Soh, W.-Y., Bhojwani, S.S. (ed.): **Morphogenesis in Plant Tissue Cultures.** - Kluwer Academic Publishers, Dordrecht - Boston - London 1999. 520 pp. NLG 420.00. ISBN 0-7923-5682-9.

The combination of a well-known publisher, an interesting book title, several experienced authors, and a co-editor who has already published several updated editions of similar compendiums (see Bhojwani and Razdan 1996), all seem to promise a high quality comprehensive monograph. The book is of an adequate length, generally has informative photos and tables, and has been divided appropriately into two basic parts, "Basic studies" and "Applications." However, with these expectations, the reader is mostly disappointed.

The titles of the sixteen subchapters do not correspond to recent prevalent fashion of the "omnipotent" molecular biology. Instead, they indicate a sound retrospective of the development of plant biotechnology/plant tissue culture research in the last twenty to thirty years. A few examples include: "plant regeneration from cultured protoplasts, morphogenesis in haploid cultures, physiological and morphological aspects of somatic embryogenesis, floral and vegetative differentiation *in vitro* and *in vivo*, morphogenesis in cell an tissue cultures, somatic hybridization for plant improvement, cell differentiation and secondary metabolite production", and others.

It is hard to judge where the responsibility for this disappointment falls. Maybe the answer lies in the selection of the authors? However, it is the editors who are usually responsible for conceptual faults and unbalances of a book. Among chapter authors, the reader finds the names of many of the pioneers in plant tissue culture. It is evident though, that the author's age or fame alone does not guarantee the quality of individual chapters. Besides the very well written examples from the "kitchen classics" like Fowke "light and electron microscopic studies of somatic embryogenesis in spruce", Thorpe "shoot morphogenesis: structure, physiology, biochemistry and molecular biology", Larkin "somatic hybridization for plant imrovement", one also finds outdated contributions from Constabel "cell differentiation and secondary metabolite production" and Tran Thanh Van "floral and vegetative differentiation *in vivo*". For a publication of this scale, it is not enough for the authors to simply update information using a few recent publications based on their work from the seventies and eighties, even though modern experimental models (transgenic plants) or techniques (molecular analysis) are used.

On the contrary, the lack of experience of some younger authors is evident, for example, in chapters about "morphogenesis in micropropagation" and "germination of synthetic seeds." Both of these topics deserve a careful review, considering their practical application. It is unfortunate that the "synthetic seeds" chapter, which deals with a theme that was still very prominent at the beginning of the nineties, is only briefly discussed. It consists of only twenty pages of text which are based on about fifteen relevant citations, and is dedicated mainly to one company technology. The "morphogenesis in micropropagation" chapter, although written by authors from an institution with a significant tradition in this field, is too self-restrained and self-centered. The authors experiment with original terminology, which unfortunately is generally unacceptable (for example: "...inoculum is defined as the plant material taken from the mother plant to initiate a culture = original explant. Explant is the plant material used to subculture..."). Maybe in an effort to keep the "theoretical" and "application" sections separate, this chapter does not include the relevant topic of micropropagation of ornamental plants. Instead, a section called "developmental and structural patterns of *in vitro* plants" appears (without a logical explanation) in a different chapter.

Unfortunately, confusing terminology and newly created terms are not rare in this book. They appear as early as the editors' introduction. One can agree with the unique division of morphogenesis (*in vivo*, *in vitro*?) into "vascular differentiation", "organogenic differentiation" and "somatic embryogenesis." However, it remains a mystery why the phenomenon of pollen embyogenesis (tied to anther and microspore cultures) is lumped together with "organogenic differentiation." It is also hard to agree with the statement that this translated monograph is basically the first book devoted to morphogenesis *in vitro* since R.G. Butenko's published monograph (1964) – maybe only considering the title!

One can only partly agree with yet another sentence from the introduction: "We feel that the students and teachers of plant sciences would find this book useful..." Undoubtedly the book will be useful for teachers and advanced students. They will find it interesting because they will be able to sort out new information utilizing their own experience, thought and education. Novices to this topic can rely on the information from the higher quality chapters, especially those noted above. However, this book certainly is not a preeminent specialized monograph or textbook on the subject of "morphogenesis in plant tissue cultures", which is truly unfortunate.

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