

1. Record Nr.	UNINA9910808061003321
Autore	Leyser Ottoline
Titolo	Mechanisms in plant development // Ottoline Leyser and Stephen Day
Pubbl/distr/stampa	Oxford ; ; Malden, MA, : Blackwell, 2003
ISBN	1-282-17176-3 9786612171765 1-4443-1114-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (256 pages) : illustrations
Altri autori (Persone)	DayStephen
Disciplina	571.8/2
Soggetti	Plants - Development
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Mechanisms in Plant Development; Contents; Preface; Introduction; Sources for figures; Chapter 1: An introduction to flowering plants; Alternation of generations; Gametophyte development; Development of the sporophyte; Further reading; Chapter 2: Characteristics of plant development; Plant cells; Larger patterns; Theoretical framework for the study of developmental mechanisms; Conclusions; Further reading; Chapter 3: Cell-intrinsic information; Lineage; Case study 3.1: Laser ablation of cells in the Arabidopsis root tip; Case study 3.2: Green-white-green periclinal chimeras Case study 3.3: Mutations affecting division patterns Relationship between age and position; Case study 3.4: Mutations affecting the rate of leaf initiation in Arabidopsis; Conclusions; Further reading; Chapter 4: Primary axis development; Embryonic axes; Case study 4.1: Longitudinal axis of the Fucus embryo; Case study 4.2: Longitudinal axis of the Arabidopsis embryo; Case study 4.3: Radial axis of the Arabidopsis embryo; Conclusions; Further reading; Chapter 5: Axis development in the leaf and flower; Leaves; Case study 5.1: Adaxial-abaxial axis of the leaf Case study 5.2: Proximodistal axis of the leaf Case study 5.3: Determinate nature of leaf development; Flowers; Case study 5.4: Radial axis of the flower; Case study 5.5: Adaxial-abaxial axis of the Antirrhinum flower; Conclusions; Further reading; Chapter 6: Position relative to a particular cell, tissue or organ; Case study 6.1: The pattern

of trichomes on the Arabidopsis leaf; Case study 6.2: The pattern of root hairs in Arabidopsis; Case study 6.3: Phyllotaxy; Case study 6.4: Coordination of leaf and vascular development; Conclusions; Further reading; Chapter 7: Light; Light perception
Developmental responses to light Case study 7.1: Light-induced germination; Case study 7.2: Seedling etiolation and photomorphogenesis; Case study 7.3: Shade escape; Case study 7.4: Phototropism; Case study 7.5: Photoperiodic control of flowering; Conclusions; Further reading; Chapter 8: Environmental information other than light; Case study 8.1: Gravitropism; Case study 8.2: Thigmomorphogenesis; Case study 8.3: Effects of uneven nutrient supply on root development; Case study 8.4: Vernalization; Conclusions; Further reading; Chapter 9: The coordination of development
Case study 9.1: Initiation and maintenance of the shoot apical meristem
Case study 9.2: Transition from embryonic to post-embryonic development; Case study 9.3: Phase transitions in post-germination development; Case study 9.4: Shoot branching; Conclusions; Further reading; Chapter 10: A comparison of plant and animal development; Control of cell fate; Development of pattern; Consequences of autotrophy versus heterotrophy; Conclusions; Further reading; Index

Intended for undergraduate and graduate courses in plant development, this book explains how the cells of a plant acquire and maintain their specific fates. Plant development is a continuous process occurring throughout the life cycle, with similar regulatory mechanisms acting at different stages and in different parts of the plant. Rather than focussing on the life cycle, the book is structured around these underlying mechanisms, using case studies to provide students with a framework to understand the many factors, both environmental and endogenous, that combine to regulate development and g

Sommario/riassunto