Maria L. Rudawska

CURRICULUM VITAE

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NATIONALITY: Polish

EDUCATION:
1967 High School
1967-1972 - University of Adam Mickiewicz, Poznań

QUALIFICATION:
1972 M.D. - University of Adam Mickiewicz, Poznań
1981 Ph.D. - University of Adam Mickiewicz, Poznań
1998 Assistant Professor - University of Mikołaj Kopernik, Toruń

POSTS HELD:
1972-1981 - Research Associate –Institute of Dendrology Polish Ac.of Sc.
1982-1985 – Assistant Professor - Institute of Dendrology Polish Ac.of Sc.
1985-1990 - Assistant Professor - Head of research on physiology of host-fungus relationship in mycorrhiza and pathogenesis - Institute of Dendrology Polish Ac. of Sc.
1990- 1998 - Assistant Professor - Head of Laboratory of Mycorrhizal Research Institute of Dendrology Polish Ac. of Sc.
1999- Associate Professor - Head of Physiology Department and Laboratory of Mycorrhizal Research - Institute of Dendrology Polish Ac. of Sc.
2000- Associate Professor - Head of Laboratory of Mycorrhizal Research Institute of Dendrology Polish Ac. of Sc.
2006- Professor - Head of Laboratory of Mycorrhizal Research Institute of Dendrology Polish Ac. of Sc.

EXPERIENCE:

Plant physiology: auxin and cytokinin determination in higher plants and mycorrhizal fungi, in vitro culture of mycorrhizal fungi, effect of nitrogen and phosphorus nutrition on mycorrhiza formation in pine trees, enzymes of nitrogen metabolism of mycorrhizal fungi,

Forest and soil ecology: some physiological aspects of protective role of mycorrhizas against some pathogens mycorrhizas and mycorrhizal fungi in the condition of environmental pollution, artificial mycorrhizal inoculation, mycorrhizal development in forest nurseries, molecular methods (PCR-RFLP, sequencing) in determination of mycorrhizal fungi and mycorrhizas, structure population studies of ectomycorrhizal fungi and ectomycorrhizas in natural forests and plantations.

SPECIAL TRAINING:

1. Institute of Experimental Botany Czechoslovak Academy of Sciences, Prague, Czechoslovakia-1974
2. Institute of Experimental Botany Czechoslovak Academy of Sciences, Prague, Czechoslovakia - 1980
3. Institute of Landscape Ecology Pruhonice near Prague, Czechoslovakia -1982
4. Government Research Station of Phytopathology, Merelbeke near Ghent, Belgium 1983- 4 months
5. Universite Claude-Bernard, Lyon 1, Unite d'Ecologie Microbienne du Sol, Eqiupe Symbiose Mycorhizienne, Villeurbanne, France,1987/1988- 6 months
6. Finish Forest Research Institute, Helsinki, Finland,1991
7. Swedish University of Agricultural Sciences-Department of Forest Mycology and Pathology, Uppsala, Sweden,1992
8. Universite Claude-Bernard, Lyon 1, Unite d'Ecologie Microbienne du Sol, Eqiupe Symbiose Mycorhizienne, Villeurbanne, France,1993/1994- 6 months
9. University of Helsinki, Department of General Microbiology, Helsinki, Finland
   University of Kuopio, Department of Environmental Sciences, Kuopio, Finland
10. Swedish University of Agricultural Sciences-Department of Forest Mycology and Pathology, Uppsala, Sweden,1998
11. INRA-Flore Pathogene, Dijon, France, 2000
12. Slovenian Forestry Institute, Ljubljana, Slovenia, 2000

PARTICIPATION IN INTERNATIONAL CONFERENCES

Canada	Quebec 1981	5th North American Conference on Mycorrhizae
France	Dijon 1985	1st European Symposium on Mycorrhizae
Bulgaria	Pamporovo1986	IV International Symp. on Plant Growth Regulators
Czechoslovakia	Prague1988	2nd European Symposium on Mycorrhizae
United Kingdom	Sheffield 1991	3rd European Symposium on Mycorrhizas
Spain	Granada 1994	4th European Symposium on Mycorrhizas
Germany	Dresden 1992	15th International Meeting for Specialists in Air Pollution-Effects on Forest Ecosystems
Sweden	Göteborg, 1995	5th International Conference on Acid Deposition
Italy	Florence 1996	17th International Meeting for Specialists in Air Pollution-Effects on Forest Ecosystems
Belgium	Gent 1996	International Symposium on Crop Protection
Sweden	Uppsala 1998	Second International Conference on Mycorrhiza
France	Bordeaux 1998	The Supporting roots-structure and function
Spain	Barcelona-Cabrils 1999	Seminar on Ecophysiology of the mycorrhizal symbiosis in woody plants.
Spain	Alcala de Henares 1999	XIII Congress of European Mycologists
Poland	Sopot 2000	III Conference on Trace Metals-Effects on Organisms and Environment
Australia	Adelaide, 2001	Third International Conference on Mycorrhiza
Norway	Oslo, 2002	The 7th International Mycological Congress
Canada	Montreal, 2003	Fourth International Conference on Mycorrhiza
Ukraina	Jałta-Krym, 2003	XIV Congress of European Mycologists
Estonia	Tartu 2005	Woody root processes-impact of different tree species Cost: E38:Woody root processes
Austria	Vienna 2005	International Botanical Congress
Israel	Sede Boqer 2006	Cost: E38:Woody root processes: revealing the hidden half,
Czech Republic	Praha 2006	Use of chemical amelioration in the forestry-conference.
France	Bordeaux-Pessac 2006	Kick-off Meeting, Evoltree Network of Excellence.
Spain	Grenada 2006	5th International Conference on Mycorrhiza, Mycorrhiza for Science and Society.
Finland	Rovaniemi 2006	Cost: E38:Woody root processes: Roots, mycorrhizas and their external mycelia in carbon dynamics in forest soil.
Germany	Marburg 2006	Philips University of Marburg , Evoltree Meeting Community structure and dynamics.
Czech Republic	Praha-Pruhonice 2007	Cost: E38:Woody root processes: Workshop for paper preparation

FELLOWSHIPS

1983 June-October – Fellowship of Ministry of Agriculture of Belgium
1987-1988 – Fellowship Centre National de Resecherche Scientific de France,
1993-1994 – Fellowship Eurosylva –European Union of Forest Research (France)

RESEARCH GRANTS

1992 – "**Structure and function of the tree root systems in the polluted environment",**
founded by Foundation in Aid of Natural Sciences; Head of the project and head of the subject "Mycorrhiza as an indicator of stress".

1992 - 1995 – **"Effect of pH and aluminum on mycorrhizal fungi and ectomycorrhiza development of Scots pine in laboratory condition",**
founded by State Committee for Scientific Research – KBN; Head of the project.

1995-1997 – **"Mycorrhizas and growth of trees in the areas influenced by industrial pollution"**,
founded State Committee for Scientific Research; Principal investigator.

1998 – 2001 – **"Effect of resistant and sensitive to aluminum strains of mycorrhizal fungi on growth of Scots pine seedlings and extramatrical mycelium development in the condition of low pH and increased aluminum availability"**
founded State Committee for Scientific Research; Head of the project.

1998 - 2000 – **"Nationwide program of artificial mycorrhization of tree seedlings for the purposes of afforestation",**
founded by National Found of Environment Protection and Water Management; Head of the project.

2000-2003 **– "Mycorrhizal community structure of Scots pine trees influenced by emissions from aluminum smelter",**
founded by State Committee for Scientific Research; Principal investigator.

2001-2003 **–"Biodiversity of ectomycorrhizal fungi and ectomycorrhizas in mature Norway spruce stands to different degree influenced by environmental pollution",**
founded by State Committee for Scientific Research; Principal investigator.

2001-2003 – **"Mycorrhizal community structure of Scots pine trees influenced by environmental pollution"**,
founded by State Committee for Scientific Research; Head of the project.

2002-2004 – "**Mycorrhizal community structure of Norway spruce seedlings from bare-root forest nurseries and in the control condition",**
founded by State Committee for Scientific Research; Head of the project.

2003–2006 **–"Mechanisms determining the diversity of understory plant and soil community organisms and their links to ecosystem function in mesocosms of 14 tree species",**
Project ordered and founded by State Committee for Scientific Research, Head of the subject in the project.

2004-2006 - **"Mycorrhizal community structure of European Larch seedlings from bare-root forest nurseries",**
founded by State Committee for Scientific Research; Principal investigator.

2005-2007 - **"Mycorrhizal community structure of Scots pine trees in different stages of development-verification of succession hypothesis",**
founded by State Committee for Scientific Research; Head of the project.

2007-2009 – **"Identification of selected mycorrhizas of 12 forest trees using advanced molecular methods",**
founded by Department of Science and Higher Education; Head of the project.

2007-2010 – "**The mycorrhizal community structure of European larch in two mountain stands in Poland",**
founded by Department of Science and Higher Education; Head of the project.

2007-2009 - **Tree community genetics – Understanding the impact of host genotypes on the diversity of associated mycorrhiza and insects (COMMUNI-TREE)** EU project, Investigator

SUPERVISION OF RESEARCH AND DISSERTATION COMMITTEES:

Postdoctoral researchers

1. Marta Aleksandrowicz, 2002, currently Professor, Warsaw Agriculture University, Faculty of Phytopathology (member of dissertation committee)
2. Hanna Stępniewska, 2006, currently Assistant Professor, Hugo Kołłątaj Agricultural University of Krakow, Faculty of Forestry, (member of dissertation committee)

Graduate students

1. Tomasz Leski, 2000-2003, PhD, currently Scientist, Institute of Dendrology (Kórnik), Dep. of Mycorrhizal Research, (supervisor)
2. Dorota Hilszczańska, 2001, PhD, currently Scientist, Forest Research Institute (Warsaw), Dep. of Forest Phytopathology (member of dissertation committee)
3. Kazimierz Szabla, 2004, PhD, currently Head of the District Board of State Forests in Katowice (member of dissertation committee)
4. Violetta Wrótniak, 2005, PhD, currently Scientist, University of Mikołaj Kopernik (Toruń), Dep. of Microbiology (member of dissertation committee)
5. Przemysław Ryszka 2006, PhD, currently Scientist, Jagielonian University in Krakow, Department of Ecological Microbiology Institute of Environmental Sciences, (member of dissertation committee)
6. Michał Iwański, 2003- , MS, currently PhD student, Institute of Dendrology (Kórnik), Dep. of Mycorrhizal Research (supervisor of MS and PhD thesis)
7. Lidia Trocha, 2004- , MS, Institute of Dendrology (Kórnik), currently PhD student, Institute of Dendrology (Kórnik), Dep. of Mycorrhizal Research (supervisor of PhD thesis)
8. Magdalena Jurgońska MS (supervisor of MS thesis)
9. Izabela Lewandowska MS (supervisor of MS thesis)
10. Karolina Ośka MS (supervisor of MS thesis)
11. Magdalena Lisiecka MS (supervisor of MS thesis)
12. Jacek Jaszczyński MS (supervisor of MS thesis)
13. Justyna Panek MS (supervisor of MS thesis)

Undergraduate students
1. Jan Haas, 2003, (supervisor)
2. Marzena Wojciechowska, 2004, (supervisor)

MEMBERSHIP IN SCIENTIFIC ORGANIZATION
1. IUFRO - Officeholder in section: Root physiology and symbiosis (Unit 2.01.13)
2. Polish Botanical Society
   Section of Mycology
   Section of Physiology and Biochemistry
3. Federation of European Society of Plant Physiologists
4. British Mycological Society

THE MOST RELEVANT PAPERS 1992-2007:

Rudawska, M., Bernillon, J., Gay G. 1992. Indole compounds released by the ect-endomycorrhizal fungal strain MrgX isolated from pine nursery. Mycorrhiza 2:17-23

Rudawska, M., Kieliszewska-Rokicka, B., Debaud, J-C., Lewandowski A.,Gay, G. 1994. Enzymes of ammonium metabolism in ectendomycorrhizal and ectomycorrhizal symbionts of pine. Physiologia Plantarum 92:279-285

Rudawska, M., Gay G. 1995. Effect of an IAA overproducer mutant of the fungus *Hebeloma cylindrosporum* Romagnesi on the early stages of ectomycorrhizal infection and carbohydrate content in seedlings of *Pinus pinaster* (Ait.) Sol. Acta Soc. Bot. Pol. 64 (3):255-264

Rudawska M., Kieliszewska-Rokicka B., T.Leski, J.Oleksyn 1995. Mycorrhizal status of a Scots pine (*Pinus sylvestris* L.) plantation affected by pollution from a phosphate fertilizer plant. Water, Air and Soil Pollution 85: 1281-1286

Leski T., **Rudawska M.**, Kieliszewska-Rokicka B. 1995. Intraspecific aluminium response in *Suillus luteus* (L.) S.F. Gray., an ectomycorrhizal symbiont of Scots pine. Acta Soc. Bot. Pol. 64 (1) 97-105 11.

Rudawska, M., Kieliszewska-Rokicka, B., 1997. Mycorrhizal formation by *Paxillus involutus* (Batch.) Fr. strains in relation to their IAA-synthesizing activity. New Phytologist 137:509-517.

Kieliszewska-Rokicka B., **Rudawska M.**, Leski T., Kurczyńska E.U. 1998. Effect of low pH and aluminium on growth of *Pinus sylvestris* L. seedlings mycorrhizal with Sui*llus luteus* (L. ex Fr.) S.F. Gray Chemosphere: 36 (4-5)751-756

Kieliszewska-Rokicka B., **Rudawska M**., Leski T., 1998. Ectomycorrhizae of young and mature Scots pine trees in industrial regions in Poland. Environmental Pollution: 98:315-324.

Rudawska M., Leski T., 1998 Aluminium tolerance of different *Paxillus involutus* Fr. strains originating from polluted and non polluted sites. Acta Soc.Bot.Pol, 67/1:115-122

Rudawska M., 1998. Studies on the factors regulating mycorrhizal symbiosis of pine seedlings. (Thesis to qualify as an assistant professor); ISBN 83-87350-03-6, Grafika Publ. pp..55,

Rudawska M. 2000. Ectomycorrhiza- its significance and applications to forestry), (in polish), Kórnik-Poznań 2000, ISBN 83-87350-10-9, pp. 1-102

Rudawska M. , Kieliszewska-Rokicka B., Leski T., 2000. Effect of aluminum on *Pinus sylvestris* seedlings mycorrhizal with aluminum-tolerant and aluminum-sensitive strains of *Suillus luteus*. Dendrobiology 45:89-96.

Rudawska M., Kieliszewska-Rokicka B., Leski T., Staszewski T., Kubiesa P. 2003. Mycorrhizal community structure of Scots pine trees influenced by emissions from aluminum smelter. W: Karnosky, D.F., Percy, K.E., Chappelka, A.H., Simpson, C.J. and Pikkarainen (Eds.) Air Pollution, Global Change and Forest in the New Millennium. Elsevier Science Ltd. Oxford, UK.p.329-344.

Rudawska M., Leski T., 2005. Macro- and microelement contents in fruiting bodies of wild mushrooms from the Notecka forest in west-central Poland. Food Chemistry 92: 499–506.

Rudawska M., Leski T., 2005. Trace elements in fruiting bodies of ectomycorrhizal fungi growing in Scots pine (*Pinus sylvestris* L.) stands in Poland. Science of the Total Environment: 339:103-115.

Iwański M., **Rudawska M**., Leski T., 2006. Mycorrhizal associations of nursery grown Scots pine (*Pinus sylvestris* L.) seedlings in Poland. Ann. For. Sci. 63: 715–723

Trocha L.K., **Rudawska M**., Leski T., Dabert M. 2006. Genetic diversity of naturally established ectomycorrhizal fungi on Norway spruce seedlings under nursery conditions. Microbial Ecology: 52, 418–425

Rudawska M., Leski T., Trocha L.K., Gornowicz R. 2006. Ectomycorrhizal status of Norway spruce seedlings from bare-root forest nurseries. Forest Ecol. Management: 236: 375–384

Trocha Lidia K., Oleksyn J., Turzanska E., **Rudawska M.,** Reich P.B. 2007. Living on the edge: Ecology of an incipient *Betula*-fungal community growing on brick walls. Trees: 21:239–247

Rudawska M. 2007. Mycorrhiza. In: Biology and Ecology of Norway spruce, Eds: M.G. Tjoelker, A. Boratyński, W.Bugała, Sprnger, Forest Sciences 78:157-182.

Iwański. M., **Rudawska M**. 2007. Ectomycorrhizal colonization of naturally regenerating *Pinus sylvestris* L. seedlings growing in different micro-habitats in boreal forest. Mycorrhiza (DOI 10.1007/s00572-007-0132-7, in print)

Aučina A., **Rudawska M**., Leski T., Skridaila A., Riepšas E., Iwanski M. 2007. Ectomycorrhizal colonization of *Pinus sylvestris* seedlings growing in nursery soil with forest litter amendment. Applied and Environmental Microbiology (AEM00584-07 Version 2, in print)

Cudlin P., Kieliszewska-Rokicka B, **Rudawska M.**, Grebenc T., Alberton O., Lehto T., Bakker M. R., Børja I., Konôpka B., Leski T., Kraigher H, Kuyper T. W. 2007. Fine roots and ectomycorrhizas as indicators of environmental change. Plant Biosystems. (in print).

Totally more than 60 papers in reviewed journals in english and monographs in polish concerning mycorrhizas of *Pinus sylvestris*, *Fagus sylvatica, Carpinus betulus*, *Fraxinus excelsior and Picea abies*, *Quercus* sp; chapter about mycorrhiza in handbook of Forest Botany and several papers popularizing subject of mycorrhiza.