Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions

Senior Editor-in-Chief: Megh R. Goyal, PhD, PE
Retired Professor in Agricultural and Biomedical Engineering, University of Puerto Rico, Mayaguez Campus; Senior Acquisitions Editor, Biomedical Engineering and Agricultural Science, Apple Academic Press, Inc.

Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions, the fifth volume in the Research Advances in Sustainable Micro Irrigation book series, addresses the ever-challenging need for irrigation systems in arid and semi-arid regions of the world, areas that are suffering from severe water shortages. These areas, such as Egypt, Tunisia, most of Africa and parts of South America, Central America and Australia, find it a struggle to grow crops sustainably with the water available.

This important book emphasizes sustainable agriculture practices to promote increased water usage efficiency in dry areas for the growing of crops. It presents a variety of research and studies on such topics as:

- meteorological instruments for water management
- buried micro irrigation laterals for soil water retention
- water vapor flux models
- performance of various crops grown under different irrigation methods
- scheduling of irrigation
- phyto-monitoring techniques

This valuable book is a must for those finding it a challenge address to maintain sustainable crop production in the midst of continuous water shortages in areas where water is not naturally plentiful. With contributions from authors with hands-on experience in the field, the book will be an invaluable reference and guide to effective micro irrigation methods.

CONTENTs
Foreword by Gajendra Singh
Preface

Part I: Basics of Sustainable Micro Irrigation
Chapter 1. Meteorological Instruments for Water Management
Lee MacDonald
Chapter 2. Water Vapor Flux Models for Agriculture
Victor H. Ramirez and Eric W. Harmsen
Chapter 3. Quality of Irrigation Water Resources: Egypt
El-Henawy, A. S., M. R. Khalifa, and M. M. Saffan
Chapter 4. Maximum Wetting Depth under an Emitter
Hammami Moneef, Daghari Hedi, Balti Jelloul, and Maalej Mohamed
Chapter 5. Wetted Zone Behavior under Micro Irrigated crops
Hammami Moneef, Daghari Hédi, and Hatira Abdessatar
Chapter 6. Design of Burried Microirrigation Laterals Based on Soil Water Retention
Hammami Moneef, Zayani Khemaies, and Hédi Ben Ali

Part II: Applications of Micro Irrigation in Agriculture
Chapter 7. Economic Returns for Drip Irrigated Tomato
Ajai Singh
Chapter 8. Root Distribution under Drip Irrigated Tomato
Hamammi Moneef and Zayani Khemaies
Chapter 9. Performance of Drip Irrigated Tomato
Rajbir Singh, Satyendra Kumar, D. D. Nagare, and M. S. Meena
Chapter 10. Performance of Drip Irrigated Navel Orange
El-Henawy, A. S., M. R. Khalifa, S. A. Mashali, S. M. Youssef, and A. Rabie
Chapter 11. Phyto-Monitoring Techniques for Drip-Irrigated Citrus
P. Panigrahi and R. K. Sharma
Chapter 12. Irrigation Scheduling for Citrus reticulata Blanco
P. Panigrahi and A. K. Srivastava

Part III: Applications of Furrow Irrigation in Agriculture
Chapter 13. Response of Sugar Beet to Three Irrigation Regimes
Hany S. Gharib and A. S. El-Henawy

Books in the Research Advances in Sustainable Micro Irrigation series:
Senior Editor-in-Chief: Megh R. Goyal, PhD, PE
Volume 1: Sustainable Micro Irrigation: Principles and Practices
Volume 2: Sustainable Practices in Surface and Subsurface Micro Irrigation
Volume 3: Sustainable Micro Irrigation Management for Trees and Vines
Volume 4: Management, Performance, and Applications of Micro Irrigation Systems
Volume 5: Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions
Volume 6: Management Practices for Drip Irrigated Crop

Apple Academic Press, Inc.
9 Spinnaker Way, Waretown, NJ 08758 USA
Tel: 732-998-5302 / Fax: 866-222-9549
Email: info@appleacademicpress.com / www.appleacademicpress.com

Contents continued on side 2
Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions

Chapter 14. Soybean Irrigation Requirements under Varying Irrigation Regimes
M. R. Khalifa, Eman M. Soltan, and A. S. El-Henawy

Chapter 15. Irrigation Scheduling and Water Use Efficiency in Sunflower Production: North Nile Delta
A. S. El-Henawy, Eman M. K. E. Soltan, and M. R. Khalifa

Chapter 16. Irrigation Water Management for Sunflower Production: North Nile Delta, Egypt
A. S. El-Henawy and Eman M. K. E. Soltan

Appendices

Index

ABOUT THE EDITOR
Dr. Megh R. Goyal received a BSc degree in engineering in 1971, MSc degree in 1977, PhD degree in 1979, and Master of Divinity degree in 2001. He spent a one-year sabbatical leave in 2002–03 at the Biomedical Engineering Department of Florida International University, Miami, USA. Since 1971, he has worked as Lecturer/Research Assistant at Haryana Agricultural University and the Ohio State University, and Professor–cum Research Agricultural Engineer at Agricultural Experiment Station of the University of Puerto Rico, Mayaguez campus. At present, he is a retired professor in agricultural and biomedical engineering in the College of Engineering at University of Puerto Rico. He is also Senior Acquisitions Editor for Apple Academic Press, Inc., in the areas of agricultural science and biomedical engineering, as well as Senior Editor-in-Chief of the book series Advances in Bioengineering Research and Applications, published by AAP. He has authored more than 200 articles in technical journals and textbooks, including Elements of Agroclimatology (Spanish) by UNISARC; Colombia, two bibliographies on drip irrigation; the books Biofluid Dynamics of Human Body, Management of Drip/Trickle or Micro Irrigation, Evapotranspiration: Principles and Applications for Water Management, and Biomechanics of Artificial Organs and Prostheses; as well as the three volume series on Research Advances on Sustainable Micro Irrigation. Readers may contact him at goyalmegh@gmail.com

Order your copy of Application of Furrow and Micro Irrigation in Arid and Semi-Arid Regions today. Save 15% when you order online and enter promo code APP12.

FREE standard shipping when you order online only.