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Human soil-borne pathogens and risks associated with land use change

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Soil is a source of pathogenic, neutral and beneficial microorganisms. Natural events and anthropogenic activity can affect soil biodiversity and influence the balance and distribution of soil-borne human pathogens. Important bacterial and fungal pathogens, such as Bacillus anthracis, Coxiella bernetii, Clostridium tetani, Escherichia coli 0157:H7, Listeria monocytogenes, Aspergillus fumigatus and Sporothrix schenckii will be discussed. This presentation will concentrate on soil pathogenic microorganisms and the effects of land use change on their prevalence and distribution. In particular, the potential of agricultural soil cultivation to enhance pathogen transmission to human through the release of soil microbes into the air attached to dust particles, contamination of waterways and infection of food plants and animal. Emerging solutions, such as biocontrol and probiotics, will be discussed.