

## Do cover crops modify the structure of soil nematodes under banana fields?

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The introduction of cover crops in banana fields develops in Martinique within the context of more sustainable cropping systems. To assess changes in nematode communities, we compared the use of living mulch of grass (*Paspalum notatum*) and legumes (*Pueraria phaseoloides*, *Neonotonia wightii* and *Stylosanthes guyanensis*) with conventional system without cover crops (bare soil) and with a system allowing spontaneous grasses in a 2-years experiment. All nematodes extracted from soil samples were identified at the genus or family level and classified in six trophic groups: bacterivores, fungivore, plant-parasitic, root-hair feeding, omnivores and carnivores. Plant Parasitic Index (PPI) was calculated and soil food web was analyzed using the Structure and Enrichment Indices (SI and EI). Plant-parasitic nematodes that numerically dominate the nematode community do not change significantly according to the cover crop system. However, the PPI was significantly lower in grass cover than in the other systems. Bacterivores nematodes were more abundant in cover crop systems compared to bare soil, indicating an higher level of biological activity. Omnivores were favored by the grass cover while legumes cover promoted carnivores. Nematode faunal analysis indicated that soil food webs of all system were matured, but cover crops system have a high primary productivity compared to bare soil. These results show that if the use of cover crops (grasses or legumes) under banana field can modify the structure of nematode community, these cover crops did not change the maturity of soil food web more after 2 years. They indicate that soil nematodes could be useful indicators of cultural practices to promote sustainable banana cropping system in Martinique.

**Keywords:** banana cropping system, grass cover, legume cover, Martinique, nematofauna, soil food web.