

Slater, A., Scott, N., Fowler, M.: **Plant Biotechnology. The Genetic Manipulation of Plants.** – Oxford University Press, Oxford 2003. ISBN 0-19-925468-0. 346 pp., GBP 24.99.

Now, 27 years after the definite proof of the possibility of the integration of delivered foreign DNA into the plant genome, transgenic or genetically modified crop plant varieties have been released and are grown in the European Union. Good outlook of all biologists of the topic is very important because of public worries concerning genetically modified crops and derived food, which have been based on wrong reasons. Especially from this point of view the issue of new, up to date survey of the problema is very useful.

The reviewed textbook was written by three lecturers of plant molecular biology of Norman Borlaugh Institute for Plant Science Research at De Monfort University, Leicester. It provides basic outlook in plant biotechnology with special emphasis to plant transgenesis. The main advantage of this book is that the reading does not demand deep knowledge in plant molecular biology as all basic information and specific terms are clearly explained from the beginning. All the text is written by very fresh style, which stimulates further interest.

The book is divided into twelve chapters. The first one deals with the organization and expression of plant genome and the second one is on tissue cultures in plant science. Next chapters deal with the principles and techniques of *Agrobacterium* mediated and direct plant transformation and with the construction and use of plasmid plant transformation vectors. The following chapters deal with the different types of transgenes already used in crop varieties coding for herbicide, pest and disease resistance. Further chapters deal with transgenes which could be useful mostly in near future: those coding for stress tolerance the improvement of crop yield and quality as well as on molecular farming. Each chapter carries large number of figures, tables, and boxes with case studies, is concluded by clearly written brief summary, and supplies very reasonable number of

references for further reading most of them originating from year 2000 onwards including website links.

The book has a great advantage, which distinguishes it from several other books on plant transgenesis. Each chapter dealing with transgenesis for resistance to biotic and abiotic factors is introduced by elucidation of the natural mechanisms of plant defence to different stress conditions, and its genetic basis and transgenes are reviewed in broad context. For instance, in the chapter on herbicide resistance there is a table summarizing principles of physiological action of all types of herbicides used. The book gives, by very interesting and light form, good outlook on the enormous number of transgenes already introduced in plant genome but the authors succeeded to avoid overcrowding the text with facts.

From the point of view of practical biotechnology, it is a pity that the book does not distinguish clearly which transgenes have already been introduced into the genomes of crop cultivars and which are available for the potential use in future varieties. The reader does not obtain enough information on the different public opinions and on the legislative of genetically modified plants in different parts of the world. Relatively little information is given on the mechanisms of release of conventional and genetically modified plant varieties and the relationship of classical agriculture, GMO based agriculture breeding, and environmentally friendly agriculture. The lack of information of legal measures and attitudes to genetically modified plant varieties in EU countries is caused by the year of issue (2003) when some official points of view and measures were not yet taken. Despite that, it is still a very valuable and contemporary book, which will be of great interest to students and plant molecular genetics as well as to plant breeders.

M. ONDŘEJ (*České Budějovice*)