

This comprehensive textbook of plant biochemistry and molecular biology explains to an undergraduate audience the basic principles of plant metabolism and its many applications in commerce and agriculture, as well as giving pointers to current and future research.

The book provides a thorough grounding in the subject to an advanced level, covering photosynthesis, primary and secondary metabolism, the function of phytohormones, and molecular engineering. Topics include cell structure and function, glycerolipids, photoassimilation, polysaccharide metabolism, nitrogen fixation, phloem transport, plant storage proteins and protein biosynthesis, natural pesticides, the roles of isoprenoids and phenylpropanoids, plant growth regulation and development, and plant cell genetics and gene technology.

Plant biochemistry and molecular biology also describes the many practical commercial applications of plant biochemistry, molecular biology, and biotechnology, for example the use of genetic engineering to improve crop plants and to provide sustainable raw materials for the chemical and pharmaceutical industries.

The latest research findings have been included wherever possible, and areas of future research are identified. There are full references to the scientific literature.

This textbook is suitable for upper-level undergraduate courses and for taught graduate courses in plant sciences, environmental sciences, agriculture, and biochemistry and molecular biology.

- Comprehensive treatment
- Clear style
- Selection of information geared to student needs
- Illustrated with two-colour diagrams and well-constructed metabolic schemes
- Plant metabolism presented in the context of the structure and function of the plant
- Many examples of commercial applications in plant protection, production of sustainable raw material for industry, plant breeding, and improvement of the quality and quantity of harvest crops.

Hans-Walter Heldt is Professor of Plant Biochemistry at the University of Göttingen, Germany. Professor Heldt has been not only an outstanding educator but also one of the world's leading plant biochemists for nearly 30 years and is a highly respected figure in many of the fundamental areas of plant biochemistry including organelle bioenergetics, metabolite transport, compartmentalization, and enzyme regulation. His current research interests centre on translocators and the study of plant metabolism.

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