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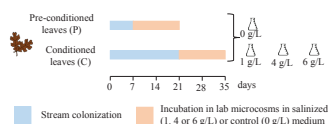
Introduction

Secondary salinization is a global threat to the biodiversity of freshwater ecosystems, affecting leaf litter decomposition through lethal and sublethal effects on its biotic drivers - microorganisms (mainly fungi) and invertebrates.

Main Goal

Evaluate the relative importance of leaf microbial colonization status as modulator of the effects of salt-contamination (1, 4 or 6 g/L NaCl) on oak (*Quercus robur*) leaf litter (microbial and invertebrate-mediated) decomposition.

Methods

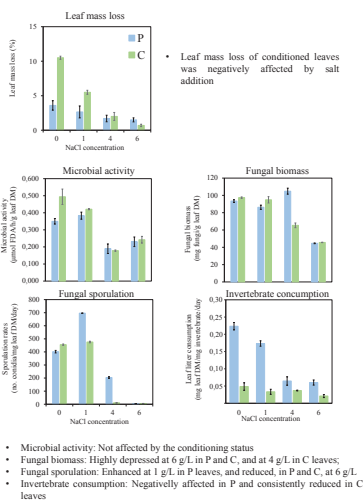


- Oak leaves were colonized during 7 (P leaves) or 21 (C leaves) days in the stream.
- After colonization period, leaf circles of P and C leaves were incubated in salinized (1, 4 or 6 g/L NaCl) or control (0 g/L NaCl) medium, in laboratory, for 15 days.
- Leaf mass loss, microbial activity, fungal biomass and fungal sporulation were evaluated at the end of the salinization period.
- Leaf discs were offered to *Schyzopelex festiva* to evaluate invertebrate consumption

Bibliography

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Results



- Leaf mass loss of conditioned leaves was negatively affected by salt addition
- Microbial activity: Not affected by the conditioning status
- Fungal biomass: Highly depressed at 6 g/L in P and C, and at 4 g/L in C leaves.
- Fungal sporulation: Enhanced at 1 g/L in P leaves, and reduced, in P and C, at 6 g/L
- Invertebrate consumption: Negatively affected in P and consistently reduced in C leaves

Discussion

- Leaf mass loss was affected by salt concentration, particularly at 4 and 6 g/L and by conditioning status (↑ C leaves). Distinct energetic trade-offs between mycelial growth and fungal sporulation at the expenses of degradability occur in P and C leaves. Richer and more palatable microbial communities associated with physically more coherent P (vs. C) leaves may have stimulated shredders feeding activity on P across salinities, despite salt waterborne toxicity.

Conclusion

Conditioning status of leaf litter may be a importante modulator of impacts of chronic salinization on leaf litter decomposition.