

PR-1 type proteins. - *Physiol. mol. Plant Pathol.* **55**: 85-97, 1999.

Wei, Y., Zhang, Z., Andersen, C.H., Schmelzer, E., Gregersen, P.L., Collinge, D.B., Smedegaard-Petersen, V., Thordal-Christensen, H.: An epidermis/papilla-specific oxalate oxidase-like protein in the defence response of barley

attacked by the powdery mildew fungus. - *Plant mol. Biol.* **36**: 101-112, 1998.

Zhang, Z., Collinge, D.B., Thordal-Christensen, H.: Germin-like oxalate oxidase, a H<sub>2</sub>O<sub>2</sub>-producing enzyme, accumulates in barley attacked by the powdery mildew fungus. - *Plant J.* **8**: 139-145, 1995.

Raman, S.: **Agricultural Sustainability. Principles, Processes, and Prospects.** - Food Products Press, An Imprint of The Haworth Press, New York - London - Oxford 2006. 474 pp. USD 69.95. ISBN 13: 978-1-56022-310-8.

This book contains a comprehensive survey of nearly all aspects of agricultural sustainability. The subtitle correctly indicates that the text deals with sustainability principles, processes and prospects in agriculture. Sustainable agriculture has been operated at many places on the Earth for centuries. However, it was never requested to feed some 10 billion people while ensuring “plant and animal productivity adequate to meet the needs of a growing population, ecological security and environmental quality, economic viability, social responsibility and acceptability” (p. 32). This is an absolutely new challenge not only for farmers themselves, but literally for mankind. Hence, a full-scale account on this topic as presented in the reviewed book is to be warmly welcome.

The book starts with a Foreword written by M.S. Swaminathan. I recommend all readers not to skip over these wise 3 pages. The contiguous Preface introduces the reader to the general context of sustainability and the very introduction explaining the intellectual layout, *i.e.*, organisation of the book. In fact, the text is divided into three parts as follows. Part I: Principles and paradoxes of agricultural sustainability (pp. 19 to 70) dealing also with contextual nature and conceptual framework of sustainability in agriculture. Part II: Operationalization of sustainable agriculture (pp. 71 to 264). In its 8 chapters the following topics are dealt with: resources and their conservation in nature, land management, soil quality, water management, biodiversity, energy management, and indices of agricultural sustainability. In this part, much detailed information has been included with many important values (for example global water resources and their use, ecosystem services, energy consumption, and indicators of soil quality). Although some of the statistical data are somewhat out of date referring mainly to the last decade of the 20<sup>th</sup> century, their qualified analyses and comments give sufficient evidence of their impact. Part III is entitled

“Transition to agricultural sustainability” (pp. 265 to 430). Its two chapters assess challenges to global agricultural sustainability and ways how to achieve it in the near future. Last but one chapter describes “Sustainable livelihoods and rural development”. The last chapter summarizes basic concepts of sustainable agriculture including its ethics. Bibliography occupies pages 431 to 458 and the book terminates with a detailed index.

As far as I am aware, this book is one of few sources of knowledge, ideas, principles, presumptions, suggestions, recommendation and hypotheses on sustainable agriculture in its broadest scope and particulars. Browsing, reading and studying its text will help understand both the term and necessity of sustainable agriculture. It is a remarkable achievement by its author. Myself, a crop physiologist, I miss just one aspect in dealing with sustainability: biology of the most important crop species as a non-replaceable aspect of future improvements aiming at reaching both sufficient food production while preserving nature ecosystems. An increase in water use efficiency, higher rates of the ratio of harvested solar energy to invested fossil energy, low input nutrient genotypes, *etc.* cannot be achieved if no better knowledge on both general and special (crop species oriented) plant biology is accomplished. But I admit, that this aspect would slightly lie outside the general scope of this book. Nevertheless, these biological aspects should be accepted as equipotent or even dominant over management or economic viewpoints.

Briefly, this book represents a valuable contribution to recent discussion on sustainability. It is written by a very competent author. Much information is offered to everybody who is professionally engaged in sustainability study, planning or management. Its diction is such that it satisfies professionals and remains understandable to non-experts. It is a pleasure for me to thank the author for such a book and congratulate him on this comprehensive and competent text.

L. NÁTR (*Praha*)