

Interactive comment on “Cultivated grasslands present a higher soil organic carbon sequestration efficiency under leguminous than under gramineous species” by Yu Liu et al.

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Liu et al. propose a manuscript dedicated to the organic carbon sequestration under various grassland types. The topic is of interest with respect to the ‘Grain-for-Green’ Project sustained by the Chinese government. The prime interest of the paper is to decipher the optimal setting under which the transformation to grassland would permit the most efficient SOC sequestration in arid and semi-arid areas. In that regard, their results show the higher efficiency of leguminous species to retain carbon in soils, while gramineous species are much less effective.

The scope of the study and the main result are somehow clear, but the writing, however, is rather complicated and in parts lengthy...I strongly suggest a thorough rewriting of

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the paper to achieve a more logical organization of the discussion, the removal of repetitions and the synthesis of lengthy parts such as the introduction, the presentation of the studied area and the presentation of the data.

More critical is the lack of rigor of the discussion. Many shortcuts and omissions renders the discussion very difficult to follow, and sometimes borderline when it comes to attribute a process to the observed data...the authors have to discuss more deeply their ideas.

Another key problem is that the article fails to attract attention on the importance of such work. Emphasis should be put on the importance of such contribution, not only in the introduction but also through the discussion itself: why does it matter? what's next? what are the perspectives? what broader applicability? etc. Without such perspective, it is hard to evaluate whether the study is of true interest or not for the topic.

Therefore, because of the poor organization, poor english writing, lack of perspective and lack of rigor of the discussion, I do not recommend this manuscript for publication. Instead, I suggest a deep correction before re-submission.

In the attached file, I provide more precise comments and suggestions to improve the manuscript. Because of the abundance of English mistakes, I did not include specific corrections, but instead strongly recommend some collaboration with a native english speaker to improve the writing.

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/se-2016-109/se-2016-109-RC1-supplement.pdf>

Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-109, 2016.

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