



EGUsphere, referee comment RC2
<https://doi.org/10.5194/egusphere-2022-1134-RC2>, 2023
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Comment on egusphere-2022-1134

Anonymous Referee #2

Referee comment on "The role of long-term mineral and manure fertilization on P species accumulation and phosphate-solubilizing microorganisms in paddy red soils" by Shuiqing Chen et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-1134-RC2>, 2023

This study aims to examine 38-year fertilization experiments under 5 fertilizer treatments were conducted to determine their effects on P pool accumulation, soil microbial communities, and phosphate solubilizing microorganisms (PSM) in paddy soils. Authors claimed that different fertilizer management could affect P species, wherein inorganic fertilizer treatments increased inorganic and available P concentrations. However, organic fertilizer treatments increased organic P concentrations, microbial biomass P contents, and alkaline phosphatase activity. Additionally, this study demonstrated that the compositions of PSM also related to different fertilizer managements. Inorganic fertilization increased the abundance of *Thiobacillus* whereas organic fertilization raised the abundance of *Flavobacterium*, *Aspergillus*, and *Trichoderma*. This study provided sufficient and sophisticated data. However, some technical errors such as some unit formats should modify throughout this manuscript. This manuscript also needs to be edited for the sentence construction. Collectively, I recommend the publication of this study after a minor revision. Few specific comments were given below.

Abstract:

The scientific significant should mentioned in the abstract rather than merely state the results. Abstract should emphasize the significance of the work and state the purpose, the main findings of this work.

Line 26-27: Please change mg/L to mg L⁻¹.

Materials and methods:

Line 101: 0-20 cm?

Line 103-104: Please provide detail methods for collecting the rhizosphere soil.

Line 110-111: Please provide methods for soil organic carbon measurement.

Line 117-118: Please confirm the extraction method of acidic soil available P was referred to the Bray No.1.

Results:

Line 209, 216, and 217: mg kg⁻¹.

Discussion:

I suggest authors could provide important diagrammatic sketch for this study.