

Interactive comment on “Strong stoichiometric resilience after litter manipulation experiments; a case study in a Chinese grassland” by C. W. Xiao et al.

Anonymous Referee #1

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General comments:

The manuscript entitled "Strong stoichiometric resilience after litter manipulation experiments; a case study in a Chinese grassland" focuses on the evolution of C, N and P pools and ratio among several grassland ecosystems compartments (aboveground biomass, belowground biomass, litter and microbial biomass). This study is well designed and the statistical analyses well conducted. Even if it is limited to one particular type of grassland and therefore needs to be completed with forthcoming studies, my recommendation for this manuscript is accept with minor revisions.

Specific comments:

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Introduction: Page 3 line 17: Previous studies also considered the microbial biomass in soils under litter addition experiments (e.g. Chemidlin Prévost-Bouré et al., Applied Soil Ecology, 2010). This should be indicated in the introduction.

Methods: Litter addition was done with sieved fragmented litter. Could the authors explain why they chose to do like that. I understand that this was to mimic the activity of soil fauna. However, according to the relatively high sand content and low C content (for a grassland) m, one might expect a relatively low faunal activity. Was it the case or not?

P7 line 22: Why did the authors perform a 24h incubation step at 60% of water holding capacity before the fumigation-extraction procedure. This is not usual for that kind of measurement which can be done directly on fresh soil samples.

Minor comments

Figures are not very reader friendly because of the numerous barplots they are constituted of but I do not ask to change this.

P6 line 6: "15, 30,..." should be "0, 15, 30,..." since the control did not experiment any litter addition.

P7 line 24: Please rephrase. It is unclear whether this is only the non-fumigated sample or both fumigated and non-fumigated samples that were extracted with K₂SO₄.

P9 Title 3.2 is unclear. Please rephrase

P9 line 16: delete "for" in "year for on aboveground"

P13 line 9: "was N limited" in "community N limited"

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