

Benech-Arnold, R.L., Sánchez, R.A. (ed.): **Handbook of Seed Physiology. Application to Agriculture.** - The Haworth Press, New York - London - Oxford 2004. 480 pp. USD 49.95. ISBN 1-56022-928-4.

The seeds are undoubtedly alpha and omega of plant agriculture. Therefore, a good handbook of seed physiology will always represent widely desired source of information necessary for the agriculture practice. In this respect the recently published *Handbook of Seed Physiology* seems to be a promising work.

Thanks to the effort of twenty-three specialists the book covers the elaborated theme from unusually wide point of view. With the aim to enable the reader an easy orientation in the text the editors divided the book into four main sections containing altogether thirteen individual chapters. Owing to this we can quickly select the topic we are interested in. In addition, each chapter contains extensive list of recent references giving an excellent overview of the current knowledge on the given subject.

Section I "Germination in the soil and stand establishment" is devoted to seed germination and seedling establishment in the field in relation to the environment (particularly soil) in which the crop is planted. Physical aspects of seed bed preparation, environmental requirements of germinating seeds and possibility of predictive seed germination modelling are discussed with the aim to understand how seeds germinate under the field condition. A special chapter deals with methods of improving seed performance in the field and give the reader the idea of progress reached in the areas of enhancement of seed invigoration and seed coating.

Section II "Dormancy and the behaviour of crop and weed seeds" is focused on seed dormancy on one hand as complication in crop seedling establishment and on the other hand on its lack can leading to the phenomenon

known as preharvest sprouting. In addition, the knowledge of weed seed dormancy is essential for the prediction of weed emergence from soil seed bank. Therefore, the physiology, genetics and environmental control of dormancy inception, maintenance and loss are discussed here regarding both crop and weed seeds. It seems that the studies linking together the genetics, molecular biology and physiology are the most promising methods to obtain detailed knowledge of seed dormancy.

Section III "Seed longevity and storage" is addressed to seed longevity of crop seeds in relation to their dry storage. In two chapters dedicated to either orthodox or recalcitrant seed, the processes are described that cause seed deterioration and physiological mechanisms allowing the seed survival of long-term storage.

Section IV "Industrial quality of seeds" presents information concerning industrial uses of commercially important seeds of cereal grains, oil crops or malting barley grains. This part deals in detail with the factors affecting the seed quality and gives the methods of best quality achievement.

In the introduction the editors stressed out their attempt to give their book a scope different from other valuable works, recently published in the area of seed biology, so dedicated the book mainly to agronomy. I can confirm that their attempt was successful. Although the handbook is devoted to agronomy and seems to focus on students and scientists of this branch, it offers much new and interesting information in the field of seed physiology that are general enough to be a good source of knowledge also for students, scientists and teachers who are interested in seed biology or ecology in general.

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