

Breakdown and build-up: the influence of *Eisenia andrei* on the decomposition of *Casuarina equisetifolia* litter and composition of the soil faunal community

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Introduction

Casuarinaceae trees are pioneer species that can be useful for the restoration of tropical soils degraded by mines.

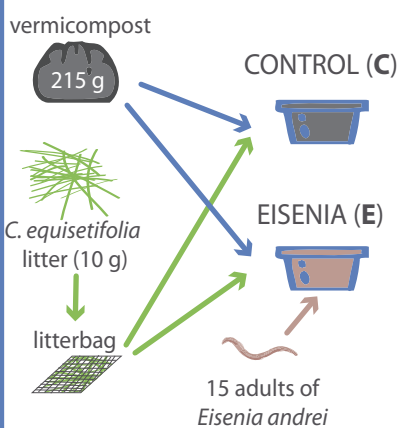
However, its litter is hard to degrade and reduces nutrient recycling in those soils. It is needed to develop procedures to increase decomposition of Casuarinaceae litter *in situ*.

QUESTION: Can earthworms increase the decomposition of Casuarinaceae litter?



Material & Methods

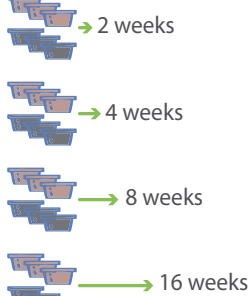
1 EXPERIMENT SET-UP



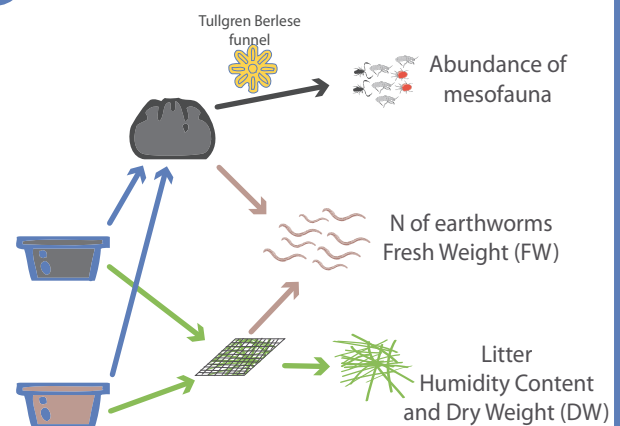
2 DEVELOPMENT

Temp 20°C
Humidity 70-90%

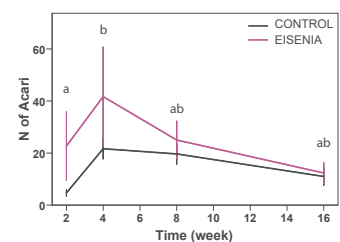
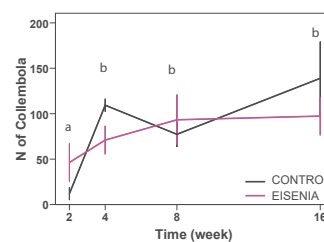
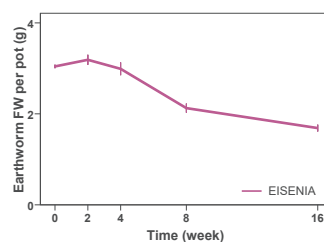
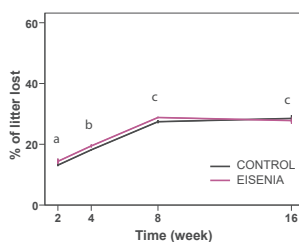
Destructive Sampling



3 PROCESSING and MEASURED PARAMETERS



Results



- ➔ The decomposition of *C. equisetifolia* reaches a plateau after eight weeks of experiment.
- ➔ Under the conditions of the experiment, *Eisenia andrei* did not increase litter decomposition.
- ➔ The population of Collembola increased with time, with higher variation in absence of earthworms.
- ➔ The number of Acari reached a maximum on week 4 and then it decreased.

Conclusions

Eisenia andrei had no effect on the degradation of *C. equisetifolia* litter and a limited effect on the population of collembolans.

It is needed to explore the mixture of Casuarinaceae litter with other organic wastes that increase its degradability by soil organisms.

Acknowledgements

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