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	Nota di contenuto	1. Plant Phenomics: An Overview -- 2. Traits for Phenotyping -- 3. High Precision Phenotyping under Controlled versus Natural Environments -- 4. Towards Digital and Image Based Phenotyping -- 5. Imaging Methods for Phenotyping of Plant Traits -- 6. Screening for Plant Features -- 7. Phenotyping Crop Plants for Drought and Heat Related Traits -- 8. Phenotyping for Root Traits -- 9. Phenotyping for Soil Problems -- 10. Phenotyping Methods of Fungal Diseases, Parasitic Nematodes and Weeds in Cool Season Food Legumes -- 11. Advances in Phenotyping of Functional Traits -- 12. Role of Fluorescence Approaches to Understand Functional Traits of Photosynthesis -- 13. Identification of Subcellular Structural and Metabolic Changes through NMR -- 14. Precision Nutrient Management and Crop Sensing -- 15. Phenotyping Nutritional and Anti-Nutritional Traits -- 16. Experimental Designs for Precision in Phenotyping -- 17. Biometrical Approaches for Analysis of Phenotypic Data of Complex Traits -- 18. Harnessing

Genomics through Phenomics -- 19. High Throughput Plant Phenotyping Platforms.

Sommario/riassunto   Identification of desirable genotypes with traits of interest is discernible for making genetic improvement of crop plants. In this direction, screening of a large number of germplasm for desirable traits and transfer of identified traits into agronomic backgrounds through recombination breeding is the common breeding approach. Although visual screening is easier for qualitative traits, its use is not much effective for quantitative traits and also for those, which are difficult to score visually. Therefore, it is imperative to phenotype the germplasm accessions and breeding materials precisely using high throughput phenomics tools for challenging and complex traits under natural, controlled and harsh environmental conditions. Realizing the importance of phenotyping data towards identification and utilization of a germplasm as donors, global scientific community has exerted increased focus on advancing phenomics in crop plants leading to development of a number of techniques and methodologies for screening of agronomic, physiological, and biochemical traits. These technologies have now become much advanced and entered the era of digital science. This book provides exhaustive information on various aspects related to phenotyping of crop plants and offers a most comprehensive reference on the developments made in traditional and high throughput phenotyping of agricultural crops.