

Environmental Microbiology and Soil Science as Two Basic Approaches in Teaching Sustainable Development

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Abstract

Microorganisms dominate basic issues of life on Earth by controlling the biogeochemical cycles of elements important for the life sustainability, and also affecting geological, hydrological and climate processes. In this way, as well as by numerous direct effects, they affect human beings, animals, plants and the total environment. Thus, environmentally oriented microbiology appears a key scientific discipline to be included in a university teaching when so ever “Sustainable Development” is approached. In our attempt supported by the European Commission we try to contribute to the long-lasting excellence in microbiology in the Czech Republic by adding some actual topics in the environmental microbiology/biotechnology, e.g., dealing with microbial activities in terrestrial and aquatic environments, including polluted sites. Since soil represents a natural habitat for the majority of microbial communities, we also wish to underline the necessity of a broadly based soil protection to be pointed on in teaching , research and practice as well.. In this respect the German Federal Soil Protection Act appears a modern trendsetter internationally. Recently, the importance of soil protection was underlined also in specific communications issued by the European Commission. The aim of our contribution is to present and discuss our current approach in teaching and research in the above respects, and furthermore to make offerings as to the co-operation with other universities in the Czech Republic, and internationally.

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