

# [***Soil health is linked to primary productivity across Europe***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:69MW-9KF1-JBSP-1079-00000-00&context=1516831)

Ecology Daily News

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**Body**

2023 NOV 15 (NewsRx) -- By a News Reporter-Staff News Editor at Ecology Daily News -- According to news reporting based on a preprint abstract, our journalists obtained the following quote sourced from biorxiv.org:

“The role of ***soil*** biodiversity and ***soil health*** in regulating primary productivity across different land use types is still poorly understood, hindering our ability to predict the impact of ***soil*** degradation on essential ecosystem services such as food provision.

“To address this gap, we conducted a pan-European observational field study using data from 588 sites and 27 countries to investigate the linkages between ***soil*** microbial diversity, ***soil health***, and primary productivity across three major land use types: woodlands, grasslands, and croplands. We demonstrate that a combination of climatic and edaphic factors, together with ***soil*** biodiversity parameters, explained between 20.76% and 31.20% of the variability in primary productivity across contrasting land use types.

“Our study further revealed a general positive effect of ***soil health*** (i.e., microbial biomass, ***soil*** nitrogen and carbon content, and microbial diversity) on primary productivity, particularly for croplands (R2 = 0.16) and grasslands (R2 = 0.18). The effects of ***soil*** microbial diversity depended on the microbial group and the land use type considered.

“In general, higher diversity of beneficial groups (e.g., Acidobacteria, Mortierellomycota) was linked to increased productivity, while the opposite was found for plant pathogens (particularly in croplands). Together, our results provide insights into the importance of ***soil*** biodiversity and ***soil health*** for maintaining essential ecosystem functions across contrasting land use types and highlight the need for land-use specific management strategies for preserving belowground diversity and primary productivity.”

This preprint has not been peer-reviewed.

For more information on this research see: biorxiv.org/content/10.1101/2023.10.29.564603v1

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