

## **12. PLANT SPECIES IDENTITY AND DIVERSITY EFFECTS ON DIFFERENT TROPHIC LEVELS OF NEMATODES IN THE SOIL FOOD WEB**

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Previous studies on biodiversity and soil food web composition mentioned plant species identity and plant species diversity as important factors affecting soil organism abundance and diversity. However, most studies were carried out under time and space limitations. In order to further examine the relation between plant species diversity and the soil food web, we conducted a three-year semi-field experiment with monocultures and mixtures of two, four and eight plant species (forbs and grasses) in which we analyzed the abundance and identity of nematodes in soil and roots and the nematode community distribution over feeding groups from various trophic levels in the soil food web. Plant species diversity and plant identity affected nematode diversity. The effect of plant diversity was attributed to complementarity in resource quality of the component plant species rather than to an increase in total resource quantity. Nematode diversity varied more between different plant species than between levels of plant species diversity. Nevertheless nematode diversity in plant mixtures was higher than in any of the plant monocultures, due to reduced dominance of the most abundant nematode taxa in the mixed plant communities. Plant species identity affected the abundances of lower trophic consumer levels more than higher trophic levels of nematodes. Plant species diversity and plant biomass did not affect nematode abundance. Our results support the hypothesis that resource quality and that plant species identity are more important than resource quantity and plant species numbers present for soil food web component diversity and abundance.