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Basra, A.S. (ed.): **Handbook of Seed Science and Technology**. - Food Product Press, an Imprint of the Haworth Press, New York - London - Oxford 2006, 795 pp. **USD 75.96**. ISBN 13: 978-1-56022-314-6.

Remarkable progress has been made in the field of seed sciences in the last decades. Thus it is not surprising that a completely new handbook on seed science and technology was published only two years after the comprehensive "Handbook of Seed Physiology" (Benech-Arnold and Sánchez 2004). Both volumes were released by Food Product Press, which announces that the main focus of both new handbooks is on agriculture.

Indeed, the scope of the reviewed volume is to provide thorough seed-science background for applied research and practice. Nevertheless, impressively broad range of the topics addressed makes this book an invaluable source of information for basic research in seed biology. By dealing with ovule development, processes involved in seed germination and dormancy, and reviewing seed ecology and synthetic seed technologies this handbook covers all main topics of seed science. Despite such wide range of topics the handbook is quite well arranged, which is achieved by dividing according into four main sections.

Section I, "Seed developmental biology and biotechnology", focuses on different stages of seed development and associated cellular processes. The dynamic role of cytokinins or key role of carbon partitioning in developing seeds are shown at the cellular, biochemical and molecular levels. Special attention is paid to biotechnologies such as enhancement of seed nutritive value using genetic engineering or synthetic seed biotechnologies, documented by practical examples. In this respect Chapter 4, which explores models that can be used to determine grain numbers, fits less consistently to the general topic of the section and would be better placed in Section IV, which deals with classical

technologies.

Section II, "Seed dormancy and germination", reflects recent molecular perspectives on the regulation and mechanisms of dormancy and germination, and explores the issue of hormonal signalling and interactions ruling these processes. Being myself an ecologist working on seed germination I found this part of the book most exciting. Another interesting chapter of this section addresses photoregulation of seed germination and explanation of the role of phytochromes in this process.

Section III, "Seed ecology", comprises different aspects of seed biology, such as competition for pollination and seed set, seed size, soil seed banks, seed predation or seed defence mechanisms. The topics are dealt with under a broad ecological context.

The last Section IV, "Seed technology", deals with special seed technologies used to assess seed quality and seed vigour, and conserve germplasm. Some techniques are commonly used, others result from recent technological development.

Individual chapters (25 contributions) are written as reviews of special topics with extensive reference lists which make the handbook a valuable overview of recent knowledge of seed biology and ecology. Moreover, many chapters end with future perspectives on the topic presented. The book has a strong applied facet (most information presented is discussed with practical implications for agricultural management), but it can be used as a source of information in all field of seed sciences. I can recommend it to undergraduate students, researchers and professionals working on various subjects of seed biology and ecology.

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