

Contents

Preface	ix
Acknowledgment	xi
Chapter 1 Role of Legumes in Cropping Systems for Soil Ecosystem Improvement.....	1
Jagadish Jena, Sagar Maitra, Akbar Hossain, Biswajit Pramanick, Harun I. Gitari, Subhashisa Praharaj, Tanmoy Shankar, Jnana Bharati Palai, Akshit Rathore, Tanuj Kumar Mandal and Hanuman Singh Jatav	
Chapter 2 Novel Silver Nanoparticles as a Modern Defense Tool in Agro-Ecosystems.....	23
Anamika Verma and Mohita Srivastava	
Chapter 3 Nano Techniques for Efficient Fertilizer Management	45
Pratibha Singh, Mahendra Singh, Shilpi Gupta, A. P. Singh, Ajeet Singh, Shweta Gupta and Seema Sharma	
Chapter 4 Nitrogen Management in Field Crops and Strategies for Enhancing Its Efficiency	61
Asik Dutta, Ankita Trivedi, Narendra Kumar, C. P. Nath, K. K. Hazra, C. S. Praharaj, Hanuman Singh Jatav and Eetela Sathyaranayana	
Chapter 5 Unravelling the Significance of ACC-Deaminase in Sustainable Arid Soil Management.....	83
Anandkumar Naorem, Abhishek Patel, Shiva Kumar Udayana, M. Ashajyoti, P. Helena and Truptimayee Suna	
Chapter 6 Reclamation of Deteriorated Soils Utilizing Green Approaches.....	99
Nafeesa Farooq Khan and Summia Rehman	
Chapter 7 Sustainable Management and Restoration of the Fertility of Damaged Soils	113
B. Raghavendra Goud, M. Raghavendra, P. N. Siva Prasad, Veeresh Hatti, Hanamant M. Halli, G. V. Venkataravana Nayaka, G. Suresh, K. Sai Maheshwari, G. Adilakshmi, G. Prabhakara Reddy and Sudhir K. Rajpoot	

Chapter 8	Agronomic and Economic Assessment of Site Specific Nutrient Management in Crop Production	133
	Gurdeep Singh Malhi, Manpreet Kaur, Angrej Singh, Vijay Kant Singh, Sat Pal Saini and Hanuman Singh Jatav	
Chapter 9	The Risk Associated with Crop Ecosystem Management and Pesticides Pollution	151
	Manoj Kumar Chitara, Rajesh Pratap Singh, Prince Kumar Gupta, Dhruv Mishra, Surendra Singh Jatav Sachin Sharma and Hanuman Singh Jatav	
Chapter 10	Nanotechnology: An Efficient Tool in Plant Nutrition Management	165
	Sachin Sharma, Surendra Singh, Ayush Bahuguna, Bharti Yadav, Akshita Barthwal, Raghu Nandan Singh Khatana, Astha Pandey, Rajneesh Thakur and Hanuman Singh Jatav	
Chapter 11	Climate Change Effects on Biodiversity, Ecosystems, Ecosystem Services in an Indian Context	189
	Varsha Kumari, Priyanka Kumawat, D. K. Gothwal and Bhuri Singh	
Chapter 12	Overview of Soil Fertility from Past To Present	201
	Eetela Sathyanarayana, J. Bharghavi, Suddakanti Saranya, Santhosh Kumar Manchala, Mandla Rajashekhar, Jatoth Veeranna, Banda Rajashekhar, T. Prabhakar Reddy, Saideep Thallapally, Krishnananda Pralhad Ingle, Alamuru Krishna Chaitanya, Asik Duta, Alavala Umarajashekhar, Kumari Sunita and Hanuman Singh Jatav	
Chapter 13	Stubble Burning in Rice-Wheat Cropping System: A Threat to the Ecosystem	223
	Sachin Kumar, Saurbh Soni, Surinder Singh Rana and Ranbir Singh Rana	
Chapter 14	Fertilizer Recommendations by Using Different Geospatial Technologies in Precision Farming or Nanotechnology	241
	B. R. Meena, H. S. Jatav, B. L. Dudwal, P. Kumawat, S. S. Meena, V. K. Singh, M. A. Khan and Eetela Sathyanarayana	
Chapter 15	Use of Organic Soil Amendments for Improving Soil Ecosystem Health and Crop Productivity	259
	Vijay Kant Singh, Gurdeep Singh Malhi, Manpreet Kaur, Gurpreet Singh and Hanuman Singh Jatav	

Chapter 16	Fluorescent Pseudomonades: Diversity, Abundance and Potential Biotechnological Applications in Agriculture	279
	Mudasser Ahmed Khan, Samiran Gangopadhyay, Hanuman Singh Jatav, Ravi Kumar Meena, Sanjay Kumar Attar, Suresh Kumar, Ramu Meena, Kailash Chandra, Subhita Kumawat, Mujahid Khan, Champa Lal Khatik, Kailash Chand Verma, Subhash Chandra Mahala and Mukesh Nitharwal	
Chapter 17	Soil Fertility Management: Issues and Challenges in Tropical Areas of Nigeria	313
	Mukhtar Iderawumi Abdulraheem, Syed Muhammad Zaigham Abbas Naqvi, Linze Li, Shakeel Ahmed, Wentao Wei, Su Rui, Baolei Li, Can Li, Yanyan Zhang, Yuan Feng and Jiandong Hu	
Chapter 18	Ecosystem Management of Degraded Red and Lateritic Soil through Agroforestry.....	327
	P. Das and S. Panda	
Chapter 19	Sustainable Technology for Replenishing Ecological Soil Health	351
	Rahul Chopra, Ajeet Singh and Vishnu D. Rajput	
Chapter 20	Emergence of Nanotechnology in Efficient Nutrient Management in Soil	365
	Rakesh Kumar, Satdev, Shruti Kumari, Mahesh Jajoria, Nintu Mandal, Arun Kumar Jha and Rahul Raj	
Chapter 21	Current State of Knowledge in Diagnosis and Mitigation of Micronutrients Deficiency in Crop Production from an Indian Prospective.....	383
	Satish Kumar Singh, Astha Pandey, Ayush Bahuguna, Kiran Kumar Mohapatra, Abhik Patra, Eetela Sathyanarayana, Hanuman Singh Jatav, Surendra Singh Jatav and Vishnu D. Rajput	
About the Editors		417
Index		419