

Preface to the Second Edition

Since several developments have been reported in the science of Plant Physiology and Biochemistry after publication of the book, there is need for updation of the book in the light of current researches.

In this edition, the book is thoroughly revised eliminating errors and changing some figures/contents. Mechanism of phosphorylation and cyanide resistant respiration are rewritten to make them exhaustive and more informative.

Formation of protein synthesizing apparatus in prokaryotes and protein synthesis are redesigned in the light of 3 sites in ribosomes. Molecular basis of auxin induced responses are also revised.

Several relevant informations and illustrations have been added to make the book more comprehensible and useful. Added contents are: Reverse osmosis, effect of blue light on stomatal movement, chlororespiration, Line Weaver-Burk plot, artificial sweetners, post translational modifications, protein synthesis in chloroplasts and mitochondria, synthesis of unsaturated fatty acids, refined oils, trans fats, artificial fat, chemiosmotic theory of auxin transport, GA induced α -amylase synthesis, other known phytohormones, molecular basis of flowering and floral parts differentiation along with physiological and biochemical changes during senescence.

Regulation of various metabolic processes viz Regulation of glycolysis by PFK, aerobic respiration, pentose phosphate pathway, alternate oxidase pathway, fatty acid synthesis are also incorporated in this edition.

It is almost a complete book on Plant Physiology. Systematic study of the book will generate interest in the subject along with imparting a better understanding of the subject.

The author is grateful to the readers who have warmly accepted the book.

Author is thankful to Prof. (Dr.) J.V.V. Dogra former HoD of Botany, T.M. Bhagalpur University, Bhagalpur for his kind help and comments for improving the book.

Healthy criticism and suggestions for further improvement of the book from my learned colleagues/readers will be highly appreciated.

R K Sinha

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Plant physiology being one of the most important disciplines of life science, the students/teachers need to be aware of the latest developments for better understanding of the subject. Keeping this in mind both the recent developments as well as basic concepts have been incorporated in this book.

Divided into three sections: (i) Water and mineral relation of plants (ii) Metabolism and (iii) Growth and developmental physiology of seven, ten and nine chapters respectively, each chapter deals with a particular topic followed by subjective and objective problems for practice and includes further readings. The subject index at the end of the book facilitates easy location of keywords/specific terms.

The text is presented in simple and logical style with profuse diagrams and illustrations and is so arranged as to maintain continuity. Differences between allied processes viz. Phosphorescence and Fluorescence, Absorption and Adsorption etc. are presented in tabular form so that these can be memorised easily.

This book will serve as an up-to-date textbook of plant physiology for undergraduate and post-graduate students of Botany, Biochemistry and Agriculture and would also be of great help to students appearing at various competitive examinations.

Healthy criticism and suggestions for improvement of the book from my learned colleagues/students would be welcomed.

R K Sinha