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Autore	Ohyanagi Hajime
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Altri autori (Persone)	YamamotoEiji KitazumiAi YanoKentaro AkagiTakashi AsariMiyu BambaMasalu ChandraAkshay L ChangWen-Chi ChowChi-Nga
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Nota di contenuto	Chapter 1: Plant Genomics. Masalu Bamba, Kenta Shirasawa, Sachiko Isobe, Nadia Kamal, Klaus Mayer and Shusei Sato Chapter 2: Plant Transcriptomics: Data-driven Global Approach to Understand Cellular Processes and their Regulation in Model and Non-Model Plants. Ai Kitazumi, Isaiah C.M. Pabuayon, Kevin R. Cushman, Kentaro Yano and Benildo G. de los Reyes Chapter 3: Plant Proteomics. Setsuko Komatsu and Ghazala Mustafa Chapter 4: Plant Metabolomics: The Great Potential of Plant Metabolomics in Big Data Biology. Miyako Kusano and Atsushi Fukushima Chapter 5: Plant Phenomics. Wei Guo and Jiangsan Zhao Chapter 6: Plant Non-coding Transcriptomics: Overview of lncRNAs in Abiotic Stress Responses. Akihiro Matsui and Motoaki Seki Chapter 7: Plant Epigenomics. Taiko Kim To and Jong-Myong Kim

Chapter 8: Plant Organellar Omics. Masatake Kanai, Kentaro Tamura, Katarzyna Tarnawska-Glatt, Shino Goto-Yamada, Kenji Yamada and Shoji Mano Chapter 9: Plant Cis-elements and Transcription Factors. Chi-Nga Chow, Kuan-Chieh Tseng and Wen-Chi Chang Chapter 10: Plant Gene Expression Network. Miyu Asari, Ai Kitazumi, Eiji Nambara, Benildo G. de los Reyes and Kentaro Yano Chapter 11: Plant Hormones: Gene Family Organization and Homeolog Interactions of Genes for Gibberellin Metabolism and Signaling in Allotetraploid Brassica napus. Eiji Nambara, Dawei Yan, Jing Wen, Arjun Sharma, Frederik Nguyen, Ange Yan, Karin Uruma and Kentaro Yano Chapter 12: Plant-Pathogen Interaction: New Era of Plant-Pathogen Interaction Studies: "Omics" Perspectives. Shu'an Zheng and Ryohei Terauchi Chapter 13: Plant GWAS. Matthew Shenton Chapter 14: Plant Genomic Selection: a Concept that uses genomics data in plant breeding. Eiji Yamamoto Chapter 15: Plant Genome Editing. Naoki Wada, Yuriko Osakabe and Keishi Osakabe Chapter 16: Introduction of Deep Learning Approaches in Plant Omics Research. Eli Kaminuma Chapter 17: Deep Learning on Images and Genetic Sequences in Plants: Classifications and Regressions. Kanae Masuda and Takashi Akagi Chapter 18: Deep Learning in Plant Omics: Object Detection and Image Segmentation. Wei Guo and Akshay L. Chandra Chapter 19: Plant Experimental Resources. Masatomo Kobayashi Chapter 20: Plant Omics Databases: an Online Resource Guide. Feng Li, Yingtian Deng, Eiji Yamamoto and Zhenya Liu.

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#### Sommario/riassunto

Plant omics combines a range of cutting-edge molecular techniques that are transforming plant science. This book explains the latest developments at each level and how they can help tackle global food security issues.

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