

Interactive comment on “Flower litters of alpine plants affect soil nitrogen and phosphorus rapidly in the eastern Tibetan Plateau” by Jinniu Wang et al.

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Wang et al. present a study about the flower litter and its roles in affecting the soil nitrogen and phosphorous, which is interesting and should attract scientific audience concerning the ecosystem resource cycle in alpine ecosystems. After reading the manuscript, several points should be addressed before acceptance to make the paper more sound and attractive. Line 42-44, the authors said the flower litters of phanerophyte plants were comparable with non-flower litters. To make it clear, the authors should point. The weight or something of litters are comparable. For the abbreviation, it should be mentioned for the first use, after that always use abbreviations. I suggest the authors to introduce why they also want to study P. Is N and P coupled in determin-

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ing the storage and availability of soil resources? Line 159. Are the flower litters of 29 species collected in both sites. or just 14 for one site and 15 for another? Line 179. It seems you did not report the effect of leaf litter addition on decomposition. Line 205. You should make clear how many treatments in the decomposition experiment. To me, it seems there are three. Flower litter of two species and mixture of others. I guess the two species you mentioned should belong to early and later flowering groups, respectively.

Line 205. Can you make it clear how to determine the weight of litter after a period of time in the litter bag? Line 254. Can you compare the flower litter proportion to whole plant biomass in the two collecting groups or five life-form groups? Do the similar comparison for size of inflorescence?

Line 257-265. From the description in these lines, flower litter seems to account more than 60% if the non-flower litter represents biomass without flower. So please make it clear what the non-flower litter stands for, and make the difference between the non-flower litter and individual aboveground biomass

Line 277-278. I suggest put the F and P values after each indices. Line 293. The results you obtained based on the pooled data of all species. As you have measured the N and P of different species, can you present the results of interaction of species and different organs of plant on N and P. Line 313. As the result show no significant effect of interaction between flowering time and litter addition. If the nitrogen content and weight of flowers have no significant difference, TN and DON should have no significant difference. DIN and DNN might be the result of different priming effect of flower addition on soil mineralization rate.

Line 320. I suggest the authors put more emphasis on the DIN and DNN when investigating the effect of flower litter on soil nitrogen. As flowers have high N content, with and without litter addition should have significant difference even no experiment has been done because this relationship seem straightforward. However, for the DIN and

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DNN, mineralization rate might contribute to the DIN and DNN.

Line 366. As you mentioned, in the MM section (Line 179). There should be four treatments, early flowering, later flowering, mixed leaf litter and control. I suppose you might make a typo. In line 179, it might be flower litter mixture.

Line 377. Make the flowering season specific.

Line 390. I suggest to add the information about the flower litter proportion to above-ground biomass in specific time and the whole growing season.

Line 422. Did I misunderstand something? You discussed about the effect of C/N, lignin/N on leaf and flower on their decomposition, but you just reported the decomposition results of flower litter.

Line 438. I am not very familiar with the P cycling in the plant-soil. I guess the A-P comes from the soil and moves to the flower, after flower fall, it goes back to soil. I mean did the plant accelerate the weathering of minerals and contribute to the increased available P in the plant-soil. If not, it is just a redistribution of A-P in plant and soil at different times in the growing season and non-growing season. Line 501. I am not sure the requirement of the "Biogeoscience" to include a conclusion. It makes easier for reader to grab the major findings based on your discussion.

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