

Nitrogen – Friend or Foe of Soil Organisms?

Sophie Zechmeister-Boltenstern

Institute of Soil Research, University of Natural Resources and Life Sciences,
Vienna, Austria

E-mail: sophie.zechmeister@boku.ac.at

Abstract

Soil is the living skin of the earth. Soil is also the largest pool of organic matter on land. The turnover of this organic material is governed by the most diverse community of earth, the soil organisms, which regulate soil fertility, plant growth, and the climate. Given their roles in regulating the exchanges of elements between terrestrial and atmospheric pools it is essential to understand how soil organisms are affected by nitrogen inputs.

The nitrogen cycle is closely linked to the carbon and the phosphorous cycle as all organisms have distinct ratios of C:N:P in their biomass. The biology of nitrogen cycle is unique, as microbes convert nitrogen between unreactive and reactive forms. How does this affect soil biodiversity? Can nitrogen help to store carbon in soils? How can we increase nitrogen use efficiency? These questions have to be addressed if we want to shield ecosystems and develop climate-smart agriculture.

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