A Handbook on Chemical Analysis of Soil

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DeepScience

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FOREWORD

Soil health is the cornerstone of sustainable agriculture, ensuring long- term productivity, environmental conservation, and food security. In an era where soil degradation, climate change and unsustainable farming practices pose serious challenges, it is imperative to adopt scientific methods for soil assessment and management. Accurate soil analysis plays a crucial role in optimizing nutrient use, improving crop yields, and maintaining ecological balance.

Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir has been instrumental in advancing research and extension services in the field of soil health and fertility management. Through its network of Krishi Vigyan Kendras, the university plays a pivotal role in disseminating scientific knowledge, conducting field demonstrations, and providing practical solutions to farmers for soil conservation and nutrient management. KVKs regularly organize soil health awareness programs, capacity-building workshops and field-based interventions to promote sustainable agricultural practices. Research initiatives at SKUAST-Kashmir focus on soil fertility enhancement, organic farming, and integrated nutrient management to support long-term agricultural sustainability.

This Handbook of Chemical Analysis of Soil is a valuable contribution to soil science and agricultural extension. It provides a systematic and practical approach to soil sampling, chemical analysis and interpretation of test results. The manual will serve as a useful resource for KVK professionals, extension officers, researchers and farmers in understanding soil properties and making informed decisions regarding nutrient management and soil fertility improvement. Moreover, it aligns with national initiatives like the Soil Health Card Scheme, reinforcing the need for evidence-based fertilizer recommendations.

I commend the authors for their efforts in compiling this manual, which will be beneficial to all stakeholders engaged in soil analysis and sustainable agriculture. I strongly encourage extension professionals, researchers, and rural youth farmers to utilize this handbook to improve soil health and ensure a resilient and productive agricultural system.

Prof. Raihana H. Kanth
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PREFACE

Sustainability of agriculture is important for food security, economic development and alleviation of poverty. There are several threatens to agriculture like rapid increase in population, shrinking of agricultural lands and climate change.

Soil health is deteriorating due to indiscriminate use of chemical fertilizers and pesticides and rapid industrialization. So, soil quality evaluation of agricultural soil is critical for maintaining agricultural sustainability. There are many ways for soil health assessment. However, soil testing plays an important role in the scientific management of soil resources, ensuring their optimal use while minimizing environmental degradation. Soil testing gives insights of availability of soil nutrients and guides the farmers regarding balanced fertilizer application.

Frequent soil testing allows farmers to evaluate their current management practices and identify any issues negatively affecting soil health and productivity. This process is vital for correcting soil deficiencies and preventing problems that could compromise future agricultural success. Moreover, informed decisions about crop selection and rotation are facilitated through a comprehensive understanding of soil fertility and health.

This book of Soil sampling and soil analysis is configured as a practical guide for agricultural professionals, students and officials working in extension departments that are involved in soil analysis and soil fertility management. It provides brief introduction of soils of Jammu and Kashmir, procedures for standardization of chemicals required in soil testing, scientific method of soil sampling, soil testing, enabling accurate assessment of nutrient status. Furthermore, the book will contribute to the mission on Soil Health Card Scheme, empowering farmers with the information required for soil sustainability.

We hope this book will serve as a valuable resource for sustainable soil management and agricultural practices o that our soil can be saved for future generations.

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