Preface

In the realm of agriculture, innovation is not just a fancy word; it is the cornerstone of progress. As we stand at the threshold of a new era, marked by burgeoning populations, climate variability, and evolving consumer preferences, the imperative for advancements in agricultural practices has never been more pronounced.

"Advances in Modern Agricultural Practices" stands as a testament to the relentless pursuit of excellence in agricultural research and technology. This edited volume brings together a diverse array of perspectives, insights, and breakthroughs from leading experts and scholars in the field. Through a meticulous selection process, it has collection of chapters that encapsulate the modern developments shaping the future of agriculture worldwide. Each chapter delves into pivotal areas driving transformative change in the agricultural landscape. By embracing interdisciplinary approaches and harnessing the power of innovation, the contributors to this volume offer invaluable contributions to the ongoing discourse on sustainable food production, environmental stewardship, and socioeconomic development. This book is not merely a compilation of theoretical discourse; rather, it serves as a practical guide and source of inspiration for agricultural stakeholders, policymakers, researchers, and practitioners alike. It underscores the significance of collaborative efforts and knowledge-sharing in addressing the multifaceted challenges confronting the agricultural sector today.

As editors, it is our privilege to present this volume to readers who share our passion for advancing the frontiers of modern agriculture. We extend our heartfelt gratitude to the contributors for their invaluable insights and dedication to excellence. It is our hope that "Advances in Modern Agricultural Practices" will serve as a catalyst for continued innovation and progress in the pursuit of a sustainable and resilient agricultural future.

Masina Sairam Santosh DT Dinkar J Gaikwad Sagar Maitra

Editors

Contents

	Preface	1
1.	Sustainable Agronomic and Soil Management Practices for Mitigation of Soil Salinity in the Coastal Region Tanuj Kumar Mandal, Pijush Das, Shraddha Bhattacharjee, Upasana Sahoo and Masina Sairam	1
2.	Role of Legume-based Intercropping System in Soil Health Improvement Sagar Maitra, Masina Sairam, Rajesh S Kalasare, Dinkar J Gaikwad, Chabolu Venkata Raghava, Tadiboina Gopala Krishna and Upasana Sahoo	41
3.	Biofortification of Agronomic Crops: Strategies and Future Perspectives Punnam Chhetri and Santosh D T	63
4.	Impact of Abiotic Stress on Crops and Management Strategies Pijush Das, Saumi Goswami, Tanuj Kumar Mandal and Sagar Maitra	83
5.	Urban Hydroponics: Growing Fresh Food in the City Dinkar J. Gaikwad, Nihal R, Ankita Panda and Smrutisikha Patnaik	129
6.	Managing Abiotic Stress in Controlled Greenhouse Environments Chitra Shukla, Punnam Chhetri and Santosh D T	145
7.	Exploring the Nutritional Aspects of Millets Dinkar J Gaikwad, Sagar Maitra, Smrutisikha Patnaik, Ankita Panda, S. Prasanth and Subash Chandra Munda	163
8.	Cover Crops: A Conservation Agriculture Strategy for Enhancing Soil Productivity and Agricultural Sustainability Subhankar Das and Masina Sairam	185
9.	Innovations in Aquaponics: Components, Operations, and Economic Viability Santosh D T and Chitra Shukla	207

10.	Optimization and Biofortification of Micronutrients in Cereals Sumit Ray and Masina Sairam	223
11.	Innovations in Polyhouse Mushroom Cultivation: A Holistic Approach Santosh D T	245
12.	The Impact of Plastic Mulch on Soil Health and Crop Productivity in Agriculture Santosh D T and Chitra Shukla	265
13.	Nano-biopesticides: Small Particles, Big Impact in Agriculture Santosh D T and Shashidhara N	279