

Research reveals that soil invertebrates boost crop yields and soil health

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Researchers at Sun Yat-sen University in China have recently revealed the vital role soil invertebrates play in enhancing soil fertility, texture, and crop yields.

Soil invertebrates, such as termites, ants and earthworms, are found across diverse ecosystems worldwide. By disturbing the soil, they create distinct biological structures such as termite mounds, ant nests, and earthworm casts. These creatures are often referred to as "ecosystem engineers" for their role in shaping the environment.

The researchers spent a year collecting and reviewing 1,047 relevant documents from six continents, extracting a total of 12,975 data records for meta-analysis.

They found that, on a global scale, the soil activities of termites, ants and earthworms can significantly boost the levels of key soil nutrients, such as carbon, nitrogen, phosphorus, potassium, calcium, sodium and magnesium.

Moreover, these activities can enhance several soil indicators, including soil conductivity, respiration rate, microbial biomass and plant biomass.

Chu Chengjin, who led the research team, highlighted the significant contributions of soil invertebrates to global element cycling, material degradation, and biodiversity maintenance.

"Our research indicates that protecting soil invertebrates can boost agricultural production, combat global warming, support ecological restoration, and promote sustainable development," Chu said.