

BOOK REVIEW

Plant Tissue Culture: Applications and Limitations, 1990, S.S. Bhojwani (ed.). Elsevier Science Publishers, Amsterdam. 461 pages. \$120.00.

Plant Cell and Tissue Culture, 1991, Angela Stafford and W. Warren (eds.). Open University Press, Milton Keynes, U.K., 251 pages. Hardback \$74.25, £45.00. Paperback \$29.70, £17.99.

Progress in Plant Cellular and Molecular Biology, 1990, H.J.J. Nijkamp, L.H.W. Van der Plas, and J. Aartrijk (eds.). Kluwer Academic Publishers. 810 pages.

Plant Tissue Culture: A Classified Bibliography 1985-1989, 1990, S.S. Bhojwani, V. Dhawan, and R. Arora (eds.). Elsevier Science Publishers, Amsterdam. 406 pages. \$125.00.

The science and technology of plant cell and tissue culture developed over the past twenty-five years have had a profound effect on plant/science-related industries. These four books neatly illustrate the range of applications and interest in the field.

Plant Cell and Tissue Culture describes the theory behind plant cell and tissue culture techniques and processes, but essentially ignores any practical problems.

Bhojwani's *Plant Tissue Culture: Applications and Limitations*, on the other hand, tackles the practical problems in some depth. Aimed at those needing hands-on experience, fourteen of its nineteen chapters describe some applications of plant tissue culture as well as their limitations in four key areas of agriculture.

One of the primary forces in the transformation of plant tissue culture from an art to an industrial technology is micropropagation. According to Prakash and Pierik (unpublished), in 1990 approximately 500 million plants were produced through micropropagation in 60 industrial micropropagation units throughout the world. The growth in commercialization of micropropagation is reflected by the increased amount of micropropagation literature. *Plant Tissue Culture: A Classified Bibliography (1985-1989)* illustrates that during the period surveyed, there were more research papers published on micropropagation than on any other plant tissue culture discipline, including areas such as physiology, biochemistry, and genetic engineering.

The rapid application of the tools and techniques of biotechnology to agriculture in the 1980s has aroused wide-ranging expectations, especially in developing countries. The basic research has largely been carried out in universities and publicly-funded laboratories. However, work on the transformation of scientific information into economically viable products and technologies has been largely undertaken in the private sector. The question of whether the fruits of such research will be available to only those who can afford to pay for them was discussed at some length in a section of *Progress in Plant Cellular and Molecular Biology* titled, "Biotechnology and Developing Countries." An important conclusion drawn in the book suggests that the risk/benefit ratio of agricultural biotechnology appears very different from a developing country's perspective.

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