



FROM THE DESK OF RATTAN LAL
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Medical Pedology: An Emerging Discipline in Soil Science

Fellow Soil Scientists,

Medical Pedology should be an important component of soil science curricula. Properties and processes of the pedosphere; in close interaction with those of the hydrosphere, atmosphere and the biosphere; strongly impact human health and wellbeing. Several macronutrients (N, P, K, Ca, Mg) and micronutrients (I, Fe, Zn, Cu, Mo, Mn, Se) are obtained by human through soil via plant and animal-based food. Contrarily, toxicity of some elements (Pb, As, Hg, Cr) can cause serious health hazards. Most of these minerals are derived from weathering of the parent rock, but are also added through aeolian and alluvial deposition, urban and industrial contaminants such as the radioactive wastes. Similar to the effects of nutrients, human health is also strongly impacted by soil-borne pathogens. Most antibiotics taken by human and livestock are derived from microorganisms in soils, Yet, application of antibiotics-laden manure can contaminate soil, water and air. While geophagy, practiced since the dawn of humanity, can alleviate deficiency of some elements, it may aggravate risks of diseases via soil-borne pathogens. Effects of soil on human health are strongly moderated by interaction between soil, air, water, and biota (plants, animals). Therefore, soil scientists must work closely with human and animal health specialists in developing research, teaching, and extension (outreach) programs in the new and emerging field of “Medical Pedology.” Incorporating Medical Pedology in soil science curricula may be an important strategy to increase enrollment in soil science classes. Soil scientists must look beyond agriculture and teach classes with applications of soil to other global issues: soil and medicine, soil and climate, soil and water, soil and biodiversity, soil and arts, soil and sports, soil and space, soil and industrial raw materials etc. Divisions and Commissions of IUSS may be actively involved in revising the curricula, preparing the next generation of soil scientists to address the current and emerging global issues, inculcate the out-of-the-box thinking, explore new frontiers, and serve the humanity while enhancing the environment and promoting nature conservancy. **We must create a professional niche to be relevant in the era of changing humanity and its impact on the Planet.**

Sincerely,

Rattan Lal,
President, International Union of Soil Sciences

