

## NEMATODE COMMUNITY RESPONSE TO VARIED PROPORTION OF DECOMPOSING PLANT LITTER

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| <b>Title</b>          | NEMATODE COMMUNITY RESPONSE TO VARIED PROPORTION OF DECOMPOSING PLANT LITTER  |
| <b>Author Order</b>   | 2 of 3  |
| <b>Accreditation</b>  |   |
| <b>Abstract</b>       | <p>The research objectives were to investigate nematode community response to decomposing plant litter of varying proportions, and to measure the litter decomposition rate. This greenhouse experiments included three treatments of decomposing plant litter with proportions of 30:70, 50:50, and 70:30 (leaf litter to stem-paddy litter, weight to weight), and two controls (commercial organic fertilizers and no-organic matter). We applied the prepared plant litter and organic fertilizers on the surface of the agricultural sandy soil. Soil samples were taken after two, seven, 14, 28, 49, and 77 days to follow nematode temporal changes. Nematodes were assigned to functional groups and family level of a taxon. We used Anova to test the significance of nematode abundance among the treatments, exponential decay model to measure decomposition rates of the plant litter, and canonical correspondence analysis to investigate the correlation of varying plant proportion and nematode community composition. The results showed that nematode functional groups and family did not differ among soils of various plant litter proportions. Bacterivorous Rhabditidae and Cephalobidae, fungivorous Aphelenchidae, and fungivorous-root feeder Tylenchidae inhabited plant litter amended soils. Their abundance, however, differed significantly (<math>p &lt; 0.001</math>) and revealed two temporal patterns, i.e., linear (50:50) and unimodal (30:70 and 70:30). No nematodes were observed in organic fertilizer amended soil and no-organic matter soil. Nematode community composition changed over time according to the litter proportion, in which by the end of experiments, community of 50:50 and 30:70 were the least similar (<math>r</math>: 0.57 of axis-1 and 0.54 of axis-2, CPV: 89.06). We concluded that all litter proportions retained similar quality and supported the growth of similar nematode groups. The litter proportion, however, appeared to influence nematode abundance, their temporal patterns, and community compositions.</p> |
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