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Nota di contenuto	Front Cover; Plant Growth and Development: Hormones and Environment; Copyright Page; Contents; Preface; List of Reviewers; SECTION I: SOME SPECIAL ASPECTS OF PLANT GROWTH AND DEVELOPMENT; Chapter 1. Special Features of Plant Development; 1. Plants Have Evolved Some Novel Strategies For survival; 2. Growth, Differentiation, and Morphogenesis; 3. Organization of the Plant Body; 4. Plant Development Involves Commitments; 5. External or Internal Perturbations May Cause a Reversal of Established Commitments; 6. Chapter Summary; References; Chapter 2. Cell Wall, Cell Division, and Cell Growth SECTION I: CELL WALLSSECTION II: CELL DIVISION; SECTION III: CELL GROWTH IN PLANTS; SECTION IV: CYTOSKELETON PLAYS IMPORTANT ROLES IN CELL GROWTH, CELL SHAPE, AND CELL DIFFERENTIATION; References; Chapter 3. Embryogenesis; 1. Introduction; 2. Embryogenesis in Arabidopsis; 3. Genetic Dissection of Pattern Formation in Arabidopsis Embryos; 4. Analysis of Mutant Phenotypes in Maize and Rice; 5. Cloning and Characterization of Genes; 6. Embryogenesis in Other Plants; 7. Control of Patterning in Embryo

Development; 8. Somatic Embryogenesis; 9. Chapter Summary; References

Chapter 4. Determination, Differentiation, and Dedifferentiation in Plants

1. Commitment, Determination, and Differentiation; 2. Commitment Occurs in Steps, and Choices at Each Step Are Limited to a Few Options; 3. Role of Cell Divisions in Determination; 4. Mechanism of Differentiation; 5. Role of Cytoplasm; 6. Stability and Transmission of Determined States; 7. How Is the Determined State Maintained?; 8. Dedifferentiation and Redifferentiation; 9. Chapter Summary; References; Appendix 1. Molecular and Genetic Tools for Study of Plant Development; 1. Introduction
2. Regulation of Gene Expression
3. In Vitro Transcription; 4. Genetic Techniques; 5. Other Techniques; 6. Nomenclature of Genes, Mutants, and Proteins; References; SECTION II: STRUCTURE AND METABOLISM OF PLANT HORMONES; Chapter 5. General Features of Plant Hormones, Their Analysis, and Quantitation; 1. Discovery of Auxin and Other Hormones; 2. Characteristics of Plant Hormones; 3. Hormone vs Plant Growth Regulator; 4. Hormonal Responses Are Specific to a Physiological State; 5. Bioassays; 6. Hormone Extraction, Analysis, and Quantitation; 7. Determination of Hormone Synthetic Pathways
8. Regulation of Hormone Levels (Hormonal Homeostasis)
9. Chapter Summary; References; Chapter 6. Auxins; 1. The Term "Auxin" Includes a Variety of Structurally Unrelated Compounds; 2. Indole Acetic Acid (IAA) Is the Major Naturally Occurring Auxin; 3. Physiological Roles of IAA; 4. IAA Biosynthesis in Higher Plants; 5. Regulation of IAA Levels (IAA Homeostasis); 6. Inhibitors of IAA Action; 7. Other Naturally Occurring Auxins; 8. Synthetic Auxins; 9. Structural Diversity of Auxins; 10. Chapter Summary; References; Chapter 7. Gibberellins; 1. Discovery
2. Structure of Gibberellins (GAs) in Higher Plants

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#### Sommario/riassunto

This book provides current information on synthesis of plant hormones, how their concentrations are regulated, and how they modulate various plant processes. It details how plants sense and tolerate such factors as drought, salinity, and cold temperature, factors that limit plant productivity on earth. It also explains how plants sense two other environmental signals, light and gravity, and modify their developmental patterns in response to those signals. This book takes the reader from basic concepts to the most up-to-date thinking on these topics.\* Provides clear synthesis and re

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