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   Descrizione fisica  1 online resource (viii, 151 pages)

   Soggetti           Botany - Mathematical models
                      Plant physiology - Mathematical models
                      Molecular biology - Mathematical models

   Lingua di pubblicazione   Inglese

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   Nota di contenuto  1. Cell and cell wall -- 2. Water relations in the cell and the whole plant: absorption, circulation and loss of water and nutrients -- 3. Chloroplasts and photosynthesis: plant-atmosphere relations -- 4. Assimilation of nitrogen and secondary metabolism -- 5. Respiration, fermentation and related processes -- 6. Growth and development: plant hormones -- 7. Miscellaneous plant processes -- Appendix I. Abbreviations and constants -- Appendix II. Units and conversion factors -- Appendix III. Formulas frequently used in plant science calculus -- Appendix IV. Reference data for energetic conversions and gas fluxes.

   Sommario/riassunto  The book addresses the compelling demand for quantitative training in plant biology, including comparisons of the rate of processes, the size of structures and interactions among different processes, approached at different levels from molecules to the environment. Attention is paid to aspects of modern molecular biology and to modern biophysical treatments of classical transport and circulatory problems. This will allow the reader to become familiar with calculus as a tool to understand plant science.