Curriculum Vitae

Katarzyna Turnau

Date of birth: 03 November 1954

Citizenship: Polish

Current address:

Institute of Environmental Sciences

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Appointments:

2005-present: Professor, Institute of Environmental Sciences, Jagiellonian University, Cracow, Poland

2000-2005: Professor, Institute of Botany, Jagiellonian University, Cracow, Poland.

1982-2000: Assistant, Institute of Botany, Jagiellonian University, Cracow, Poland.

1977-1982: PhD student at the Jagiellonian University

International fellowships:

May 1998 – Fellowship of French Ministry in Nancy (France)1994 - research visits in France financed by Eurosilva (Eureka) and ECC project (1 month)

1992 The fellowship in Nancy (France) due to funds obtained from french Ministry of Science and Technology (3 month)

1990/91 Alexander von Humboldt Fellowship in Tubingen, Germany

Education/degrees:

2000 Professor (Jagiellonian University)

1991 Habilitation (Jagiellonian University)

1982 PhD (Jagiellonian University)

1977 MSc (hons) (Jagiellonian University)

Grants and Funding:

EC Projects:

11997-1999 - EC project FAIR3-PL96 1377 (METOLEF) on Metal tolerant ectomycorrhizal fungi: selection, characterization and utilization for restoration of polluted forests.

1998-2001 –EC project on "Legume associations with soil microbes: biological solutions for restoring fertility of heavy metal polluted soils in sustainable agroecosystems – INCO-Copernicus – in cooperation with France, Germany, Sweden and Russia

2000-2002 – EC project under 5th Framework Programme (Cell Factory) on "The use of mycorrhizal fungi in phytoremediation projects"

2002-2004 - EC project GENOMYCA under 5th Framework Programme – "Genes and genetic engineering for arbuscular mycorrhiza technology and application in sustainable agriculture"

2006-2009 - MYCOREMED - Role of arbuscular mycorrhizal fungi on the accumulation of radiocaesium by plants– projekt typu Host fellowships for Early Stage Research Training (EST); contract number MEST-CT-2005-02387

2003/2005 NATO project – cooperation Canada/Poland on: "Chemical analysis of interactions between plant and fungus inside the root and in the rhizosphere"

2009-2011 UMBRELLA EU project on phytoremediation of industrial wastes (7PR)

AND almost 20 projects financed by Polish Ministry of Science

Honors and awards:

1984, 2008 Award of the Rector of the Jagiellonian University for scientific achievements and teaching

2004- present Membership of the Polish Academy of Sciences

2011- Award of the Rector of the Jagiellonian University for scientific achievements

Editorial Boards

Mycorrhiza 2007-present

Phytochemistry 2007-2010

Dendrology 2000 - present

Acta Societatis Botanicorum Poloniae 2000-2010

Teaching:

Lecturing

1995 - 2004 Taxonomy of fungi and algae (year 1), 30 or 15h lectures/year, Jagiellonian University, Institute of Botany

2004 – present. Microbiology (year 4), 30h lectures/year, Jagiellonian University, INOŚ

1996 - present. Ecology of Fungi (year 2-5), 30 h/year, Jagiellonian University

1996 – present Ecology of Mycorrhiza (year 2-5), 30 h/year, Jagiellonian University

2000-present Biomonitoring (year 1-5) 30 hours, Jagiellonian University, INOŚ

Seminars

2000-present. student seminar (4-5 year), 60h/year, Jagiellonian University

Practicals

1982-1998 Plant and fungal taxonomy

Supervision of students:

1) PhD students: 5 completed, 2 undergoing
2) MSc students: >23 completed, 8 undergoing

Publications of the last 5 years:

Zubek S., Turnau K., Tsimilli-Michael M., Strasser R.J. 2009. Response of endangered plant species to inoculation with arbuscular mycorrhizal fungi and soil bacteria. *Mycorrhiza*. 19(2): 113-123.

Zubek S., Błaszkowski J., Delimat A., Turnau K. 2009. Arbuscular Mycorrhizal and Dark Septate Endophyte Colonization along Altitudinal Gradients in the Tatra Mountains. *Arctic, Antarctic, and Alpine Research* 41(2):272-279.

Turnau K., Henriques F. S., Wołowski K. 2009. Differences in metal distribution and concentration in algal species living in a highly acidic, metal-rich pond of a pyrite mine in Portugal. *Acta Protozoologica* 48(4): 341-345.

Bothe H., Turnau K., Regvar M. 2010. The potential role of arbuscular mycorrhizal fungi in protecting endangered plants and habitats. *Mycorrhiza* **20:** 445-457.

Dubchak S., Ogar A., Mietelski J. W., Turnau K. 2010. Influence of silver and titanium nanoparticles on arbuscular mycorrhiza colonization and accumulation of radiocaesium in Helianthus annuus. *Spanish Journal of Agricultural Research* **8 (S1):** 103-108.

Jurkiewicz A., Ryszka P., Anielska T., Waligórski P., Białońska D., Góralska K., Tsimilli-Michael M., Turnau K. 2010. Optimization of culture conditions of Arnica montana L.: effects of mycorrhizal fungi and competing plants. *Mycorrhiza* **20:** 293-306.

Ryszka P., Błaszkowski J., Jurkiewicz A., Turnau K. 2010. Arbuscular mycorrhiza of Arnica montana under field conditions - conventional and molecular studies. *Mycorrhiza* **20:** 551-557.

Stojakowska A., Malarz J., Zubek S., Turnau K., Kisiel W. 2010. Terpenoids and phenolics from Inula ensifolia. *Biochemical Systematics and Ecology* **38:** 232-235.

Turnau K., Ostachowicz B., Wojtczak G., Anielska T., Sobczyk Ł. 2010. Metal uptake by xerothermic plants introduced in to Zn-Pb industrial wastes. *Plant and Soil* **337:** 299-311.

Zubek S., Stojakowska A., Anielska T., Turnau K. 2010. Arbuscular mycorrhizal fungi alter thymol derivative contents of Inula ensifolia L. *Mycorrhiza* **20:** 497-504.

Janik P., Tylko G., Ostachowicz B.,Turnau K. 2010 Elemental composition of *Physarum compressum* Alb. et Schw. sporocarps and their structures cultivated on rabbit dung and agar substrates. Microsc Res Tech **73**(12):1134-42.

Zubek S., Mielcarek S., Turnau K. 2011. Hypericin and pseudohypericin concentrations of a valuable medicinal plant *Hypericum perforatum* L. are enhanced by arbuscular mycorrhizal fungi. *Mycorrhiza* 22:149–156.

Orłowska E., Przybyłowicz W., Orlowski D., Turnau K., Mesjasz-Przybyłowicz J. 2011. The effect of mycorrhiza on the growth and elemental composition of Ni-hyperaccumulating plant *Berkheya coddii* Roessler. *Environmental Pollution* 159:3730-3738.

Kaczor A., Turnau K., Baranska M. 2011. *In situ* Raman imaging of astaxanthin in a single microalgal cell. *Analyst* 136:1109-1112.

Orłowska E., Orłowski D. Mesjasz-Przybyłowicz J., Turnau K. 2011. Role of mycorrhizal colonization in plant establishment on an alkaline gold mine tailing. *International Journal of Phytoremediation* 13:185–205.

Wróbel-Kwiatkowska M., Turnau, K., Góralska K., Anielska T., Szopa J. 2012. Effects of genetic modifications to flax (*Linum usitatissimum*) on arbuscular mycorrhiza and plant performance. *Mycorrhiza* 22:493-499.

Zubek S., Błaszkowski J., Delimat A., Turnau K. 2009. Arbuscular Mycorrhizal and Dark Septate Endophyte Colonization along Altitudinal Gradients in the Tatra Mountains. *Arctic, Antarctic, and Alpine Research* 41(2):272-279.

Orłowska E., Godzik B., Turnau K. 2012. Effect of different arbuscular mycorrhizal fungal isolates on growth and arsenic accumulation in *Plantago lanceolata* L. *Environmental Pollution* 168:121-130.

Zubek S., Mielcarek S., Turnau K. 2012. Hypericin and pseudohypericin concentrations of a valuable medicinal plant *Hypericum perforatum* L. are enhanced by arbuscular mycorrhizal fungi. *Mycorrhiza* 22:149-156.

Turnau K., Gawroński S, Ryszka P, Zook D. 2012. Mycorrhizal-Based Phytostabilization of Zn–Pb Tailings: Lessons from the Trzebionka Mining Works (Southern Poland). In: Kothe E., Varma A. (eds.) Bio-Geo Interactions in Metal-Contaminated Soils. Soil Biology 31. Springer, Berlin, 327-348.

Podda F., Medas D., De Giudici G., Ryszka P., Wolowski K., Turnau K. 2013. Zn biomineralization processes and microbial biofilm in a metal-rich stream (Naracauli, Sardinia). *Env Sci Pollut Res* DOI: 10.1007/s11356-013-1987-0

Turnau,K., Przybyłowicz W.J., Ryszka P., Orłowska E., Anielska T., Mesjasz-Przybyłowicz J. 2013. Mycorrhizal fungi modify element distribution in gametophytes and

sporophytes of a fern *Pellaea viridis* from metaliferous soils. *Chemosphere* 92:1267-1273

Orłowska E., Przybyłowicz W., Orlowski D., Mongwaketsi N. P., Turnau K., Mesjasz-Przybyłowicz J. 2013. Mycorrhizal colonization affects the elemental distribution in roots of Ni-hyperaccumulator *Berkheya coddii* Rorssler. *Environmental Pollution* **175:** 100-109.

Book chapters

Turnau K., Stengl-Rejthar A., Czerwonka M. 1988. Nonvascular plants - student's handbook (in Polish)

Turnau K., Ryszka P., Stengl A. 2002. Zwiazki mikoryzowe traw. (W:) Polska Ksiega Traw. L. Frey (red.), PAN, Kraków, pp. 325-354.

Turnau, K.; Gawroński, S.; Zubek, Sz.; Anielska, T.; Jurkiewicz, A. Joined spread of soil microbes and commercially re-established endangered plants in Europe. *BCPC Symposium Proceedings* **81**: 203-208 (2005).

Turnau, K.; Kottke, I. Fungal activity as determined by micro-scale methods with special emphasis on interactions with heavy metals. *In: J. Dighton, J. F. White, P. Oudemans (eds.), The Fungal community, CRC Press* : 287-305 (2005).

Beat, F.; Turnau, K. Elemental analysis of roots and fungi. *In: A. J. Luster, R. Finlay (eds.), Handbook of methods used in rhizosphere research, Swiss Federal Research Institute WSL, Birmensdorf* : 30-37 (2006).

Turnau, K.; Jurkiewicz, A.; Lingua, J. M.; Barea, J. M.; Gianinazzi-Pearson, V. Role of arbuscular mycorrhiza and associated microorganisms in phytoremediation of heavy metal polluted sites. *In: M. N. V. Prasad, K. S. Sajwan, R. Naidu (eds), Trace elements in the environment: biogeochemistry, biotechnology, and bioremediation, CRC Press* : 235-252 (2006).

Turnau, K.; Orłowska, E.; Ryszka, P.; Zubek, Sz.; Anielska, T.; Gawroński, S.; Jurkiewicz, A. Role of mycorrhizal fungi in phytoremediation and toxicity monitoring of heavy metal rich industrial wastes in southern Poland. *In: I. Twardowska, H. E. Allen, M. M. Häggblom, Soil and water pollution monitoring, protection and remediation, Springer* : 533-551 (2006).

Turnau K., Ryszka P., Wojtczak G. (2010) Metal Tolerant Mycorrhizal Plants: A Review from the Perspective on Industrial Waste in Temperate Region. *In: Koltai H., Kapulnik Y. (eds.) Arbuscular Mycorrhizas: Physiology and Function, Springer Science+Business Media B.V.* **:** 257-276.

Bothe H., Regvar M., Turnau K. (2010) Arbuscular Mycorrhiza, Heavy Metal, and Salt Tolerance. *In: Sherameti I., Varma A.(eds.) Soil Biology. Soil Heavy Metals* **19:** 87-111.

Turnau K. 2011. Role of Arbuscular Mycorrhizal Fungi in Restoration of Mine Tailings. In: Greipsson S. (ed) Restoration Ecology. Jones and Bartlett Learning 8.2: 201-205.