



Current MITHE-SN Projects Metadata

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Chemical forms and release of trace elements in soils and soil solutions (Soils + Plants)

Objectives being Investigated

We will focus our efforts on i) modelling metal competition for sorption on soil surfaces focusing on acquiring and using free metal speciation data, ii) we will acquire soil solution chemistry data for field-collected soils contaminated with As and Se and evaluate the relationships among the various physicochemical parameters, iii) we will work in collaboration with another MITHE project to further expand the links amongst the chemical speciation of Cd and Zn in soils contaminated with metals from chemical fertilizer and long-term manure applications.

Study/Sampling Design

Collection of field contaminated soils combined with the spiking of selected soils to obtain a range of controlled and realistically metal contaminated soils. Determine the chemical speciation of trace elements and evaluate the links between chemical speciation and soil properties. Undertake specific laboratory experiments to improve our mechanistic understanding of some detailed sorption or bioaccessibility aspects.

Number of projects providing material for study: 0

Location of Field Site(s)

Deloro, Ontario (44° 30' N, 77° 37' W)

Sudbury, Ontario (46° 37' N, 80° 48' W; 46° 35' N, 80° 49' W; 46° 35' N, 80°51' W; 46° 36' N, 80° 50' W; 46° 32' N, 81° 05' W)

Montreal, Québec (45° 33' N, 73° 34' W)

La Sarre, Québec (49° 00' N, 79° 09' W)

Human Studies

Outcome or Process Studied

--- none provided ---

Exposure Medium, and Metals/Substances Quantified

--- none provided ---

Biological Endpoint(s) Monitored

--- none provided ---

Biota Studied

Species

Wheat, forage

Metals, etc. Quantified

Cu, Cd, Cr, Pb, Zn, As and Se

Biological Endpoint(s)

--- none provided ---

Physical Material(s) Studied

Medium/Media

Soils, manure, fertilizers

Metals, etc. Quantified

Cu, Cd, Cr, Pb, Zn, As and Se

Bibliographic References on-file with Secretariat: No

Data Available: No

Data Archived with MITHE-SN: No

Collaborators

Dr. William Hendershot (Co-Inv.) – Natural Resource Science, McGill University

Alexander Neaman (Co-Inv.) –

Dirk Wallschlaeger (Co-Inv.) –

Metals in the Human Environment Strategic Network

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