



K O N I N K L I J K E N E D E R L A N D S E
A K A D E M I E V A N W E T E N S C H A P P E N

Negative effects of litter richness on root decomposition in the presence of detritivores

Li, Y.; Chen, X.; Veen, G.F.; Eisenhauer, Nico; Liang, Yu; Zhou, X.; Zhang, N.; Ma, K.

2018

document version

Publisher's PDF, also known as Version of record

document license

CC BY

[Link to publication in KNAW Research Portal](#)

citation for published version (APA)

Li, Y., Chen, X., Veen, G. F., Eisenhauer, N., Liang, Y., Zhou, X., Zhang, N., & Ma, K. (2018). *Negative effects of litter richness on root decomposition in the presence of detritivores: lay summary*. (Functional Ecology; No. 20180206). <https://fesummaries.wordpress.com/2018/02/06/negative-effects-of-litter-richness-on-root-decomposition-in-the-presence-of-detritivores/>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the KNAW public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the KNAW public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

pure@knaw.nl

Negative effects of litter richness on root decomposition in the presence of detritivores

Yinong Li, Xi Chen, G.F.(Ciska) Veen, Nico Eisenhauer, Yu Liang, Xiaomei Zhou, Naili Zhang, Keping Ma

Roots form a major source of organic material in the soil and thus represent a key driver of soil carbon and nutrient cycling. Over the last decade, an increasing number of studies have aimed to unravel the role of roots and root traits in the functioning of ecosystems. Here, we investigate how changes in species richness of root litter affect the decomposition of root material. We established a litterbag experiment in a subtropical forest of southeastern China. Litterbags with roots of one, two, four, and eight plant species were deployed in the soil for nearly three years. During the decomposition process, some of litterbags were invaded by detritivores, allowing us to test the effect of detritivores on root mass loss and their interaction with root diversity. We found that root diversity did not change root mass loss in the absence of detritivores. However, all litter types decomposed faster in the presence of detritivores. Notably, the detritivores increased root litter decomposition more at low root diversity (especially single species) than at high root diversity. Detritivore effects were most pronounced during the early stages of decomposition. This differential effect of detritivores on decomposition might depend on the presence and proportion of easily-degradable plant species (i.e. *Pinus massoniana* and *Syzygium buxifolium*) in the root mixture, because they might be more attractive to detritivores. Our results



Ecologist at work.

highlight the importance of detritivores in decomposing root litter in systems containing different combinations of plants.