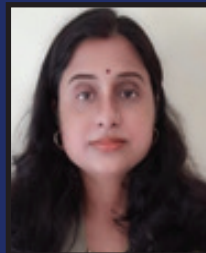


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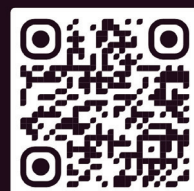


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Mobile No. +91-9026375938

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ISBN 978-93-6688-751-7
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DVS SCIENTIFIC PUBLICATION

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Transport Nagar, Mathura, Uttar Pradesh, Pin-281004, India.

MobileNo.:-9026375938

Email: dvsscscientificpublication@gmail.com

Web: <https://dvsscscientificpublication.in/>



Price:- 551/-

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PREFACE

As we face the mounting challenges of feeding a growing global population while confronting climate change and environmental sustainability, the science of agronomy has never been more critical. This textbook, "Fundamentals of Agronomy," has been crafted to provide students, researchers and practitioners with a comprehensive foundation in the principles and practices that underpin modern agricultural science. The 21st century presents unprecedented challenges to agricultural production, from rising temperatures and changing precipitation patterns to soil degradation and the need to reduce agricultural inputs while increasing outputs.

The book is structured to build understanding progressively, beginning with basic soil science and plant physiology before moving into more complex topics such as crop management, pest control and agricultural systems. Each chapter incorporates real-world examples from diverse geographical regions, ensuring that the content remains relevant to agricultural practices worldwide. Special attention has been paid to integrating ecological principles throughout the text, reflecting the growing importance of environmental stewardship in modern agriculture. Students will find detailed discussions of conservation agriculture, organic farming methods and integrated pest management alongside conventional agricultural practices.

This textbook bridges traditional agricultural knowledge with cutting-edge developments in sustainable farming practices, precision agriculture and climate-smart techniques. To facilitate effective learning, each chapter includes clear learning objectives, detailed illustrations and diagrams, case studies from different agricultural contexts, problem-solving exercises, review questions and suggested readings for further exploration. These pedagogical features ensure that students can effectively grasp and apply the concepts presented.

This comprehensive resource serves both as a classroom textbook and a practical reference guide for working professionals. Whether you are a student beginning your agricultural studies, a researcher seeking to broaden your understanding, or a practicing farmer looking to update your knowledge, this book provides the fundamental concepts and practical insights necessary for success in modern agriculture. As we move forward in an era of rapid technological advancement and environmental change, understanding the fundamentals of agronomy becomes ever more crucial.

It is our hope that this text will not only educate but also inspire the next generation of agricultural scientists and practitioners to pursue innovative solutions for sustainable food production. The challenges facing modern agriculture require both a solid grounding in fundamental principles and the ability to adapt to changing conditions. This book aims to provide both, preparing readers to contribute to the future of agricultural science and practice.

Happy reading and happy gardening!

Authors

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