

## Phytopathology Prediction in Dry Soil Using Artificial Neural Networks Modeling

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**Abstract :** The rapid expansion of deserts in recent decades as a result of human actions combined with climatic changes has highlighted the necessity to understand biological processes in arid environments. Whereas physical processes and the biology of flora and fauna have been relatively well studied in marginally used arid areas, knowledge of desert soil micro-organisms remains fragmentary. The objective of this study is to conduct a diversity analysis of bacterial communities in unvegetated arid soils. Several biological phenomena in hot deserts related to microbial populations and the potential use of micro-organisms for restoring hot desert environments. Dry land ecosystems have a highly heterogeneous distribution of resources, with greater nutrient concentrations and microbial densities occurring in vegetated than in bare soils. In this work, we found it useful to use techniques of artificial intelligence in their treatment especially artificial neural networks (ANN). The use of the ANN model, demonstrate his capability for addressing the complex problems of uncertainty data.

**Keywords :** desert soil, climatic changes, bacteria, vegetation, artificial neural networks

**Conference Title :** ICEGE 2014 : International Conference on Environmental Geosciences and Engineering

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** July 30-31, 2014