SOIL Discussions

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Comment on soil-2021-105

Anonymous Referee #1

Referee comment on "Effects of returning corn straw and fermented corn straw to fields on the soil organic carbon pools and humus composition" by Yifeng Zhang et al., SOIL Discuss., https://doi.org/10.5194/soil-2021-105-RC1, 2021

The topic of the manuscript titled "Effects of returning corn straw and fermented corn straw to fields on the soil organic carbon pools and humus composition" is of interest for the "SOIL" readership.

Specific comments

(page, line: comment)

1, 24: Please write the acronym SOC here instead of on line 27

3, 72: There is a new reference for the Soil Survey Staff. The USDA recommended citation is the following: Soil Survey Staff. 2014. Keys to Soil Taxonomy, 12th ed. USDA-Natural Resources Conservation Service, Washington, DC

3, 85: Authors should detail the mineral salt solution they mixed to the corn straw. This could have influenced the characteristics of the fermented corn straw. For example, it showed higher N content than the unfermented corn straw (Table 2).

3, 93-105: Authors adjusted the C/N ratio of the corn straw residues to 25:1 adding urea. Apparently, they did not do the same procedure for the fermented corn straw, that showed a C/N ratio of about 10 (Table 2). Thus the mineralization of the two biomasses could have occurred differently also because of this parameter. Authors should consider also this when discussing their data.

7, 210: Authors did not compost the corn straw residues, but they fermented it. Composting and fermentation are not exactly synonyms. Please correct here and throughout the paper.

Figure 1: It should show all details of treatments, i.e., the common base fertilization and the C/N ratio adjustment.

Table 1 and 2 should show g kg^{-1} or mg kg^{-1} instead of g/kg and mg/kg. Table 2 does not report any statistical analysis between the two biomasses.