



Endosperm : developmental and molecular biology /

Olsen, Odd-Arne

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Monografía

The nutritive endosperm of angiosperms is mankind's most important source of food, livestock feed and industrial raw material. This book is the first comprehensive overview of the developmental and molecular biology of endosperm. The text covers cereal endosperm development from fertilization to maturity, including molecular and cell biology of the syncytial phase, the cellularization process and cell fate specification of the embryo surrounding region cells, the basal transfer cells, the starchy endosperm and aleurone cells. In addition, endosperm development in the model species *Arabidopsis thaliana* is covered, along with recent progress in endosperm in vitro culture. Special features of endosperm, such as imprinting, polyploidy, programmed cell death and anthocyanin biosynthesis, are described in separate chapters. Finally, the genes and pathways for the main nutritional components of endosperm, storage proteins and starch are covered in detail. Each chapter is illustrated with figures and diagrams, accompanied by text intended for readers at all levels with a basic understanding of cell and molecular biology

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Contenido: The Developmental Biology of Cereal Endosperm -- Endoreduplication and Programmed Cell Death in the Cereal Endosperm -- Aleurone Cell Development -- The Embryo Surrounding Region -- Transfer Cells -- Arabidopsis as a Model for Understanding the Basics of Endosperm Development -- Endosperm Cell and Organ Culture -- Anthocyanin Synthesis in Maize Aleurone Tissue -- Protein Body Biogenesis in Cereal Endosperms -- Endosperm Cell Walls: Formation, Composition, and Functions -- Starch Formation in the Cereal Endosperm --

The Structure and Expression of Cereal Storage Protein Genes -- Genomic Imprinting in Arabidopsis thaliana and Zea mays

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