# Organic Soil Amendment for Mitigating Damage Caused by Plant-Parasitic Nematodes

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## Abstract

Worldwide, crops are at risk for damage by plant-parasitic nematodes. These soil dwelling microscopic roundworms are difficult to diagnose. Their damage is first noticeable as an overall unthrifty growth and lack of productivity. In vegetable and field crops, there are limited strategies for suppression of these soil-borne pests available. These crops are attacked by a variety of cyst and root-knot nematodes. In regards to agronomic practices, crop rotation, cover crops and soil amendments have allowed for mitigation of their damages. Large amounts of organic by-products are generated during the production of food and fiber materials and other agricultural commodities. For example, generation of bioenergy with anaerobic digesters provides copious amounts of digestate that needs disposal in a most efficient way. These materials offer the potential for closing the recycling gap of nutrient fluxes in agricultural production. In this research program, digestates not only contributed to plant nutrient supply but also to soil health improvements. In these studies, different *Beta vulgaris* species infection by *Heterodera schachtii* was suppressed when nematode-infested soils were amended with digestate before cropping susceptible plants. These findings showed alternative principles for successful cycling of organic materials in the agricultural process for improving sustainability of production systems.

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