

Book Review

Plant Propagation Concepts and Laboratory Exercises, Second Edition. Caula Beyl and Roberto Trigiano (Editors). CRC Press, Boca Raton, Florida, 498 pp. ISBN 978-1-4665-0387-8. Paperback, \$108.00.

For the last six years, I have been searching for a laboratory exercise book on plant propagation to complement my class textbook. The laboratories in the course are designed to help students to develop a wide range of propagation techniques and understand the underlying principles. However, I often was asked by my students how to set up a small propagation research trial independently. This new revision of propagation exercises edited by Caula Beyl and Robert Trigiano fits my needs.

The 40 chapters written by 47 contributing authors evolved from the first edition that was published in 2008 and has been restructured and revised extensively. The chapters are divided into 13 Parts: Part I Introduction to Plant Propagation; Part II Botanical Basics; Part III Plant Propagation Structures, Media, and Container; Part IV Plant Propagation Diseases and the Importance of Sanitation; Part V Evaluation of Propagated Plant; Part VI Propagation by Stem Cuttings; Part VII Part Propagation by Leaf and Root Cuttings; Part VIII Layering; Part IX Grafting and Budding; Part X Bulbs and Plants with Special Structures; Part XI Micropropagation; Part XII Seed Production and Propagation; and Part XIII In Conclusion: Special Topics.

With the first two parts of the book, the authors provide a brief background and history of plant propagation, information on the organization of the book, and essential information to help build a foundation on plant science including botany, plant physiology, plant growth regulators, sexual reproduction, and plant breeding and genetics. Parts III to IV deliver information on the propagation environment management and deal with various pathogens commonly present during propagation. Part V, the core of this book, provides critical information required for propagation experiments: experimental design, evaluation methods, and data collection, analysis, and interpretation. Parts VI to XII take a straightforward approach, exploring each propagation type and principle. Part VI introduces recent propagation techniques using long cuttings of woody plants and cuttings of various tropical plants. Part IX incorporates not only the traditional grafting and budding techniques for woody plants but also the art of grafting vegetables. Part XIII unscrambles the myths of plant propagation through experimentation and addresses important issue in the horticultural industry including intellectual property protection for plants. It also speculates about the future direction of plant propagation research and highlights how recent discoveries derived from molecular genetics research may impact plant propagation practices. In each chapter, the editors use the concept box to deliver primary concepts and summaries effectively. I found this organization effective not only for instructors, but also for students.

There are unique features that distinguish this book from other plant propagation

books. It includes a wide range of vital information related to plant propagation on topics from foundation of plant science, theory, and concept to laboratory exercises. This book provides not only an in-depth presentation of its subject but also laboratory exercises aligned well with the topic of each chapter. While encompassing every topic that is necessary with plant propagation, the laboratory exercises provide in-depth supplementary information and hands-on practices that represent the principles in the chapters. Particularly, it has a list of materials necessary to complete the experiments, step-by-step guidelines that are easy to follow through for beginners, examples of data collection, anticipated results of the laboratory exercises, and a list of critical questions. This book contributes to plant propagation learning and education by providing essential information in a clear, concise, and attentive manner, by cultivating a self-directed learning environment, by including plant materials from temperate to tropical regions, and by introducing past, current, and future techniques. Overall, this book is an excellent resource for a college, plant propagation course, either as a supportive reading material for a higher-level propagation course or as a single textbook for a lower-level course. It will be invaluable for students to enhance their skills and develop confidence in themselves as independent learners.

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