Acta Biochimica Polonica

Vol. 42 No. 1/1995

125–126

QUARTERLY

Books Review

Impact of arbuscular mycorrhizas on susteinable agriculture and natural ecosystems

by S. Gianiazzi and H. Schüepp. Advances in Life Sciences. Birkhäuser Verlag AG. Basel • Berlin • Boston, 1994, pp. 240, price $ 64.50. ISBN 3-7643-5000-8.

The book contains the contributions presented at the European COST ACTION 810 network Symposium held on 29 September – 2 October 1993 in Einsiedeln, Switzerland. The COST (Cooperation Scientifique et Technique) network was initiated by the Commission of European Union in 1971.

The most recent achievements in the studies on Mycorrhizas in the comprehensive review articles have been presented by the well known specialists.

Arbuscular Mycorrhizas play an important role in various ecosystems, in recycling of nutritive substances and in the maintenance of soil structure. In view of the fundamental significance of arbuscular Mycorrhizas in the key ecological processes, elucidation of the mechanisms of their symbiosis is essential for development of appropriate agricultural systems, as well as for elaboration of instructions for protection of natural ecosystems. The titles of seventeen chapters show how wide is the range of topics covered by the book. The successive chapters are entitled: Taxonomy and Phylogeny of the *Gomales* (S. Rosendahl *et al.*); Biodiversity and Characterization of Arbuscular Mycorrhizal Fungi at the Molecular Level (D. van Tuinen *et al.*); Characterization of Arbuscular Mycorrhizal Fungi by Immunochemical Methods (A. Hahn *et al.*); European Bank of *Gomales* — An Essential Tool for Efficient International and Interdisciplinary Collaboration (J. C. Dodd *et al.*); Physiological Characteristics of the Host Plant Promoting an Undisturbed Functioning of the Mycorrhizal Symbiosis (C. Azcon-Aguilar & B. Bago); Recognition and Infection Process, Basis for Host Specificity of Arbuscular Mycorrhizal Fungi (M. Giovanetti *et al.*); Ultrastructural Analysis Reveals the Complex Interactions between Root Cells and Arbuscular Mycorrhizal Fungi (P. Bonfante); Impact of Mycorrhizal Colonization on Root Architecture, Root Longevity and the Formation of Growth Regulators (D. Atkinson *et al.*); Biogeochemical Cycling and Arbuscular Mycorrhizas in a Sustainability of Plant-Soil Systems (M. Jeffries & J. M. Barea); Arbuscular Mycorrhizas and Agrosystem Stability (G. J. Bethlenfalvay & H. Schüepp); Hyphal Phosphorus Transfer, a Keystone to Mycorrhizal Enhancement of Plant Growth (I. Jakobsen *et al.*); Approaches to the Study of the Extraradical Mycelium of Arbuscular Mycorrhizal Fungi (J. C. Dodd); Water Relations and Alleviation of Drought Stress in Mycorrhizal Plants (M. Sanchez-Diaz & M. Honrubia); Impact of Arbuscular Mycorrhizal Fungi on Plant Uptake of Heavy Metals and Radionuclides from Soil (K. Haselwandter *et al.*); Biocontrol of Plant Pathogens Using Arbuscular Mycorrhizal Fungi (J. E. Hooker *et al.*); Management of Positive Interactions of Arbuscular Mycorrhizal Fungi with Essential Groups of Soil Microorganisms (G. Puppi *et al.*); Micropropagated Plants, an Opportunity to Positively Manage Mycorrhizal Activities (M. Vestberg & V. Estaun).

Much progress has been achieved in application of molecular methods in investigating arbuscular Mycorrhizas. Special attention should be paid to the advanced studies on biodiversity

of Mycorrhizas which explains their influence on ecosystems and national agriculture. Studies on the role of arbuscular Mycorrhizas in plant development and root morphology are also of high interest. Of essential importance are the reports concerning elucidation of the cellular and molecular mechanisms in the plant-fungus relation. Formation of the European Bank of Gomales is an important step which should promote cooperation between scientific centers and facilitate studies on arbuscular Mycorrhizas.

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