



Soil and public health: invisible bridges

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Public health institutions, as ancient as civilizations itself, are intrinsically connected with soils. The massive body of the empirical knowledge about this connection has been accumulated. Recently unraveling the underlying mechanisms of this link has begun, and many of them appear to have the microbiological origin. The impressive progress in understanding the nexus between soil and health has been achieved by experimentation with preserved soil microbial systems functioning along with the metagenomic characterization. The objective of this work is to present an overview of some recent onsets.

In the food safety arena, survival of human pathogens in soils has been related to the degree of soil eutrophication and/or related structure of soil microbial communities. Soil microbial systems affect the affinity of plants to internalizing pathogenic organisms. Pharmaceutical arsenals benefit from using field soil environment for developing antibiotics. Enzyme production by soil bacteria is used as the signal source for drug activation. Sanitary functions of soils are dependent on soil microbial system workings. The healthy living can be enhanced by the human immune system training received from direct contact with soils. The hygiene hypothesis considers the microbial input due to exposure to soil as the essential ecosystem service.

The invisible links between soil and public health result in large-scale consequences. Examples of concurrent degradation of soil and public health are worth scrutinizing. Public health records can provide valuable sources of 'soil-public health' interactions. It may be worthwhile to examine current assessments of soil health from the public health standpoint. Soil management can be an efficient instrument of public health control.