penggunaan dan pengelolaan tanah berkelanjutan. Buku pegangan Ilmu Tanah Dasar untuk mahasiswa Fakultas Pertanian, disiplin terkait, dan praktisi ini merupakan penjabaran dari fungsi ekosistem tanah yang tertuang dalam 12 bab yaitu (1) Sumber daya Tanah dan Kehidupan di Muka Bumi ; (2) Proses Pembentukan Tanah; (3) Sifat Fisik Tanah; (4) Sifat dan Perilaku Air Tanah; (5) Ekologi Tanah; (6) Siklus Karbon dan Bahan Organik Tanah; (7) Sifat dan Proses Kimia; (8) Tanah dan Hara Tanaman; (9) Pengelolaan Kesuburan Tanah; (10) Klasifikasi Tanah, Survei dan Evaluasi Lahan; Degradasi Tanah dan Konservasi Tanah; (12) Tanah dan Kualitas Lingkungan. Buku ini ditulis oleh para senior di bidang Ilmu Tanah yaitu Prof. Ir. Muhajir Utomo, M.Sc., Ph.D. (Unila), Prof. Dr. Ir. Sudarsono, M.Sc. (IPB), Prof. Dr. Ir. Bujang Rusman, M.S. (Unand); Prof. Ir. Tengku Sabrina, M.Sc., Ph.D. (USU), Prof. Ir. Jamal Lumbaraja, M.Sc., Ph.D. (Unila), dan Prof. Dr. Ir. Wawan, M.P. (Unri). Buku persembahkan penerbit Prenada Media Group.

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

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IRRIGATION FUNDAMENTALS is a comprehensive text on the basic principles and practices of applied agricultural irrigation. Written over a period of more than 10 years, it is based on the authors' extensive experience in farming, consulting, research, teaching, and other related agricultural activities. The book is for use by teachers of introductory courses in irrigation, farmers who have some basic technical knowledge, and for administrators who need a general understanding of irrigation as an aid for policy decisions in water resource development and planning. Various factors that influence crop yield and production including climate, fertility, water, drainage, and agronomic practices are addressed. The various irrigation methods such as border, basin, contour, furrow, sub, sprinkle, and drip or trickle are described; and conditions are given for selection of the appropriate method to use. Recent developments and new technology are included herein when they have obvious practical applications, but for the most part the material presented in this book is based on well established principles and practices. Much of the content is very practical and much is essentially nontechnical. Nevertheless, some of the material covered in this book goes beyond the basic concepts in an attempt to better describe the relationships and techniques employed by irrigation scientists and irrigation engineers. From the Preface: The future of the world depends very much on how we manage natural resources. Since the year 1900 there has been a ninefold increase in global carbon emissions from burning fossil fuels, and the world population has increased about 3.7 times in this century. Vast areas of forests have been destroyed, and irrigated lands now produce 40% of the food supply. Due to depletion of groundwater reserves and an increase in population, irrigated area per capita is declining. Consequently, the irrigation of additional alluvial lands is a strategic necessity for all of humankind. Much of the alluvial lands cannot be made productive without prior development of water resources through flood control, drainage, and irrigation. The production of electricity through hydropower and the production of alcohol fuel from irrigated crops, as has been practiced for many years in Brazil, can slow the increase in carbon emissions. Such diverse developments are typically not separable; rather, they must be considered as integral parts of a comprehensive development plan. The conservation of natural resources and increasing productivity of irrigated lands are also strategic necessities. Much of the current technology is highly transferable and crop yields can be significantly increased on lands already under irrigation. The authors have worked in many countries in connection with resource inventories, teaching, and the planning, development and use of irrigation as a tool for increasing production and providing employment. They have written extensively and have been honored for their achievements. They have considerable experience with everything from primitive low-technology irrigation developments to highly developed irrigation in the USA and in dozens of countries around the world. Both of the authors have dedicated their careers to teaching,

research, and consulting in agricultural irrigation and water resources development and planning. It is their hope and expectation that this book will provide incentives for investigating and documenting land and water resources, improving development, increasing crop yields, conserving resources, and improving the environment. From the Table of Contents:

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