Science Societies

Cover Crops Boost Earthworm Populations

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Summer cover crops planted after winter wheat harvest in south-central Kansas produced sign

Summer cover crops planted after winter wheat harvest in south-central Kansas produced significant amounts of biomass and enhanced earthworm populations, among other soil ecosystem services. Photo by Mark Claassen.

Earthworms make critical contributions to soil ecosystem services. However, how these “ecosystem engineers” respond to cover crops has not been widely discussed.

A review article recently published in the Agronomy Journal synthesized published research data on how cover crops impact earthworm abundance, biomass, and diversity. It also discussed potential factors that may affect those impacts. The review found that cover crops increase earthworm abundance in most cases but have mixed effects on earthworm biomass and diversity although data, particularly on earthworm diversity, are few. Per square meter of soil, cover crops can increase the number of earthworms from 11 to 535 and earthworm biomass from 11 to 44 g. In addition, cover

crops with low C:N ratio managed under no-till or reduced-till systems exhibit higher populations than cover crops with high C:N ratio managed under conventionally tilled systems. Cover crop mixes do not generally increase earthworm abundance more than single-species cover crops.

Adding cover crops can help boost populations of earthworms, allowing these small ecosystem engineers to contribute to the ecosystem services soils provide.

Adapted from Blanco-Canqui, H. (2022). Cover crops and soil ecosystem engineers. *Agronomy Journal*, 114, 3096– 3117. https://doi.org/10.1002/agj2.21160
