M. ALI KHALVATI, PH. D.

PROFILE

Dr. Khalvati has spent his career on environmentally sustainable land use and remediation of contaminated soils, enviro-agronomic practices and land resource management. He has worked with academic, industry and landowner/government leadership.

He is an expert in land resource (soils) information, soil microbiology, wildlife botany and current agricultural land use and management practices and their relationship to environmental issues. His work includes assessments of the impacts of applied microbiology in degradation of polluted soils, nutrients, organic materials and greenhouse gas emissions.

Currently, Dr. Khalvati is a visiting scientist in the Turkish-American University (Bosphorous University) in Istanbul where, in addition to teaching, he is leading a project involving the bioremediation of mining activities and rehabilitation of contaminated lands caused by mine tailings and also a separate project: bio-recovery of the earth rare metals from electronical waste (e-waste). In this research two contaminated sites have been selected such as an abandoned mine in the central Anatolia region and a landfill site in Istanbul, Turkey. This project has been funded by The Scientific and Technological Research Council of Turkey (TUBITAK) since January 2015. (2015-2016)

Dr. Khalvati obtained his PhD at the Technical University of Munich and post-doctoral experience at the German Research Center for Environmental Heath. His supervisor, Professor Dr. Peter Schroeder is a world class phytoremediation scientist. (2002-2010) Dr. Khalvati worked with him on the following projects:

- Germany - Recovery of degraded land by restoration of exposed soils. A European collaborative research project with 8 members states including Germany. This study aimed to assist in harmonizing the methodologies for identification of specific soil degradation status and plan awareness training for contractors, field crews and equipment monitors.
- Southern Europe - Mitigation of desertification potential in arid soils of Southern Europe. To plan and implement projects related to industrial, open pit mines, and landfilled waste areas using phyto-remediation, myco-bioremediation and fast track species techniques to remove pollutants.
- East Europe - Using microsymbiont glomalin to understand and alleviate the environmental stress response on natural East European grasslands in the context of global climate change conditions global change conditions: to perform soil erosion control methods by providing soil glomaline to aggregate soil particles, using beneficial fungus against soil erosion
- Ghana, West Africa - Microbial diversity as a phytoremediation technology for the treatment of contaminated sites in Ghana. To identify environmental concerns, optimize and lower costs.

In 2010, he volunteered with the Algonquin Woodland Métis Anishinabek Tribe in Northern Ontario to put long term environmental sustainability in the hands of the community itself. This experience included extensive work with local farmers and youth. He lived in Minden-Haliburton County and organized workshops in modern environment microbiology studies, research systems and soil erosion. (2010-2011)

As the head of the Energy and Environmental Health section at AMA Holding Corp in Toronto, Ontario (Canada), Ali developed a framework for international and national networks integrating the academic world, and aboriginal forest and agricultural researchers, and development. (2011-2013)

Dr. Khalvati has led research projects in land use, management and environmental sustainability between Queens' University (Kingston, Ontario, Canada) and a mining company to address soil contaminated with mine tailings on gold mine tailings in Ghana. He has followed up this research with Turkey's Bogazici University to remediate mine sites in southern Turkey. (2013-2014)

He also worked as a research associate in the Department of Biology at Queen's University in Kingston, Ontario. (2013-2014) His research included:

- Terrestrial ecology,
- Ecophysiology,
- Environmental toxicology, and
- Myco-remediation of contaminated soil and wastewater.

While at Queen's Department of Biology, he was the principal applicant and co-applicant of several successful NSERC grants and International Grants (Canadian-African Research Exchange Grant, CAREG), as well as industrial grants in the field of bioremediation. These funds are currently subsidizing attempts to identify soil microbe's genomes and apply indigenous soil microorganism to re-vegetate abandoned and highly contaminated mine sites in central Ontario. This project is tremendously important for Ontario's Ministry of Northern Development and Mines. (2013-2014)

One of the NSERC projects included working with McIntosh Perry Consulting Engineers Ltd., a Kingston-based company where he conducted extensive soil and plant sampling at the Kam Kotia mine site (Ontario). The team also tested the growth and potential for recovery of native plants using their commercial forms. Results indicate that several beneficial soil microorganisms are able to exist despite the harsh acidic soil conditions bringing considerable hope for biological re-vegetation for this site. (2013-2014)

M. ALI KHALVATI, PH. D.

EDUCATION

Doctor of Philosophy in Natural Science, Technical University of Munich, Germany 2001-2005

Master of Sciences in Applied Sciences, EGE University, Izmir, Republic of Turkey 1998-2001

Bachelor of Science in Agricultural Engineering, Azad University of Tabriz, Iran 1990-1994

PROFESSIONAL HISTORY

VISITING SCIENTIST

Institute of Environmental Science, Bogazici (Bosphorous) University, Istanbul, Turkey 2015

Leading Projects

- TUBITAK, The Scientific and Technological Research Council of Turkey Grant Bioremediation (Plant-Microbe Interactions) Technology for Bioleaching Heavy Metals Contamination of Surface. Soil in Industrial Area.

- BAP- Bogazici University`s Scientific Fund
  Evaluation of Phyto-remediation Technology for Bioleaching and Recovery of Metals and Rare Earth Materials from Waste of Electrical and Electronic Equipment.

RESEARCH ASSOCIATE

Department of Biology, Queen`s University, Kingston, Ontario, CAN 2013-2014

Projects

1. Application of myco-bioremediation technology to improve native plants, rhizosphere, and possible re- vegetation of Kamkotia Abandoned Mine Tailings, Timmins Ontario, Canada (NSERC grant)
2. Facilitating Aseptic Mass Production and Sporulation of Soil Microorganisms to Detoxify Soil Contamination (NSERC grant)
3. Promoting applied knowledge and management of Bio-Phytoremediation as a new biotechnology tool to alleviate environmental stress of West African mine tailings (Canada-Africa Researchers Exchange Grant)

Project Consultant and Environmental Specialist, Toronto, ON, CAN 2011-2013
AMA Holding Corp. Green Energy and Environmental Health Division

1. De-mining, soil degradation prevention. Agricultural soil improvement of the Republic of Turkey-Syria border
2. Ontario contamination sites monitoring, Minden Haliburton County

Research Associate, Minden, ON, CAN 2010-2011
MISI-ATIM Corporation, Aaniish Resources,
Environmental and economic sustainably of an Ontario First Nations community

Environmental Scientist / Project Manager, Munich, Germany 2006-2010
German Research Center for Environmental Health

1. Recovery of degraded land by restoration of exposed soils to organic pollutions
2. Mitigation of desertification potentials in arid soils of Southern Europe and West Africa
3. Microsymbiont glomalin. A new tool to understand and alleviate environmental stress response on natural of East European grassland among global warming conditions.

CITIZENSHIP - Canadian

LANGUAGES - English, German, Turkish, Farsi, Azarbayjanian