This manuscript presents the effects of varied proportions of leaf and flower litter on litter-mixing effects in terrestrial and aquatic ecosystems. The study design and findings are interesting, particularly the investigation on intra-specific interactions on decomposition, which I found to be a novel contribution to the field. I believe the study presents valuable insights and will inspire further research in this area. Given the important role of litter-mixing effects in nutrient and carbon dynamics, the manuscript fits well within the scope of BG.

However, I have a concern regarding the limitations of the study. While the authors acknowledge the significant influence of microbial community composition and abundance on decomposition mechanisms, I am uncertain whether this study offers a sufficiently detailed mechanistic understanding. Please see my detailed comments below for further clarification on this.

The results and discussion sections are clear and well-organized. The other sections could benefit from revision. The abstract and conclusions particularly lack essential discussions that could enhance their impact. In addition, I suggest reorganizing certain paragraphs in the introduction and methods sections to enhance the overall flow. I also recommend supplementing the introduction and discussion sections with relevant citations to bolster the scholarly foundation of the manuscript. Detailed comments are provided below for your consideration.

Detailed comments:
- Line 21: Please revisit this sentence, considering my comment above on the limitations of this study. Also, what is a range of realistic proportions of flower:leaf litter?
- Line 26-27: 'while leaf litter had a higher concentration of Ca, Mg, Na' – What are the implications of this result? How is this important to understand the characteristics of leaf litter and their role on litter-mixing effects?
- Consider mentioning the labile and recalcitrant nature of flower and leaf litter in the abstract.
- Line 27: Consider incorporating this statement "To our knowledge, …" earlier in the abstract. Be concise. (e.g., Line 18, 'for the first time')
- Line 33: Include references across terrestrial and aquatic ecosystems
- Line 48: add relevant reference(s)
- Line 89-105: Consider moving this background information earlier for better flow.
- Consider moving section 2.4 earlier in the methods, as this section pertains to characterizing the initial chemical compositions of flower and leaf litter. I would prefer to read this before the experimental setup.
- Also, consider moving LMPexp (eq. 3) and RME (eq. 4) to section 2.4 and reserve section 2.5 for statistical analysis.
- Line 203-204: Briefly explain the analytical methods/protocols used to determine K, Ca, Mg, and Na contents
- Line 215: three 3 times → three times
- Line 222-225: Clarify this for better understanding.

- Line 278: consistent to → consistent with
- Line 365: Specify what the 'second prediction' was.
- Line 440: Revisit this sentence "However, ……" for clarification.
- Line 479-491: Elaborate on the effects of soil invertebrates and their importance in litter-mixing effects in decomposition. Briefly mention how they affect LMEs. Include references for both caveats mentioned.
- Line 539: the importance litter from … → the importance of litter from …
- Strengthen the conclusions by integrating key points made in the results and discussion sections. I recommend that the authors bolster the conclusions by reiterating important implications of the study, such as those outlined in line 68-71 and line 402-404.