



## **Soil biodiversity and human health**

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Biodiversity is important for the maintenance of soil quality. Healthy, biodiverse soils are crucial for human health and wellbeing from several reasons, for example: biodiversity has been shown to be important in controlling populations of pathogens; healthy, well-covered soils can reduce disease outbreaks; carbon-rich soils may also reduce outbreaks of human and animal parasites; exposure to soil microbes can reduce allergies; soils have provided many of our current antibiotics; soil organisms can provide biological disease and pest control agents, healthy soils mean healthier and more abundant foods; soil microbes can enhance crop plant resilience; healthy soils promote good clean air quality, less prone to wind and water erosion; and healthy soils provide clean and safe water through filtration, decontamination by microbes and removal of pollutants. Soil microbes and other biota provide many benefits to human health. Soil microbes are a source of medicines, such as antibiotics, anticancer drugs and many more. Organisms that affect soil health and thus human health include those involved in nutrient cycling, decomposition of organic matter and determining soil structure (e.g. aggregation). Again these are related to food security but also affect human health in other ways. Many beneficial organisms have been isolated from soil – plant growth promoting and disease suppressive microbes used as inoculants, foliar inoculants for improvement of ruminant digestion systems and inoculants used in bioremediation of toxic compounds in the environment. Soil biodiversity is highly recognised now as an important feature of healthy soil and imbalances have been shown to give advantage to harmful over beneficial organisms.

This presentation will highlight the many connections of biodiversity to soil quality and human health.